Members

Rep. Charlie Brown, Chairperson
Rep. Peggy Welch
Rep. John Day
Rep. Craig Fry
Rep. Charles Moseley
Rep. Win Moses
Rep. Scott Reske
Rep. Timothy Brown
Rep. Richard Dodge
Rep. David Frizzell
Rep. Don Lehe
Rep. Eric Turner
Sen. Patricia Miller, Vice-Chairperson
Sen. Ryan Mishler
Sen. Vaneta Becker
Sen. Edward Charbonneau
Sen. Beverly Gard
Sen. Jean Leising
Sen. Carlin Yoder
Sen. Sue Errington
Sen. Jean Breaux
Sen. Earline Rogers
Sen. Vi Simpson

LSA Staff:

Casey Kline, Attorney for the Commission
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Kathy Norris, Fiscal Analyst for the Commission

Authority: IC 2-5-23

HEALTH FINANCE COMMISSION

Legislative Services Agency
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Indianapolis, Indiana 46204-2789
Tel: (317) 233-0696 Fax: (317) 232-2554

MEETING MINUTES[1]

Meeting Date:	**October 28, 2010**
Meeting Time:	**10:00 A.M.**
Meeting Place:	**State House, 200 W. Washington St., the House Chambers**
Meeting City:	**Indianapolis, Indiana**
Meeting Number:	**3**

Members Present: **Rep. Charlie Brown, Chairperson; Rep. Peggy Welch; Rep. Richard Dodge; Rep. David Frizzell; Rep. Don Lehe; Rep. Eric Turner; Sen. Patricia Miller, Vice-Chairperson; Sen. Vaneta Becker; Sen. Edward Charbonneau; Sen. Jean Leising; Sen. Sue Errington; Sen. Jean Breaux; Sen. Vi Simpson.**

Members Absent: **Rep. John Day; Rep. Timothy Brown; Rep. Scott Reske; Rep. Win Moses; Rep. Charles Moseley; Rep. Craig Fry; Sen. Ryan Mishler; Sen. Beverly Gard; Sen. Carlin Yoder; Sen. Earline Rogers.**

Chairperson Charlie Brown called the meeting to order at 10:05 a.m.

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[1] These minutes, exhibits, and other materials referenced in the minutes can be viewed electronically at http://www.in.gov/legislative Hard copies can be obtained in the Legislative Information Center in Room 230 of the State House in Indianapolis, Indiana. Requests for hard copies may be mailed to the Legislative Information Center, Legislative Services Agency, West Washington Street, Indianapolis, IN 46204-2789. A fee of $0.15 per page and mailing costs will be charged for hard copies.

Marian University presentation on new medical school

Dr. Paul Evans introduced himself to the Commission as the new dean of the Marian University College of Osteopathic Medicine. Dr. Evans informed the Commission that there is a significant shortage for physicians and the shortage is projected to get worse, especially the shortage of primary care physicians. Dr. Evans testified that Marian University plans to begin classes at its medical school in 2012 with 150 students and the first class graduating in 2016. Dr. Evans explained that there are philosophical differences between conventional medicine and osteopathic medicine but that both professions share the same licensing board and have roughly the same curriculum requirements and residency requirements. Dr. Evans stated that the osteopathic curriculum encourages the students to pursue careers in general primary care. Dr. Evans informed the Commission that the new medical school will have an impact on Indianapolis and the whole state; construction for the school will cost approximately $53 million and result in 325 direct jobs and 185 indirect jobs, and this impact does not include the economic impact of the physicians entering the community. Dr. Evans stated that he was making his presentation to the Commission with the hope that the state will support state residents who wish to attend the medical school.

Hospital Supplemental Payment Programs Evaluation Report

Ms. Karen Firestone, Legislative Services Agency, informed the Commission that she evaluated the hospital supplemental payment programs in Indiana as part of the Legislative Evaluation and Oversight program operated under IC 2-5-2 and that Legislative Council assigned the Commission to receive the results of the evaluation. See Exhibit 1 for a copy of the presentation and the evaluation report. Ms. Firestone stated that she reviewed how supplemental payments are funded and distributed, compared the Indiana State Medicaid Plan (Plan) to the statutes and rules concerning supplemental payments, and analyzed the characteristics of safety net hospitals. Ms. Firestone provided the Commission with background information on the Hospital Care for the Indigent (HCI) program, the Upper Payment Limit (UPL), and Disproportionate Share Hospital (DSH) program. See Exhibit 1.

Ms. Firestone informed the Commission that in addition to several minor differences between the Plan and state statutes, there are two significant differences due to proposed Plan amendments not being approved by the federal government: (1) references to HCI funding in the Plan that no longer exist; and (2) a difference in general provisions in statutes and the specifics in the Plan concerning payments involving the number of eligibility periods for qualified hospitals. Ms. Firestone also discussed the impact of the Indiana Check-Up Plan (or Healthy Indiana Plan) on payment distributions to hospitals.

Mr. Brian Tabor and Ms. Allison Taylor, Indiana Hospital Association, thanked Ms. Firestone for the report and commented that safety net hospitals are an important part of the system and the impact of health care reform on the program is still unknown.

Brain Injury Issues

Ms. Pat Casanova, Director of the Office of Medicaid Policy and Planning, FSSA, provided the Commission with a Power Point presentation concerning the Medicaid costs of caring for Medicaid recipients with brain injuries. See Exhibit 2. Ms. Casanova stated that there are 142 people on the Traumatic Brain Injury Medicaid Waiver, which requires a recipient to have nursing facility level of care needs. Ms. Casanova stated that approximately 70 Indiana residents are receiving Medicaid brain injury services at out-of-state facilities, including: (1) NeuroRestorative in Carbondale, IL; (2) Rainbow in Ypsilanti and Farmington, MI; (3) Anchor Inne in Fairview, PA; (4) Coach House in Coldwater, MI; and (5) The Grand Home of Marshall in Marshall, MI. Ms. Casanova stated that the dollar amounts for the out-of-state facilities (See Exhibit 2, page 5) include the per diem costs only and do not include additional outside doctor visits and other services provided to the individual while out of state.

Ms. Faith Laird, Director of the Division of Aging, FSSA, stated that she would prefer to offer the care to individuals with brain injuries in state and has been exploring this option with a work group to determine what the barriers are to providing this care in Indiana. Ms. Laird stated that members of the work group have visited various out-of-state facilities and said that her preference would be to provide services in a campus style setting. Ms. Laird stated that one obstacle is that there is not a license category for providers of these services. Ms. Laird indicated that she would be continuing to facilitate discussion in Indiana to provide brain injury services in state.

Dr. Lance Trexler, Chairperson of the Board for the Brain Injury Association of Indiana, informed the Commission that initial acute hospital costs for individuals with brain injuries are approximately $1 billion and this does not include military individuals with brain injuries. Dr. Trexler stated that there is a need to integrate and stratify a continuum of care for individuals with these injuries and that other states have accomplished this. In response to a question from a Commission member, Dr. Trexler responded that the level of care needed for an individual with a brain injury varies greatly and that the range of severity of the injury is enormous, with some individuals requiring life long care, similar to a chronic disease.

Mr. Vince McGowen, Magnolia Healthsystems, provided the Commission with information on a concept plan for a brain injury treatment campus that Magnolia Healthsystems is considering. See Exhibit 3. Mr. McGowen stated that the campus would include intensive care homes, assisted living homes, and independent living. Mr. McGowen stated that one of the obstacles he has faced in obtaining funding for the project is the lack of a licensure category for providers of brain injury services. Mr. McGowen recommended that the Commission consider having the Indiana State Department of Health develop a licensing category for providers of brain injury services. Sen. Miller shared her personal experience with a family member who suffers with a brain injury and recommended that the Commission move forward with asking the Indiana State Department of Health to develop a licensing category.

Mr. Doug Beebe, Executive Director of Hook Rehabilitation Services, Community Health Network, testified on the importance of identifying brain injuries early and provided statistics concerning brain injuries and substance abuse.

Ms. June Holt, Generations project and mother of a son with brain injuries, introduced individuals in the audience who have family members with brain injuries. Ms. Holt provided information on brain injuries and personal family stories from people suffering with brain injuries. See Exhibit 4.

Chairperson Brown announced that preliminary drafts (PDs) and the final report would now be considered by the Commission. Chairperson Brown presented PD 3476, which establishes the Indiana Brain Injury Study Commission. Sen. Simpson moved that language be added to require the Indiana State Department of Health to adopt rules within two years establishing a licensure category for providers of brain injury services. Sen. Miller seconded the motion. The Commission voted 12 to 0 to recommend amended PD 3476. See Exhibit 5.

Senator Simpson presented PD 3354 which establishes the Hoosier Commission for Communities for a Lifetime, with an amendment that the per diem language be removed from the bill and language added that members on the commission would not receive per diem. The motion was moved and seconded and the Commission voted 12 to 0 to recommend amended PD 3354. See Exhibit 6.

Chairperson Brown presented two drafts concerning smoking bans in public places: (1) PD 3455 which includes an exemption for cigar bars; and (2) pdoc 1086.004 which does not include any exemptions. Chairperson Brown moved pdoc 1086.004 which does not include any exemptions. The vote was 9 to 3 and failed to receive the Commission's recommendation. See Exhibit 7 for both documents and the vote sheet.

Chairperson Brown presented the draft of the final report and indicated that the vote would authorize staff to insert the action taken during this meeting into the final report. The Commission voted 12 to 0 to approve the final report. See Exhibit 8.

Long term care savings plans

Mr. Paul Chase, AARP, stated that AARP generally supports plans that assist individuals in planning for long term care. Mr. Chase testified that long term care has a substantial impact on state funding. Mr. Chase informed the Commission that long term care insurance policies are often cost prohibitive and preexisting conditions also prevent individuals from purchasing these policies, despite the benefit the policies provide with respect to Medicaid asset protection. Mr. Chase provided the Commission with information on the Nebraska long term care savings plan which allows for a state tax deduction to open a long term care savings account. Mr. Chase commented that Nebraska's program has had limited success and lacks oversight and enforcement. Mr. Chase referred to the Community Living Assistance Services and Supports Act (CLASS Act) which passed as part of federal health care reform and which provides for a payroll deduction to assist individuals in planning for long term care.

Commission members commented on the need to provide education to individuals on the need for saving for long term care needs and expressed interest in continuing to look at options to encourage people to invest in long term care savings plans.

CHOICE issues

Mr. John Cardwell, Generations Project, stated that the Community and Home Options to Institutional Care for the Elderly and Disabled Program (CHOICE) provides individuals with a great option to obtain home and community based services. Mr. Cardwell stated that the executive branch has decided to hold back 15% of the CHOICE budget for services. Mr. Cardwell testified that it is necessary to keep the CHOICE program viable and that the cost per person on CHOICE is $5,100 per person, per year in comparison to nursing home costs of $55,000 per person, per year.

FSSA v. IBM Lawsuit Update

Mr. Mike Carter, General Counsel for FSSA, informed the Commission that the lawsuit against IBM concerning modernization of welfare determinations is currently in the discovery stage and over one million documents have been produced so far as part of the lawsuit. Mr. Carter testified that the complexity of the case resulted in FSSA determining that using outside counsel would be appropriate and made this request to the Attorney General's office. Mr. Carter stated that FSSA has a budget set aside to cover litigation costs. Mr. Carter further testified that it is common practice to start work before a contract has been duly executed and that this practice is legal. Mr. Carter stated that both FSSA and IBM have claimed over $100 million in the lawsuit.

Mr. David Miller, Attorney General's office, testified that agencies sometimes request to use outside counsel for lawsuits and the Attorney General's office tries to accommodate the agency who is also the Attorney General's client. Mr. Miller stated that the Attorney General's office makes the final decision concerning whether to use outside counsel and may deny the request. Mr. Miller stated that a request to use outside counsel is not a competency issue on the part of the Attorney General's office but instead an attempt to accommodate the client.

Mr. Carter stated to the Commission that he is confident that the state will prevail in this matter and hopes that a resolution is met before the scheduled October, 2011, trial date. Senator Becker commented that in 2005 members of the Commission recommended that the modernization be done as a pilot program but that FSSA ignored that recommendation, eliminated case workers, and responded slowly to concerns raised about the changes. Sen. Becker stated that this matter could have been avoided if FSSA had given its state employee case managers new computers, software, and training.

Chairperson Brown announced that he has enlisted the services of a group of experts to voluntarily serve on an advisory committee that would assist the General Assembly in preparing for changes that will be needed to implement the Patient Protection and Affordable Care Act. Sen. Miller stated that she was not at this time able to sign the letter establishing the advisory committee. See Exhibit 9 for a list of the members of the Healthcare Implementation Advisory Committee.

The meeting was adjourned at 12:45 p.m.

HFC 10/28/2010 Exh. 1

Issues Concerning
Hospital Supplemental Payment Programs
under the Office of the Secretary of Family and Social Services

Prepared for the Health Finance Commission

Indiana Legislative Services Agency October 28, 2010

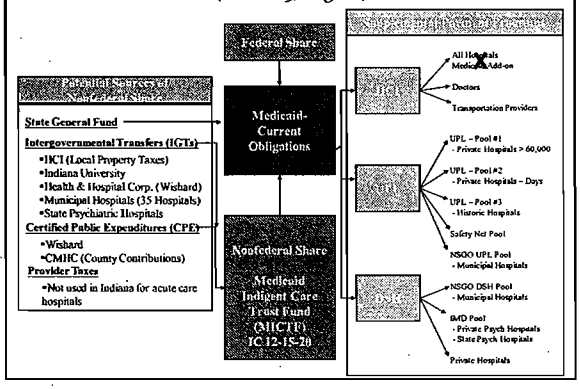
Evaluation Program

- Operates under IC 2-5-21
- Topic selected by subcommittee or legislation
- Report is a "jumping off point" for the committee
  - Review audit reports.
  - Take testimony regarding audit reports and other areas the committee considers related to the committee's work.
  - Make recommendations for legislation.
  - Make recommendations for administrative changes.

Supplemental Payment Report – The report…

- Looks at how payments are funded and distributed
- Compares the Indiana State Medicaid Plan to the statutes and rules for supplemental payments
- Compares HIP payments to supplemental payments
- Analyzes the characteristics of safety net hospitals

Revenue Sources and Payments
(Exhibit 3, Page 12)



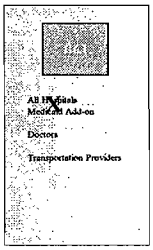
Hospital Care for the Indigent (HCI)

Historically,

- County or county/state program
- Funded through local property tax levies
- Most hospitals were eligible to receive HCI

Hospital Care for the Indigent (HCI)

- 1995
  - Used for Medicaid Add-On payments
  - Excess for nonfederal match for UPL
- 2008
  - State assumed levy for the HCI Fund
- 2009
  - HCI-funded payments no longer used for direct funding of indigent hospital care
  - $3 M nonfederal match for physicians and transportation providers



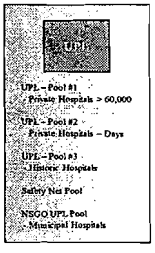
Upper Payment Limit (UPL)

Not a federally required program

[illegible]

[illegible]

Upper Payment Limit (UPL)

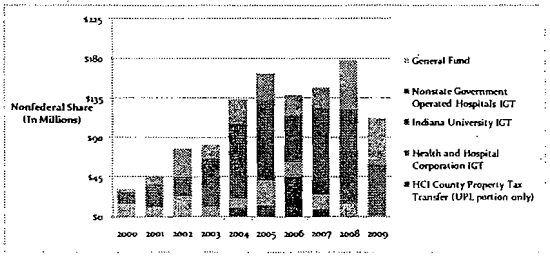


- Individual hospitals may receive more than the hospital's own upper payment limit
- But UPL payments may not exceed
  - the hospital's charges for inpatient Medicaid services

  and
  - the category's aggregate amount

UPL Funding Sources, 2000 - 2009

(Exhibit 4, Page 15)



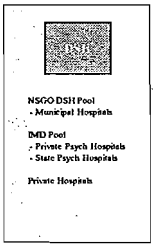
Disproportionate Share Hospital (DSH)

- Required by Medicaid Program
- Additional Medicaid Payment
- Eligibility
  - Low-Income Utilization Rate (LIUR)
  - Medicaid Inpatient Utilization Rate (MIUR)
  - Obstetricians on staff

Disproportionate Share Hospital (DSH)

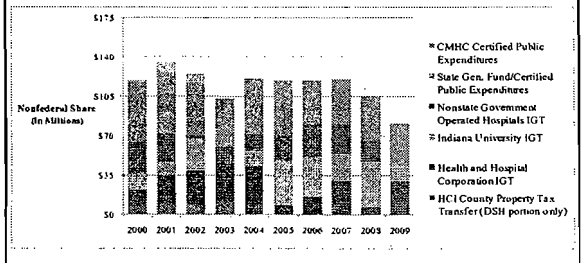
- Federally imposed caps
  - Hospital-Specific Limit
  - Statewide allocation of federal funds
  - IMD cap equal to 33% of total state DSH allocation
- Hospital-Specific Limit is

  Cost of providing Medicaid services *less* related payments *less* Medicaid payments received *less* HCI and UPL payments received



DSH Funding Sources, 2000 - 2009

(Exhibit 5, Page 16)



Indiana State Medicaid Plan

Federal Laws and Regulation	State Statute	Amendment Process and Negotiation	Federal Approval

Differences between State Statute and State Plan

- Medicaid Inpatient Days (60,000 – 70,000)
- [illegible]
- Hospital and Physician Payments Eligible
- [illegible]
- [illegible]
- Private, non-DSH Hospital Payments

Recent History of Supplemental Payments

(Exhibit 2, pg. 10)

Ownership Type	DSH Class	Number of Hospitals Receiving Payments*				
		2000	...	2007	2008	2009
NSGO	Municipal	38	...	38	38	38
NSGO	Not DSH-eligible	6	...	-	-	-
State	Psychiatric	6	...	5	5	5
CMHC	Psychiatric	7	...	8	8	8
Private	Psychiatric	5	...	5	4	4
Private	Historical	8	...	8	7	7
Private	DSH-eligible	11	...	13	13	12
Private	Not DSH-eligible	62	...	72	-	-
Total		143	...	149	75	74

Healthy Indiana Plan

Waiver Program	Insurance Program	Cost Neutrality for Childless Adults	Federal DSH Distribution Waived (Above Base Level)

Implications for Supplemental Payments

- Payments v. Insureds
  - Hospitals Receiving Funds
  - Hospitals in Other States
- Temporary HMAP Increases
- Relative Growth

HIP

- Min Medicaid Reimbursement
- Medicaid Utilization
- Academic Hospitals

DSH

- Min Medicaid Allotment
- Non-Medicaid Uninsured
- Public Hospitals

2009 HIP Payments Are Reaching...

98.7% went to Indiana Hospitals

Hospitals receiving HIP Payments:

78 did not receive a Medicaid Supplemental Payment

66 received both a Medicaid Supplemental Payment and a HIP Payment

Characteristics of Safety Net Hospitals

Ranked Indiana hospitals by uncompensated care as a percentage of total operating expenses

- Uncompensated Care = Charity Care Charges + Bad Debt

Compared top 10% to the rest

- Financial
- Ownership
- Number of Beds, Hospital Type, Location
- Source of Payments
- Supplemental Payments

Characteristics of Safety Net Hospitals

- Top 10% ...
  - Provides double the amount of uncompensated care
  - Have higher % of Medicare and Medicaid patient days and more revenue from governmental sources
  - Rural, critical access hospitals are an important component

Issues Concerning Hospital Supplemental Payment Programs

- Payment funding and distribution
- Indiana State Medicaid Plan
- HIP Payments
- Safety Net Hospital Characteristics

HFC 10-28-10
Exhibit 1

Issues Concerning Hospital Supplemental Payment Programs under the Office of the Secretary of Family and Social Services

July 2010

Health Finance Commission

Indiana Legislative Services Agency

Legislative Evaluation and Oversight

The Office of Fiscal and Management Analysis is a division within the Legislative Services Agency that performs fiscal, budgetary, and management analysis. Within this office, teams of program analysts evaluate state agency programs and activities as set forth in IC 2-5-21.

The goal of Legislative Evaluation and Oversight is to improve the legislative decision-making process and, ultimately, state government operations by providing information about the performance of state agencies and programs through evaluation.

The evaluation teams prepare reports for the Legislative Council in accordance with IC 2-5-21. The published reports describe state programs, analyze management problems, evaluate outcomes, and include other items as directed by the Legislative Evaluation and Oversight Policy Subcommittee of the Legislative Council. The report is used by an evaluation committee to determine the need for legislative action.

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Preface

Each year, the Legislative Services Agency prepares reports for the Legislative Council in accordance with IC 2-5-21. This report concerns the Disproportionate Share Hospital Care Payment Program; the Hospital Care for the Indigent Program; and the Upper Payment Level Program as directed by HEA 1194 - 2009. All three programs are administered by the Office of the Secretary of Family and Social Services and the Office of Medicaid Policy and Planning. It has been prepared for use by the Health Finance Commission.

This report contains an overview of each program including a look at the state and federal history of each program, program requirements, description of how the program works, and an evaluation of Indiana hospital data.

We gratefully acknowledge all those who assisted in preparation of this report. The staff of the Family and Social Services agency, its contractors, and the Indiana State Department of Health were helpful in their responses to our requests for information. We also acknowledge all those who responded to our questions concerning these programs or who assisted in the preparation of this report.

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Legislative Information Center
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Or online at http://www.in.gov/legislative/2398.htm.

Executive Summary

Legislation passed during the 2009 legislative session required review of three Indiana supplemental payment programs for the hospitals that make up the state's safety net. The three programs reviewed include the Hospital Care for the Indigent (HCI), the Upper Payment Level (UPL), and Disproportionate Share Hospital (DSH) programs. This report examines the payments and revenue sources to determine how the State Medicaid Plan and federal approvals affect the implementation of statute, looks at the impact of the Healthy Indiana Plan on federal funds for supplemental payments, and then employs the methods used in a national analysis to examine the characteristics of Indiana safety net hospitals.

The Programs

The HCI program is the oldest of these programs and began as a county-funded, county-operated program. The state assumed administrative responsibilities for the program in 1987. In 1995, the program began funding Medicaid add-on payments to match additional federal funding, rather than provide reimbursement for indigent care the program had originally funded. The state assumed the HCI property tax levy in 2009, which ended the HCI funding source, and the distinct payment program made no payments in 2008 or 2009.

The UPL and DSH programs are both connected with the federally sponsored, state-administered Medicaid program. The programs are authorized in state statute and operated according to the State Medicaid Plan which is approved by the federal Centers for Medicare and Medicaid Services (CMS) and administered by the Office of Medicaid Policy and Planning within the Office of the Secretary of Family and Social Services.

Under federal Medicaid law, states are allowed to set their own Medicaid payment rates within certain parameters. The federal law allows states to pay up to Medicare rates, which are set by the federal government. States began paying a supplemental amount to hospitals based on the gap between the rates set by the state Medicaid plan and the Medicare upper payment limit (UPL). The CMS approves the UPL payments when it approves a state Medicaid plan, and certain federal regulations apply to limit this payment program. However, the program is not specifically required in federal law. UPL amounts are pooled by hospital type, but may be paid out within the pool as determined by the state. There is no specific hospital limit for UPL payments.

The DSH program began as a specific federal program that encouraged states to make additional payments to hospitals that serve a disproportionate share of low-income patients. Limitations to the program were applied at the federal level when states began using circuitous funding schemes to draw down additional federal funds and using the funds as a substitute for general appropriations. The limitations include an allotment to each state and hospital-specific limits on the amount each hospital may receive. UPL payments count toward the DSH hospital-specific limit.

The Indiana Medicaid State Plan

The Indiana Medicaid State Plan is a voluminous document with certain sections concerning HCI, UPL, and DSH. The state legislature may direct the OMPP to submit amendments to the state plan to CMS, or the state plan may be shaped by negotiations with CMS. In review of a state plan, CMS looks to support of the document's policies in the state statute. However, the state statute and the state plan do not always coincide. Amendments to the Indiana State Plan were not finalized, and therefore changes to supplemental payments made in 2007 legislation are not reflected in the State Plan. Funding source elimination in 2008 legislation is also not reflected in the State Plan.

How Medicaid Supplemental Payments Work

There are four parts to the Medicaid supplemental payment programs. First, there is nonfederal revenue, including state general funds, intergovernmental transfers, certified public expenditures, and provider taxes. Next, there are federal matching funds, which represent about 64% of funding overall for Indiana. The funds from these sources are paid into the Medicaid-current obligations account or the Medicaid Indigent Care Trust Fund. From these funds, the resources are paid to hospitals through the payment programs.

In the past three years, the revenue sources for the UPL and DSH programs have consolidated and include the state General Fund, appropriations to state agencies, and intergovernmental transfers from nonstate, government-operated hospitals, Indiana University, and the Health and Hospital Corporation of Marion County. When compared with revenue sources in 2000, certain revenue sources have been discontinued, including HCI property taxes, community mental health/county-funded certified public expenditures, and the Health and Hospital Corporation's and nonstate, government-operated hospitals' intergovernmental transfers on behalf of other hospitals.

A review of the number of hospitals receiving payments from the supplemental payment programs has decreased between 2000 and 2008-2009, and between 2007 and 2008-2009. This is primarily due to non-DSH-eligible hospitals no longer receiving HCI-funded reimbursement for indigent care. The amount of payments received have changed as well with changes in the order that the supplemental payments are made. In the past two years certain hospitals have received a percentage of the full hospital-specific limit. Additionally, the Healthy Indiana Plan (HIP), enacted in 2007, has limited the amount of funding available to the DSH program with a HIP demonstration waiver, but has provided additional funding to a broader range of hospitals. In this way, the HIP may reach hospitals that once received HCI reimbursements, but no longer receive supplemental payments.

Characteristics of Indiana Safety Net Hospitals

A review of hospitals was undertaken by ranking acute-care and short-term-stay hospitals based on the amount of uncompensated care provided. This method was used in a nationwide hospital study completed in 1997. Many of the findings of the Indiana review coincided with the 1997 study, including that the Indiana safety net is made up of rural hospitals as well as urban hospitals and that safety net hospitals have fewer beds than average. The safety net hospitals tend to depend more on patient revenues, and they are owned by local governments and nonprofit private organizations. It was also found that more of the revenue of safety net hospitals comes from Medicare and Medicaid than from other payers such as patients and insurers. With certain exceptions, most of the payments from the Medicaid supplemental programs go to the hospitals that provide the most uncompensated care, but the measure of uncompensated care in the study and that is used in supplemental programs varies.

Conclusion

A review of Indiana's three supplemental payment programs finds that the programs provide additional funding for safety net hospitals - hospitals that provide services for low-income and indigent residents. The HCI program is no longer functioning as a separate program. As a result of the discontinuation of the property tax that funded HCI payments, private hospitals and nonstate, government-owned hospitals that are not DSH-eligible are not receiving as much in direct Medicaid supplemental payments. However, these hospitals are being compensated, somewhat, through additional insurance payments through the HIP.

Introduction

Legislation passed during the 2009 legislative session required the Legislative Evaluation and Oversight Policy Subcommittee (LEOPS) of the Legislative Council to evaluate hospital supplemental payment programs under the Office of the Secretary of Family and Social Services (FSSA). The programs to be evaluated include:

> **The Hospital Care for the Indigent Program (HCI).** HCI was originally a county program that became a county-funded, state-administered program to provide additional funding for hospitals that provide care for indigent patients. Beginning in 2009, the state has eliminated the local funding of HCI, and the program ceased to function as a separate supplemental payment program for hospitals.
>
> **The Upper Payment Level Program (UPL).** The UPL program provides an additional payment to hospitals that serve Medicaid patients under certain federally imposed limits, but is not a federally required program.
>
> **The Disproportionate Share Hospital Care Payment Program (DSH).** DSH is a state and federal partnership program to provide additional payments to hospitals that serve as a safety net. Under federal requirements, this program has both state allocation limits and individual hospital caps.

The oldest of the three programs is HCI, and UPL, the most recent, was enacted into state statute in 1998. Jointly, HCI, UPL, and DSH provide payments to hospitals that are in addition to the basic Medicaid funding for hospitals. Within the federal Social Security Act, Title XIX, Grants to States for Medical Assistance Programs, is Section 1923, which requires states, through the State Medicaid Plan, to provide an appropriate increase in inpatient rates for hospitals that provide a disproportionate share of medical care for low-income individuals with special needs. It is the state statute and resulting rules contained in the State Medicaid Plan and the federal limitations of the Medicaid program that shape and enable these supplemental payment programs.

Medicaid is jointly administered between the federal and state governments. One hallmark of the Medicaid program is the sharing of expenses between the states and the federal government, where the states determine, within federally established parameters, the amount of reimbursement they will provide for patient services. The federal matching share is determined by a state's income relative to all states' incomes, and in Indiana, on average, is typically about 64% of program funding. Since hospitals that serve a disproportionate share of low-income[1] and indigent[2] individuals may not receive sufficient funds to operate, supplemental payment programs evolved.

The federal supplemental payment programs operate in the same way as Medicaid, with states setting payment policy concerning payments within broader federal guidelines, and a federal match providing about two-thirds of the program funding. For these supplemental payment programs, certain federal limits have been enacted in federal statute and rules. Also, all payment methodologies are written into the State Medicaid

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[1]People who may qualify for Medicaid and may be able to pay some portion of health service charges.

[2]People without the means to pay for medical services and who, mostly, do not qualify for Medicaid.

Plan, which must be approved by the federal oversight agency, the Centers for Medicare and Medicaid Services (CMS). State statute sets the state's policy, but the federal oversight shapes the actual way in which the program works. In this review, a disconnect between state statute and the State Medicaid Plan is discussed.

This paper also reviews the ways in which the programs have made supplemental payments in recent years. Also, the history of the funding and payments for the Medicaid supplemental payment programs is reviewed. A federal Medicaid waiver for a demonstration project, the Healthy Indiana Plan, is also discussed for its impact on DSH funds and hospitals providing services to low-income and indigent individuals. Finally, financial and other information from acute care and critical access hospitals are used to analyze the characteristics of the hospitals that form the safety net in Indiana.

Evaluation Technique

The history of programs developed for this report came from a variety of places, including review of state statutes, interviews with people of interest, and interim committee testimony. A literature review provided a method for evaluating safety net hospitals, which was undertaken with data provided both by Myers and Stauffer, a contractor for the FSSA, and from website reports from the Indiana State Department of Health. Myers and Stauffer and the Office of Medicaid Policy and Planning (OMPP) within the FSSA also provided information concerning payments from the Medicaid supplemental payment programs.

Terminology

Throughout the paper, there are certain terms that have specific meanings. Some of the definitions that will promote understanding of the descriptions of the programs are provided here.

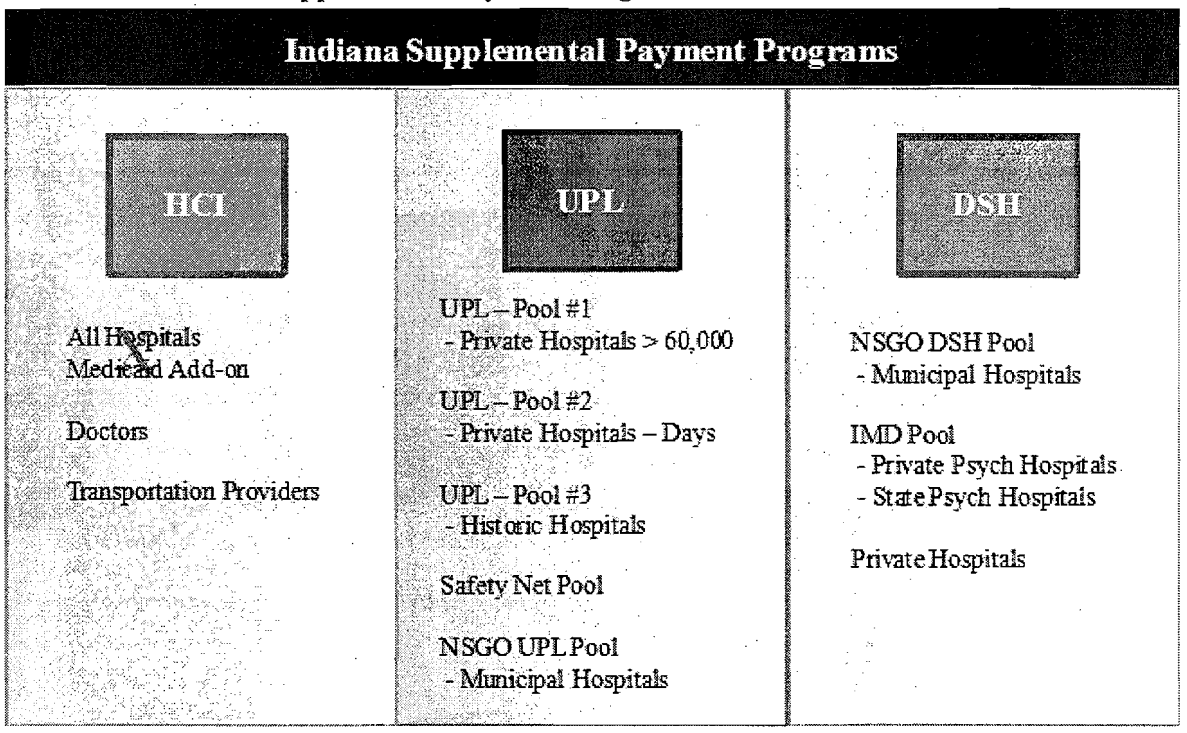
Charges, Revenue, and Costs. The full amount that a hospital requests for its services are the charges. Gross charges may be reduced by contractual agreement or discounted, resulting in the net charges. The amount that the hospital receives, regardless of source, is the revenue. And the amount paid for staff and equipment to provide a service is the hospital's cost of service.

Upper Payment Limit and Medicaid Shortfall. For the purposes of this paper, *upper payment limit* will equal the difference between services valued under Medicare payment principles and Medicaid receipts for services, while *Medicaid shortfall* will mean the difference between a hospital's cost of services provided to Medicaid patients and the Medicaid payments received. This usage coincides with federal terminology, but conflicts with state statute which in IC 12-15-15-1.1(f) describes the Medicaid shortfall as synonymous with the upper payment limit.

Medicaid Supplemental Payments at Work

This section describes how payments are made from each supplemental payment program, but first describes the program itself and some of the eligibility requirements and payment limits. Then, the payment methodology, including the pooling of hospitals into groups for payment (as seen in Exhibit 1), will be discussed. Finally, payments from each program will be compared over the years to show how funding changes and payment methodology has changed what each pool of hospitals receives.

Exhibit 1. Indiana's Supplemental Payment Programs.



Each of Indiana's programs provides funding to distinct groupings of hospitals. However, in some cases, these programs overlap, and funding from one program may limit or prohibit payments from another program.

[State and federal legislative history is described in Appendix A.]

Hospital Care for the Indigent (HCI) Program

The Hospital Care for the Indigent program was historically funded through local property tax levies and authorized in statute to pay for emergency care for indigent county residents and indigent visitors who needed emergency care while visiting the county. Over time, the HCI funds were used to leverage federal Medicaid funding by paying for certain Medicaid services or by making Medicaid add-on payments. The only

eligibility requirements for a hospital to receive payments through the HCI program were that the hospital provided uncompensated care to uninsured or indigent individuals. Consequently, most if not all hospitals were eligible to receive HCI payments.

In 1995, the HCI funds began to be used as the state match for federal funds by providing to hospitals an add-on payment to regular Medicaid program reimbursement. Funds in excess of those needed for add-on payments were used as the nonfederal match for UPL supplemental payments.

In 2008 legislation, the state assumed responsibility for several local property tax levies for welfare funds, including the levy for the HCI fund. Beginning in 2009, the state provides approximately the same level of support for supplemental Medicaid payments through the use of general revenues. For all practical purposes, HCI-funded payments are no longer used for the direct funding of indigent hospital care or UPL payments. However, by statute approximately $3 M in state funds continue to be used for the nonfederal match to make payments to physicians and transportation providers.

An HCI payment methodology still exists in state statute. However, no HCI payments to hospitals or HCI-funded Medicaid add-on payments were made in 2008 or 2009.

Upper Payment Limit (UPL) Program

The Upper Payment Limit supplemental payment program is not a separately enacted program at the federal level. Instead, UPL payments are a feature of the regular Medicaid program and represent an additional payment to a hospital or nursing home facility that was already compensated for providing Medicaid services through the existing claims-based reimbursement system. There is no federal requirement for states to make these particular supplemental payments, nor are there federally mandated methods for calculating UPL payments. However, the methods adopted by the state for formulating UPL payments must be approved by the CMS in the State Medicaid Plan.

Within the Medicaid program, there are general guidelines for what states can reimburse, including a ceiling or upper limit. Under federal rules, the reimbursement "may not exceed the amount that would have been paid for those services under Medicare payment principles. [3] States pay hospitals under Medicaid reimbursement methodologies established in the State Plan, and then estimate how much more the hospitals would have been paid for the services under Medicare principles. The difference between the payments and the estimate is the amount that is available for additional reimbursement and referred to as the upper payment limit.

UPL payments were historically reported with other hospital payments for purposes of claiming federal match. However, effective October 2009, the federal reporting form was modified to require separate reporting of UPL payments.

Eligibility Determination for UPL

Since a UPL payment is an add-on payment to the amounts paid for Medicaid services, any hospital providing Medicaid services would qualify within federal requirements. Although state statute and the State

[3] 42 CFR 447.272.

Medicaid Plan provide the potential for all hospitals to be eligible for UPL payments, the current payment methodology results in only DSH-eligible private hospitals receiving private UPL supplemental payments. [Prior to 2004, non-DSH hospitals received only HCI payments. Beginning in 2004, private non-DSH hospitals also received UPL payments. However, as will be described in more detail later, since 2008, no UPL payments have been made to private hospitals that were not also eligible for DSH.]

UPL Payment Caps

UPL supplemental payments are not subject to either individual hospital-specific caps or a single statewide limitation. Rather, the payment limitations are based on the aggregated UPL of all hospitals for each of the following mutually exclusive categories:

(1) Inpatient services in state-owned or -operated facilities.
(2) Outpatient services in state-owned or -operated facilities.
(3) Inpatient services in publicly owned or operated facilities (not state government).
(4) Outpatient services in publicly owned or operated facilities (not state government).
(5) Inpatient services in privately owned or operated facilities.
(6) Outpatient services in private owned or operated facilities.

The upper payment limit is aggregated over all hospitals in each category, regardless of subsequent determination of DSH eligibility or payment under the UPL program. Because of this and because there is no hospital-specific limit for UPL payments, an individual hospital is allowed to receive more in supplemental payments than the hospital's own upper payment limit amount as long as the payments to the hospital do not exceed the hospital's charges for inpatient Medicaid services and the total payments for all of the hospitals in the category do not exceed the aggregate upper payment limit for that category.

The six categories listed above are used for determining aggregate hospital payment limitations and do not describe the categories or payment pools to which UPL and DSH payments are directed. The payment pools are described later.

UPL payments are considered non-DSH supplemental payments.

Disproportionate Share Hospital (DSH) Program

Safety net hospitals serve a disproportionate share of people who are indigent or are Medicaid patients. Research has shown that safety net hospitals also train the majority of the country's graduate medical students. The Disproportionate Share Hospital Payment Program provides additional payments to hospitals that provide a safety net for indigent and low-income individuals. The payments are in addition to payments received by the hospitals from Medicaid claims-based reimbursement (including any UPL payments) or any other public or private payment on behalf of indigents.

Disproportionate Share Hospital adjustments were established by Congress in 1981 when states were released from the requirement of reimbursing providers of inpatient hospital services on the basis of Medicare payment principles. In return for the increased flexibility in determining their Medicaid reimbursement levels and the potential for severely reduced reimbursement, states were required to provide assurances that payment rates were "reasonable and adequate" and "take into account the situation of

hospitals which serve a disproportionate number of low-income patients with special needs" by increasing payment rates for those hospitals. Because Medicaid payment levels tend to be lower than Medicare, DSH payment adjustments were mandated as a method of protecting hospitals serving disproportionately large numbers of low-income and uninsured patients.

DSH Eligibility Determination

There is no single definition of a safety net hospital. Originally, the determination was left to the states. Under federal program requirements, as of 1987, there are two tests to determine if a hospital is eligible for DSH payments.

- A Low-Income Utilization Rate (LIUR) hospital has low-income utilization of at least 25%. This is determined by analysis of the hospital's revenues and charges.

- A Medicaid Inpatient Utilization Rate (MIUR) hospital has a Medicaid utilization rate more than one standard deviation above the average Medicaid utilization rate, statewide.

Eligibility determination begins with cost information supplied by the hospitals to the OMPP and the OMPP's consultants. One year of cost information may be used for several years, which is known as the eligibility period. According to the Indiana State Plan, the eligibility period must be at least two years and no more than four years in duration. In state law, OMPP determines the appropriate base year for the DSH program. In 2009, Indiana entered the fourth year of an eligibility period that was based on SFY 2004 cost data. For 2010, a new base year will be used, and the eligibility period is expected to last two years, 2010 and 2011. Hospitals' 2009 cost reports will be used for determining eligibility for the 2010-2011 eligibility period.[4]

Since Medicaid is a jointly administered program, administered by the state within certain federal parameters, the federal criteria have been adopted into state statute and entered into the State Medicaid Plan with certain additions that apply to Indiana.

From the federal guidelines, Indiana has enacted requirements that eligibility for the DSH program be determined based on utilization and revenue data from the most recent year for which an audited cost report is on file with the OMPP. There are various ways to attain DSH eligibility, depending in part on the facility's ownership and type of institution.

(A) An *acute care hospital*, a *state mental health institution*, or a *private psychiatric institution* can be determined as eligible for DSH by meeting criteria involving either the provider's low-income utilization rate (LIUR) or Medicaid inpatient utilization rate (MIUR).

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[4]Recent base years have been 2000 (covering an eligibility period of 2000 and 2001, which were calculated based on hospitals' cost report periods ending within SFY 1998); 2002 (covering 2002 and 2003, based on SFY 2000 cost reports); 2004 (covering 2004 and 2005, based on SFY 2002 cost reports); and 2006 (covering 2006, 2007, 2008, and 2009, based on SFY 2004 cost reports).

LIUR Status: The provider's low-income utilization rate is greater than 25%.

LIUR = (provider's Medicaid revenues + cash subsidies received from state and local governments) ÷ (provider's total patient revenues, including cash subsidies)
+
(provider's total charges for inpatient services provided to indigents - cash subsidies received from state and local governments attributable to inpatient services[5]) ÷ (provider's total charges for inpatient services)

MUIR Status: The provider's Medicaid inpatient utilization rate is at least one standard deviation above the mean rate for providers receiving Medicaid payments in Indiana. (Providers meeting the LIUR condition are excluded when calculating the mean MIUR rate.)

MIUR = (provider's total Medicaid inpatient days for most recent year) ÷ (provider's total inpatient days for most recent year)

where Medicaid inpatient days include all acute care days attributable to individuals eligible for Medicaid benefits.

(B) An *acute care hospital* can also attain DSH eligibility by being established under IC 16-22-2 (county-owned) or IC 16-23 (municipally owned) and having a MIUR greater than 1%.

(C) A *community mental health center* (CMHC) that receives county funding and provides inpatient services to Medicaid patients is eligible for DSH payments if the center has a MIUR greater than 1%.

An additional federal requirement for DSH eligibility is that certain providers must have at least two obstetricians who have staff privileges and who have agreed to provide obstetric services under the Medicaid program. However, there are two exceptions to this federal requirement: (1) The hospital inpatients are predominantly under age 18, and (2) The hospital did not provide nonemergency obstetric services to the general population as of December 22, 1987.

Within these broad categories, several different provider groups are denoted.

- A *Historical* DSH provider (sometimes referred to as the "Class of 1998") is an acute care hospital, either public or private, which was eligible for DSH for FY 1998 and is also eligible for the current period. Historical DSH hospitals currently include Clarian Health Partners, Wishard, Gary Methodist, Fayette Memorial, Huntington Memorial, St. Anthony Memorial, St. Catherine, and St. Margaret Mercy.

- A *nonstate, government-owned or -operated hospital* (NSGO) is either a county-owned hospital established under IC 16-22-2, a hospital established under IC 16-22-8 that is owned and operated by the Health and Hospital Corporation of Marion County (i.e., Wishard), or a municipal hospital established under IC 16-23.

- A *Municipal* DSH provider is an NSGO (i.e., either a county-owned hospital established under IC 16-

[5]The State Plan equation differs from the equation in state statute. The differences will be discussed further in the section *The Indiana Medicaid State Plan*.

22-2 or a municipal hospital established under IC 16-23) with a MIUR greater than 1%. Wishard is not included under the Municipal DSH classification.

- A *Safety Net* hospital is defined in the State Medicaid Plan as an acute care hospital that is eligible for DSH payments. As such, a Safety Net hospital includes both private acute care hospitals and NSGOs.

DSH Payment Caps

Contrary to the structure of payment limits that apply to the UPL program, a hospital that qualifies for DSH payments is subject to a federally imposed cap to limit the payments that an individual hospital can receive. Additional limits on total statewide DSH funding and on total payments to institutions of mental disease (IMD) are also imposed, and these aggregate limits also affect the amount of DSH payments that any individual hospital might receive.

There are three primary federal limitations or caps placed on DSH payments, including:

- A *Hospital-Specific Limit* that caps the amount each hospital can receive.
- The statewide allocation of federal DSH funds.
- An IMD cap on institutions for mental disease equal to 33% of the total state DSH allocation.

DSH payments are supplemental payments to offset hospitals' *uncompensated* costs of serving Medicaid and uninsured individuals. Consequently, each hospital is subject to a hospital-specific limit based on the hospital's amount of service provided to Medicaid and uninsured patients. The hospital-specific limit is calculated to reflect each hospital's cost of providing services to Medicaid recipients and to individuals who are uninsured *less* any related payments, *less* Medicaid payments received, *less* HCI payments received, and *less* UPL payments received.

Order of Payments and Payment Shares

The order of payments can help maximize the amount of federal funding received and provide for equitable distribution of UPL and DSH when there are insufficient funds to pay full share or other limitations to making a full-share payment. The order of payments is authorized in statute, and prior to 2008 the order of supplemental payments was largely prescribed in state statute.[6]

For FY 2008 and years thereafter, OMPP may make payments "in the order of priority that best utilizes available nonfederal share, Medicaid supplemental payments, and Medicaid disproportionate share payments, and may change the order or priority at any time as necessary for the proper administration of one or more of the payment programs."[7] [Descriptions of the order in which the various payment pools were paid for 2000 through the anticipated payment procedure for 2010 are provided in the table provided in Appendix B.]

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[6]For FY 2005 and before, the order of payments was established by IC 12-15-20.7-2(a), by IC 12-15-20-2(8)(D) for FY 2006 and FY 2007, and by IC 12-15-20.7-2(b) for FY 2008 and after.

[7]IC 12-15-20.7-2

UPL supplemental and DSH payments are made on a state fiscal year basis (July 1 to June 30). However, DSH allotments are received on a federal fiscal year basis (October 1 to September 30).

Supplemental Payment Pools

Various hospitals are grouped into pools for allocation of supplemental payments. Each pool or grouping is seen in Exhibit 1 and described below. The pools are presented with the funding limits and conditions.

UPL Payments

Private Hospitals with more than 60,000 Medicaid Inpatient Days (UPL Pool #1): According to current statute, private hospitals having more than 60,000 Medicaid inpatient days are paid UPL payments totaling $10 M, which is to be divided equally between inpatient and outpatient pools. Clarian is currently the only hospital falling within this category.

Historical DSH hospitals (UPL Pool #3) are paid UPL payments by agreement with the state. This payment pool consists of hospitals defined in statute as acute care hospitals that were eligible for DSH payments in FY 1998 and that are eligible for DSH for the period being considered. Under agreement with the state, payments are based on inpatient days and case-mix indexes.

Safety Net Hospitals: If UPL funds are insufficient to provide each hospital an amount to pay the hospital's entire Medicaid shortfall amount, payments are prorated so that each hospital receives the same *percentage* of their shortfall amount. Hospitals in this category must be eligible for DSH and are therefore subject to the payment proration criteria described below for private hospitals receiving DSH Payments.

Municipal Hospitals: Generally, municipal hospitals receive payments up to each hospital's entire hospital-specific cap. *The payments can come from either UPL funds or DSH funds or a combination of the two.* For the first time, in FY 2009, the combined UPL and DSH funds were insufficient to pay all of their cap amounts. When there are insufficient funds to pay all of the hospitals' cap amounts, each hospital receives the same percentage of their cap.

Private Hospitals (UPL Pool #2): If there are sufficient UPL funds for payments to this category, the pool for private hospitals is distributed (1) based on each hospital's relative share of the total Medicaid inpatient days for hospitals in the pool or (2) in accordance with another payment methodology determined by OMPP and approved by CMS. A hospital's Medicaid inpatient days are the hospital's in-state and paid Medicaid fee-for-service and managed care days for the state fiscal year.

DSH Payments

Nonstate Psychiatric Hospitals: According to statute, nonstate psychiatric hospitals receive an aggregate $2 M DSH allocation from the IMD pool. (The IMD pool is equal to 33% of the statewide DSH allocation.) The $2 M is distributed to the hospitals based on each hospital's MIUR.

State Psychiatric Hospitals: State mental health institutions generally receive the balance of the IMD DSH pool (up to a statutory maximum of $191 M), which is distributed based on each hospital's low-income utilization rate, or LIUR.

Municipal Hospitals: Municipal hospitals that are eligible for DSH payments.

Private Hospitals: Private hospitals in this category must be determined to be eligible for DSH payments. The State Medicaid Plan requires a payment adjustment for hospitals that have only been eligible for one or two eligibility periods. Hospitals qualifying for DSH for the first time are eligible to receive only 1/3 of the established payment amount. This payment adjustment is in force for the entire eligibility period. If a hospital is determined to be eligible for a second consecutive period, the payment adjustment is 2/3 of the established amount. After the third consecutive eligibility determination, the hospital is entitled to receive 100% of the established payment amount for as many eligibility periods as eligibility is maintained.

Recent History of Supplemental Payments

The payment totals for each pool or category of payee for 2000 through 2009, along with the federal and nonfederal sources of funding associated with those payments, are provided in Appendix C. The most notable feature of the recent payments concerns the change in number and types of hospitals that received payments in 2008 and 2009 compared to prior years.

The number of hospitals receiving supplemental payments of some type has dramatically decreased, largely due to the elimination of the HCI payments and HCI-funded Medicaid add-on payments beginning in 2008. There were 143 hospitals receiving supplemental payments in 2000. Although some hospitals were either eliminated or consolidated with other hospitals over this time period, the number of hospitals receiving supplemental payments declined to 74 by 2009. Even as recently as 2007, there were 149 hospitals receiving payments. The number of hospitals by ownership type and DSH class that received some type of supplemental payments are summarized in the following table.

Exhibit 2. Number of Hospitals Receiving HCI, UPL, or DSH Supplemental Payments by Ownership Type and DSH Class.

Ownership Type	DSH Class	Number of Hospitals Receiving Payments*				
		2000	...	2007	2008	2009
NSGO	Municipal	38	...	38	38	38
NSGO	Not DSH-eligible	6	...	-	-	-
State	Psychiatric	6	...	5	5	5
CMHC	Psychiatric	7	...	8	8	8
Private	Psychiatric	5	...	5	4	4
Private	Historical	8	...	8	7	7
Private	DSH-eligible	11	...	13	13	12
Private	Not DSH-eligible	62	...	72	-	-
Total		143	...	149	75	74

* Some of the hospitals that did not receive payments in 2008 and 2009 may have either gone out of business or were consolidated into other hospitals' systems.

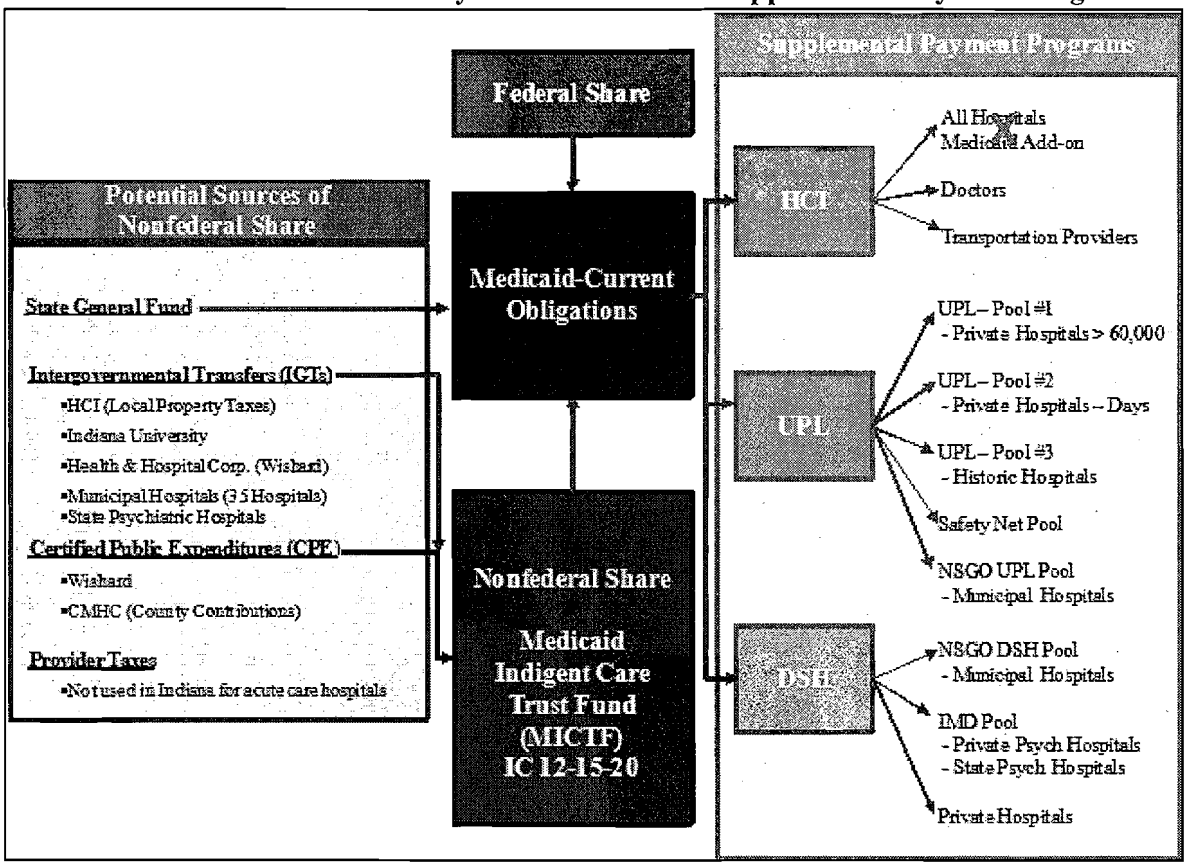
Source: OMPP

Total payments from the HCI, UPL, and DSH programs aggregated for each individual hospital for each year of the ten-year period between 2000 and 2009 are shown in Appendix D.

Supplemental Payments Funding

Exhibit 3 shows the basic Indiana Medicaid supplemental payment programs and the general flow of funds. The federal share is about two-thirds of the funding that supports the state Medicaid supplemental payments. There are multiple potential sources for the nonfederal share for funding supplemental payments. As discussed above, the funds are allocated to one of three programs, and then distributed in various payment programs to hospitals of different types. The payment and funding process will be discussed in this section.

Exhibit 3. Revenue Sources and Payments of Medicaid Supplemental Payment Programs.



Potential Sources of Nonfederal Funding

The supplemental payments in Indiana have been funded with local property tax revenue, intergovernmental transfers from hospitals (IGTs), and certified public expenditures (CPEs). State general revenues have since replaced the use of HCI property taxes in the supplemental programs. The following section describes these funding sources and their contribution to matching federal funds.

A listing of the nonfederal sources of funding for HCI, UPL, and DSH and the associated federal dollars are provided in Appendix C for FY 2000 through FY 2009.

State General Fund

The funding of Medicaid supplemental payments made minimal use of state General Fund appropriations until the HCI property tax levy was eliminated. Expenditures made from appropriations of state General Fund dollars within the biennial state budget can be counted as part of the nonfederal match for supplemental programs. Qualified expenditures by the Division of Mental Health and Addictions and the FSSA administration can count toward the nonfederal share of DSH if they are made by eligible institutions. Certain expenditures made by the state psychiatric hospitals as the nonfederal match are intergovernmental transfers (IGTs).

Intergovernmental Transfers

The largest source of nonfederal funding is IGTs, which are transfers of funds from one governmental entity to another. Thus, IGTs only come from a local unit revenue source, appropriations for a state facility, or a nonstate, governmentally owned and operated hospital and may not come from a private hospital.

The locally generated HCI property tax levies have historically been transferred from each county to the State HCI Fund (the exception being Marion County, which funded its own HCI-type program through the Health and Hospital Corporation). The state HCI funds were later used to make HCI payments directly or were matched with federal funds to make Medicaid add-on payments to hospitals and incorporated into Medicaid rates for doctors and transportation providers. HCI funds were also used to provide the nonfederal match for HCI-funded UPL payments.

Historically in Indiana, supplemental payments have also been funded through IGTs from Indiana University, the Health and Hospital Corporation of Marion County (Wishard), and from the municipal hospitals that receive payments.

Certified Public Expenditures

Certification of public expenditures requires that the expenditure is made by a governmentally owned and operated hospital. It is certified by the entity to the state and used as evidence of an expenditure (both the state and federal shares) that qualifies for federal matching funds.

- Expenditures by the Health and Hospital Corporation have sometimes been certified as the expenditure for municipal hospital UPL and DSH payments.

- County contributions provided to community mental health centers in the past have been certified as expenditure for the IMD DSH pool payments.

Provider Taxes

Provider taxes, while used in other states, are not used for funding hospital supplemental payments in Indiana. [Although not discussed in this report, the nursing home Quality Assessment Fee is a form of provider tax that is used for making supplemental Medicaid payments to Indiana nursing facilities.]

Medicaid Indigent Care Trust Fund (MICTF)

The Medicaid Indigent Care Trust Fund (IC 12-15-20) was established by P.L. 2-1992. The MICTF is a nonreverting fund that was established for the purpose of receiving IGTs from the various governmental entities and then funding the nonfederal share of Medicaid add-on payments and UPL and DSH payments.

- The MICTF can also potentially be used for making Medicaid payments for pregnant women and infants and children.

- Expenses of administering the fund are to be paid from money in the fund, and monies are to be invested in the same manner as other public funds.

Like all Medicaid expenditures, an actual payment must be made to a provider prior to any request for federal reimbursement. No payments are made directly from the MICTF. If the nonfederal share of payments are not funded by an IGT or through a CPE, but rather from the MICTF, the nonfederal share of the payments are transferred to the Medicaid-Current Obligations account to reimburse the state for payment of the nonfederal share.

According to OMPP, the state mental hospitals are paid by the state as calculated and claimed through journal entries by the FSSA Accounting Operations. All other DSH payments are issued through HP (the state's fiscal agent), as calculated by OMPP and Myers and Stauffer (the state's Medicaid rate-setting contractor).

Nonfederal Funding Summary for UPL and DSH

For UPL and DSH, the relative use of each form of nonfederal contribution to supplemental payments varies over time, largely depending on...

The eligibility determinations of individual hospitals.
The statewide allotment of DSH monies.
The hospital-specific DSH payment limitations.
The payment limitations within the UPL program.
The availability of locally generated tax revenues.
The extent to which state funds are used.
The extent that public hospitals can contribute funds.

Also, the funding mix between the UPL and the DSH programs can be altered to maximize the federal match.[8]

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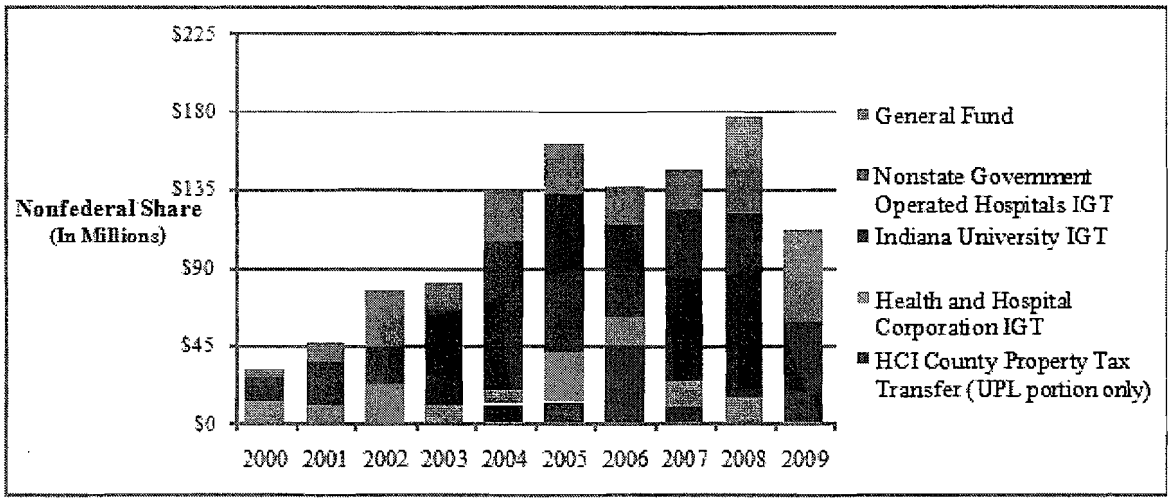
[8]HCI-funded Medicaid add-on payments, which might be considered a form of UPL payment, are not included in this discussion of nonfederal funding since they were funded from a single source of revenue, the Hospital Care for the Indigent property tax levy.

UPL. Historically, the nonfederal share of UPL payments has been largely provided by IGTs from Indiana University and the public hospitals, made by or on behalf of the type of hospital receiving the payments. For example, municipal hospital UPL payments have been typically funded by HCI funds and/or IGTs put up by the municipal hospitals. The private hospital UPL payments have been funded by HCI funds or Indiana University IGTs, since private hospitals cannot by federal regulation put up their own nonfederal share of funding. Hospitals are required to sign agreements with OMPP to ensure that the state is not responsible for a payment to a provider unless IGT is available to fund the state share of the payment.

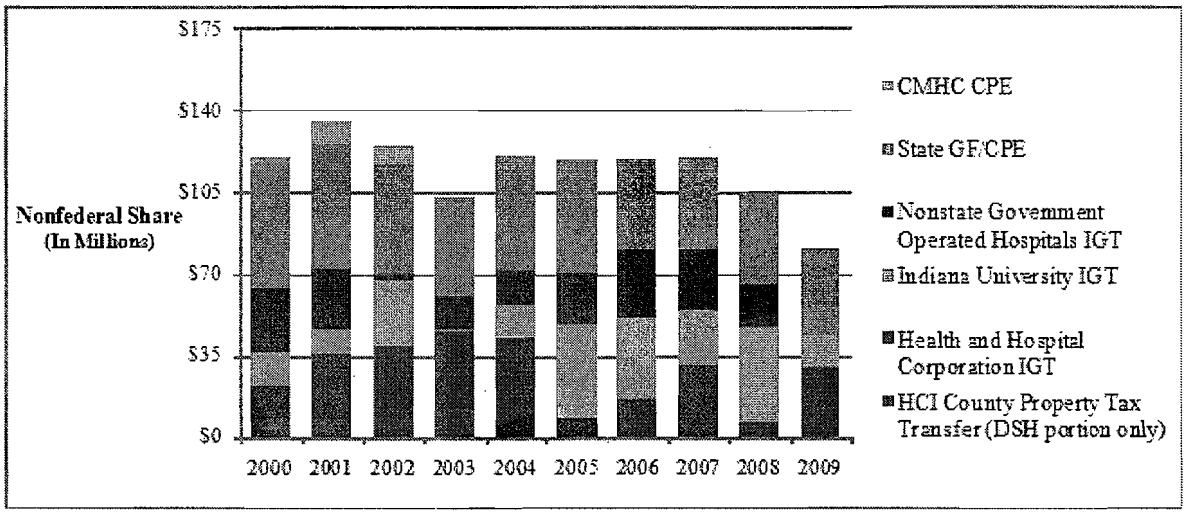
Exhibit 4. UPL Funding Sources, 2000-2009.



HCI property tax revenue was used as a funding source for UPL Pool #2 payments from 2004 through 2007, as shown in Exhibit 4, in addition to its use to fund Medicaid add-on payments to hospitals. The local HCI property tax levy was eliminated by HEA 1001 (2008), with the last scheduled levies being in May and November of 2008 for those billings that were timely. After 2007 until the elimination of the HCI property tax levy, these revenues were used for Safety Net UPL and UPL payments to private, DSH-eligible hospitals. The state HCI Fund continues to be used to receive state General Fund appropriations for use in the UPL and DSH programs, in addition to its use to fund Medicaid add-on payments to hospitals. And the IU IGT has funded a larger share of the total nonfederal source of the UPL for private hospitals over the last ten years.

DSH. The state General Fund contribution to the nonfederal share of DSH expenditures has occurred principally through the DSH payments to the IMD, with some replacement of HCI funding for UPL payments. The nonfederal share for IMD DSH is largely through appropriations to the state mental hospitals and the use of the General Fund for the nonfederal share of payments to nonstate psychiatric hospitals, both private hospitals and some of the CMHCs. NSGO IGTs were not used for DSH in 2009, and very little of the Wishard IGT was used for the UPL in 2009. (In 2009, the NSGOs received no DSH payments as Wishard was the only NSGO hospital receiving DSH. This change is reported to have been made for the benefit of the NSGO hospitals because the receipt of DSH payments would require participation in the newly required and reportedly onerous CMS DSH audit process.) The historical levels of DSH funding sources are depicted in Exhibit 5.

Exhibit 5. DSH Funding Sources, 2000-2009.



Funding Summary

The state General Fund appropriations for the HCI Fund for each of FY 2008 and FY 2009 were $56.9 M, which was increased to $61.5 M for each of FY 2010 and FY 2011. (Approximately $30 M of these appropriations for each fiscal year, corresponding to the amount of HCI funds historically provided to OMPP, are used in the regular Medicaid program rather than for UPL/DSH expenditures.)

HCI property taxes contributed around 10.9% of the nonfederal share before their elimination, while the state share of the nonfederal contribution has ranged from about 31% in the early years of the ten-year period to 34% in 2009, after the HCI elimination. State contributions through direct General Fund expenditures represented about 6% in 2000, but grew to nearly 17% by 2009, largely because of the elimination of the HCI property tax levies as a source of funds. However, indirect funding through appropriations to the state psychiatric hospitals used as IGT represented approximately 25% of the total nonfederal share of supplemental payments in 2000, but 17% in FY 2009.

Indiana University and Wishard, combined, provided about 33.2% of the total nonfederal contribution in 2000. This percentage grew to approximately 60% in 2009. Other NSGOs have contributed 18.3% in 2000, but that share had declined to about 12.5% by 2009.

The relative shares of each type of nonfederal funding are shown in the following table for FY 2000 through FY 2009.

Exhibit 6. Funding Summary, 2000; 2007-2009.

Nonfederal Share (%)	2000	...	2007	2008	2009
HCI Property Taxes	15.2%	...	10.9%	-	-
CMHC/County-funded CPE	1.3%	...	-	-	-
State Contribution - GF	6.3%	...	0.3%	10.9%	16.9%
State Contribution - Appropriations to State Agencies	25.4%	...	13.5%	13.8%	17.3%
Health & Hospital Corp. IGT/CPE - Own Behalf	12.9%	...	15.6%	7.8%	15.8%
Health & Hospital Corp. IGT/CPE - Other Hospitals' Behalf	3.6%	...	0.3%	-	-
Indiana University IGT	16.8%	...	42.5%	52.1%	37.4%
NSGO IGTs - On Own Behalf	8.6%	...	16.9%	15.4%	12.5%
NSGO IGTs - Other Hospitals' Behalf	9.9%	...	-	-	-
Total	100%	...	100%	100%	100%

Source: Office of Medicaid Policy and Planning.

The contributions by all sources (local, state, federal, and hospital funds) are summarized for the years 2000 through 2009 in Appendix C.

The Indiana State Medicaid Plan

The Indiana State Medicaid Plan represents, among other things, the road map for making supplemental payments from various sources of revenue. The State Plan is shaped by both federal and state statute. Federal statute details what a state plan must include. The state legislature provides parameters and the basic structure of the supplemental payment programs through statutory provisions.[9] Additionally, the state legislature may direct the OMPP, through statute or noncode laws, to submit amendments to the State Plan to CMS.

The federal government further shapes the State Plan through negotiations with the state agency in charge of administering the Plan. Also, CMS must review the document for consistency with the state statute and approve the State Plan and any amendments, as well as any waivers from federal requirements, for a state to implement its provisions.

In general, the State Plan reflects the state statute and conforms to federal laws. Several differences, however, between the state statute and the State Plan exist. One such situation concerns the LIUR calculation for DSH eligibility.

As discussed above, LIUR eligibility is determined by summing two fractions. If the sum is greater than the 25% standard, the hospital is a disproportionate share hospital according to state and federal law.

The first fraction concerning the revenues received from government sources, including Medicaid and other subsidies, over the total revenue received is the same in all the references.

[9]Statutory provisions for the UPL and DSH supplemental payments are generally found in IC 12-15-14.5 and IC 12-15-15 through IC 12-15-20.7. HCI-funded payment provisions are found in IC 12-16-7.5.

It is the numerator of the second fraction where the differences occur. Broadly, this equation compares charges for Medicaid patients with the hospital's total charges. The differences among the federal statute, State Plan and state statute are shown in the following table.

42 U.S.C. 1396r–4(b)(3)(B)	Indiana State Plan Attachment 4.19A(K)(2)(A)	IC 12-15-16-3(a)(2)(A) & (b)
Charges for inpatient services attributable to charity care,	Charges for inpatient services attributable to individuals who have no source of payment or third-party or personal resources,	Charges for inpatient services attributable to individuals who have no source of payment,
less contractual allowances and discounts,	less contractual allowances and discounts,	less contractual allowances and discounts.
less governmental cash subsidies reasonably attributable to inpatient hospital services.	less state and local government cash subsidies including HCI payments.	

Overall, the equation in state statute would compute a larger number than either of the other two calculations. A larger result could allow for more hospitals to qualify as LIUR disproportionate share providers. The State Plan definition appears to reduce the numerator the most, making it less likely for hospitals to qualify.

Further, as the state statute is amended, generally, state plans are amended to conform with changes in state statute. However, the 2007 passage of HEA 1678 is not currently reflected in its entirety in the State Plan. HEA 1678 established the Healthy Indiana Program and made several changes to the supplemental payment process. [Details of the changes to supplemental payments in HEA 1678 are described in Appendix A.]

The most significant methodological changes made by HEA 1678 involved moving HCI-funded Medicaid add-on payments from a reimbursement system based on the amount of services rendered to Medicaid patients and the amount of funds transferred to the state HCI fund by each county to a system where the payments are to be equal to the payments each hospital received in SFY 2007, effectively freezing the amount of HCI-funded add-on payments for SFY 2008 and years thereafter. These payments would have extended to all hospitals that received HCI-funded payments in 2007.

OMPP submitted State Plan amendments reflecting HEA 1678 statutory changes to CMS in June 2007.

Although CMS did not object to the fixed supplemental payment amounts, the existing statute at the time[10] along with additional changes in HEA 1678 made the supplemental payments "subject to the availability of funding for the nonfederal share of the payment." According to OMPP, CMS did not approve the State Plan amendment request because CMS no longer allows states to make payments contingent on the availability of funding, requiring instead either a set amount of payments that would be made regardless of the funding or that there be a fixed pool amount coupled with a distribution methodology.

At the time, HCI-funded add-on payments were funded by local HCI property tax collections, which naturally

[10] IC 12-15-15-9(e)

can vary over time.[11] OMPP contended that by establishing fixed payment levels, OMPP would be required to pay the new statutory amounts, regardless of whether enough HCI tax collections were available to fund the nonfederal share of payments.

According to OMPP, the state was unable to reach agreement with hospital providers for the providers to guarantee funding for any differences between the required nonfederal share and the HCI tax collections, and OMPP was unwilling to fund any potential shortfall, as well. As a result, OMPP has made the administrative decision to operate under the previously approved State Plan provisions.

Since the passage of HEA 1678, the later elimination of HCI levies resulted in the state General Fund replacing local property taxes as a funding source for supplemental payments. OMPP has not submitted a State Plan amendment to make payments in accordance with statute after the elimination of the levies.

In several ways, the previously approved State Plan provisions are consistent with changes made by HEA 1678. For example, HEA 1678 amended IC 12-15-15-1.5 to require that nonhistorical, DSH-eligible private hospitals are to receive payments in a manner that takes into account the situation of eligible hospitals that have historically qualified for DSH in a method that is equitable. The method established in the State Plan specifies a proration of DSH payments based on the number of consecutive periods a hospital qualifies for a DSH payment. A hospital that qualifies for the first time receives 1/3 of the proposed payment amount, for the second consecutive period receives 2/3 of the payment amount, and for the third consecutive period, a full share of the payment. This payment methodology is not specified directly by the state statute. However, OMPP is given wide discretion, both by state and federal statute, to adopt payment policies that will provide equitable payment to the hospitals. And since the State Plan is approved by CMS, it has federal endorsement.

However, in other ways, the State Medicaid Plan for UPL and DSH payments does not match the payment procedure described in statute. One of the minor differences is that UPL Pool #1 is defined in the previously approved State Plan as hospitals with at least 70,000 Medicaid inpatient days, a threshold currently met by only one hospital, Clarian. This threshold was lowered to 60,000 by HEA 1678, although the practical effect of the difference is currently minimal as Clarian is still the only hospital meeting this threshold.

IC 12-15-15-1.5 also defines historical DSH hospitals as those hospitals that were eligible for DSH payments in FY 1998 and *received* DSH payments in 2001, 2002, 2003, and 2004. This is a slightly narrower definition than what is provided in the State Plan, which requires eligibility for DSH in FY 1998, but only must be "*eligible* for a DSH payment in the year for which payments are being calculated."

The most significant impact of the decision to revert to the previously approved State Plan, however, involves the methodology for the distribution of payments to private, non-DSH hospitals. The previously approved State Plan provides that UPL payments for private, non-DSH hospitals are contingent on transfers to the Medicaid Indigent Care Trust Fund from HCI property tax levies. However, subsequent legislation, HEA 1001

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[11] On a statewide basis, the HCI property tax *levies* increased each year from 1999 through 2007. They declined in 2008 because LaPorte County data was not available for 2008. The average annual increase between 1999 and 2007 was 4.46%.

Statewide HCI property tax *collections*, on the other hand, were much more variable during this time period, probably reflecting property tax billing delays. Statewide collections averaged $55.4 M a year between 2000 and 2009, with a low of $42 M in 2004 and a high of nearly $74 M in 2006.

(2008), eliminated the HCI county property tax levies, resulting in the State Plan referencing a statutory provision that is now obsolete. The obsolete code section is IC 12-16-7.5-4.5(b), which applies to SFY 2006 and SFY 2007 and refers to the transfers of HCI tax collections to the HCI Fund as the funding source for payments. IC 12-16-7.5-4.5(c), on the other hand, is the statutory provision applicable to SFY 2008 and years after and references the transfers of funds to the HCI Fund, which could include state appropriations.

As a result, OMPP did not make supplemental payments to private, non-DSH hospitals in 2008 or 2009. State statute, specifically IC 12-15-15-9(d) for Medicaid add-on payments and IC 12-15-15-1.5(c) for UPL supplemental payments, directly provides for supplemental payments to all hospitals providing Medicaid services. As described previously in this paper, where 74 private, non-DSH hospitals received approximately $35.5 M in supplemental payments in 2007[12], none received a supplemental payment in 2008 or 2009. Although IC 12-15-15-1.5(c) as amended by HEA 1678 provides authority to implement alternative payment methodologies in the event that CMS does not approve the statutory procedure, the statute also requires any alternative methodology to be consistent with the methodology prescribed in statute.

Discussion - Healthy Indiana Program and Its Impact on Hospital Payments

The Healthy Indiana Plan (HIP) was enacted into state statute in 2007 (P.L. 218-2007). HIP provides insurance coverage to certain individuals, including childless adults, who might otherwise not have insurance or qualify for Medicaid. [See Appendix E for details of the HIP program.] In order to receive the federal share of Medicaid reimbursement in the HIP program and to provide cost neutrality for the coverage of childless adults, a group not normally covered by Medicaid, the state agreed to waive annual federal DSH distributions above a negotiated base level.[13] This can have several implications for the provision of supplemental payments to Indiana hospitals.

- Although the agreement results in a loss of a portion of the statewide DSH allotment available to safety net hospitals as supplemental payments, there is also a corresponding increase in revenue to hospitals from the provision of services to individuals insured through HIP.

- A temporary increase in federal reimbursement resulting from the enhanced FMAP associated with American Recovery and Reinvestment Act (ARRA) stimulus funding is available through expenditures in the HIP program, while DSH expenditures are not subject to the enhanced FMAP.

- HIP may provide some claims payments to hospitals that otherwise would not have received a supplemental payment because either the hospital was not DSH-eligible or because the discontinuation of HCI-funded Medicaid add-on payments reduced the number of hospitals receiving supplemental payments.

- Unlike UPL and DSH supplemental payments which are restricted to Indiana hospitals, HIP claims payments can be paid to hospitals based in other states.

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[12] Private, non-DSH hospitals received about $25.7 M in Medicaid add-on payments and $9.5 M in UPL payments in 2007.

[13] Healthy Indiana Plan, Centers for Medicare and Medicaid Services Special Terms and Conditions (as amended January 2010), 11-W-00237/5.

- Because the waiver agreement freezes the state DSH allotment, some of the future growth of the DSH allotment may be forgone by the state relative to the future growth of the HIP program, which could have an impact on the revenues to the state's safety net hospitals.

To elaborate on these implications, as a condition of receiving federal financial participation for Medicaid expenditures in the HIP program and to provide cost neutrality for the coverage of childless adults, the state agreed to waive annual federal DSH distributions above a base level of $151,183,400 (federal share) per year. This agreement results in a loss of a portion of the statewide DSH allotment that would otherwise be available to safety net hospitals as supplemental payments. However, the HIP program also provides an opportunity for an increase in revenue to hospitals from the provision of medical services to individuals insured through HIP, and these expenditures would be matched by the federal government.

There is no one-to-one linkage of the waived DSH allotment dollars to the expenditures which can be made through the HIP program. Consequently, any future growth of the forgone DSH allotment above the agreed-to base level relative to the future growth of the HIP program could have an impact on the state's acute care hospital revenues. The actual and preliminary estimates of the state's DSH allocation for FFY 2008 through FFY 2010 are presented in Exhibit 7. For the outlying years through the end of the HIP waiver demonstration in FFY 2013, the terms of the agreement are presented.

Exhibit 7. Federal Share of DSH Allotment Growth, FFY 2008 - FFY 2013

	ARRA DSH Increase	Total DSH Allotment	DSH Base Level Expenditures	Forgone DSH Allotment
FFY 2008	-	$201,335,400	$163,726,400	$37,614,000
FFY 2009[A]	$5,254,854	$210,194,158	$151,183,400	$59,010,758
FFY 2010[B]	$10,641,079	$210,194,158	$151,183,400	$59,010,758
FFY 2011 FFY 2012	The DSH program is limited to the base expenditure level plus any additional FFY 2011 and FFY 2012 DSH allotment that may become available.			
FFY 2013	The DSH allotment is prorated to coincide with the HIP demonstration approval period which terminates December 31, 2012.			

Sources: Healthy Indiana Plan, Centers for Medicare and Medicaid Services Special Terms and Conditions (as amended January 2010), 11-W-00237/5.

[A] For FFY 2009 allotment and HIP allocation - *Federal Register*, Vol. 75, No. 78, Friday, April 23, 2010, p.21325.
[B] For FFY 2010 allotment and HIP allocation - *Federal Register*, Vol. 75, No. 78, Friday, April 23, 2010, p.21326.

The distribution of the funds available for HIP is determined by the individuals who subscribe to HIP and their choice of provider. The hospitals receiving those funds may vary from those that would have received a supplemental payment.

Are HIP Payments Reaching Indiana's Safety Net Hospitals?

A review of claims paid to hospitals through the HIP program shows that in SFY 2009 approximately $99 M total, state and federal, was paid[14]. (This includes both the individual's POWER Account payment and the insurance share.) This compares to forgone DSH expenditures estimated at $92 M[15].

The average federal financial participation on $99 M of expenditures is approximately 73.75%, or about $73 M in federal dollars coming to Indiana. This compares to the forgone DSH allotment of approximately $59 M in federal dollars for FFY 2009.[16]

Medicaid expenditures through the HIP program are enhanced through the American Recovery and Reinvestment Act, while DSH expenditures are not. The average ARRA-enhanced FMAP available for HIP expenditures for FFY 2009 was about 73.75%. This compares to a nonenhanced FMAP available for DSH expenditures of about 64.26%.

In SFY 2009, 74 hospitals received a UPL or DSH supplemental payment, and in FY 2009, 283 hospitals or hospital units received claims payments from HIP. However, a small portion of the HIP payments went to out-of-state hospitals. An estimated 98.7% of the FY 2009 HIP payments, or $97.7 M, went to Indiana hospitals, while about $1.3 M went to hospitals in 21 other states, largely those bordering Indiana.

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[14]FSSA request number 7627, HIP Hospital Expenditures, run date: 5/24/2010.

[15] This estimate is based on the $59 M in forgone federal DSH allotment under the waiver agreement matched at a 64.26% federal matching rate.

[16]Since the HIP program was begun January 1, 2008, HIP claims expenditures were only $6.1 M for the six months of SFY 2008. Total HIP expenditures were $99 M for SFY 2009 and $76 M through April 2010 (ten months of SFY 2010).

Exhibit 8. SFY 2009 HIP Claims Payments and Number of Claims by State.

State of Hospital	Total Payments	% of Payments	Number of Claims	% of Claims
Indiana	**$97,727,490**	**98.7%**	**167,421**	**99.6%**
Arizona	1,052	0.0%	6	0.0%
Colorado	405	0.0%	2	0.0%
Florida	17,898	0.0%	7	0.0%
Georgia	45,434	0.0%	2	0.0%
Iowa	1,171	0.0%	4	0.0%
Illinois	**108,750**	**0.1%**	**104**	**0.1%**
Kansas	265	0.0%	2	0.0%
Kentucky	**906,987**	**0.9%**	**360**	**0.2%**
Louisiana	634	0.0%	2	0.0%
Massachusetts	504	0.0%	3	0.0%
Michigan	**32,513**	**0.0%**	**43**	**0.0%**
Minnesota	6,030	0.0%	6	0.0%
Missouri	1,507	0.0%	6	0.0%
Nebraska	646	0.0%	1	0.0%
New Jersey	813	0.0%	2	0.0%
Ohio	**151,297**	**0.2%**	**90**	**0.1%**
South Carolina	566	0.0%	2	0.0%
South Dakota	2,911	0.0%	8	0.0%
Tennessee	22,893	0.0%	22	0.0%
Texas	1,241	0.0%	5	0.0%
Wisconsin	18,152	0.0%	14	0.0%
Total	**$99,049,157**	**100.0%**	**168,112**	**100.0%**

Bolding and shading denotes state is contiguous to Indiana.

Data Source: FSSA.

Regarding Indiana hospitals only, HIP claims payments were made to 144 hospitals based on identified Medicaid provider numbers.[17] More than half of the hospitals (78 or 54.2%) that received a HIP claims payment in SFY 2009 did not receive a Medicaid supplemental payment in SFY 2009. The value of the claims payments to these 78 hospitals was $50.4 M.

[Details of the HIP claims payments by Medicaid provider number are found in Appendix F.]

There were 66 facilities that received a Medicaid supplemental payment in SFY 2009 and HIP claims payments in SFY 2009. Of the 66 facilities, only one had received more from HIP claims payments than from the Medicaid supplemental payments. The total value of the claims payments to hospitals that also received

[17]The claims data identified payments by national provider identifier (NPI), rather than the Medicaid provider number used to identify DSH and UPL payments. The NPI number is a unique identifier and a hospital unit, such as a rehabilitation unit or psychiatric unit, may be identified separately from the overall hospital. To review the claims payments, the hospital units were consolidated under the Medicaid provider number for the hospital.

a supplemental payment was $47.3 M.

The relative future growth rates of the DSH allotments and HIP program expenditures will affect compensation to Indiana's safety net hospitals for indigent care, although the extent of the impact is not known. Future HIP expenditures may be somewhat curtailed by administrative decisions on future enrollment. But the DSH allotments forgone appear to be limited for FFY 2011 and FFY 2012 according to the waiver agreement, which provides that the DSH program expenditures are to be limited to the base expenditure level of $151 M plus any additional FFY 2011 and FFY 2012 DSH allotment that may become available.

Characteristics of Indiana Safety Net Hospitals

The Medicaid supplemental payment programs are designed to provide additional funding to hospitals that form a safety net for Indiana residents. The guidelines and requirements in statute and rules determine which hospitals that provide services to low-income residents will receive additional reimbursement. But these funding mechanisms do not provide information about the characteristics of the safety net. For that, we turned to a 1997 analysis of safety net hospitals prepared using national hospital statistical information from the American Hospital Association.

In the report, "What Types of Hospitals Form the Safety Net" by Linda Fishman,[18] acute care and short-term-stay hospitals from all 50 states were ranked by their ratio of uncompensated care costs to total operating expenses, where uncompensated charges included charity care charges and bad debt. The top 10% of hospitals in the ranking (the highest decile) were then compared with the remaining 90% on several characteristics, including total margin, location, ownership, payer mix, and physician education.

About The Study

The analysis in this paper closely followed the Fishman study, including reproducing the tables of the report for Indiana data. One measure, total margin, was changed in this study to reflect the data available for Indiana, and other exhibits were prepared to provide additional information about Indiana's safety net. One major difference between this report and the Fishman study is that graduate medical education was not reviewed for Indiana.

Methodology

Information used in this analysis came from 2008 reports posted on the Indiana State Department of Health (ISDH) website, including audited financial statements, Medicare cost reports, and hospital fiscal reports. Financial information was primarily drawn from audited financial statements, but the hospital fiscal reports were used when other reports were unavailable. Individual hospital information for hospitals in networks was mostly taken from the hospital fiscal reports.

When a 2008 report was unavailable, the 2007, or in a couple of cases, the 2009 report, was used. In some cases, hospitals or hospital networks were contacted by phone for charity care information.

The hospital fiscal reports are not required to be submitted by hospitals, and mathematical errors were found within the reports. It should be noted that numbers reported among the three sources rarely matched. It is unclear whether the differences resulted from report time periods or differences in definition of items reported.

Generally accepted accounting principles require hospitals to identify charity care charges in the notes to the financial statement. The reported amount is based on the charity care policy of the hospital, which varies from hospital to hospital. While the reporting is uniform, the amount reported reflects hospital policy, which may

[18]Fishman, Linda E., "What Types of Hospitals Form the Safety Net? , Health Affairs, July/August 1997, pp. 215-222.

not be similar.[19] LSA used total charges or Medicaid patient days to allocate charity care charges among hospitals in three separate networks since this information is not provided in the audited financial statements on a hospital-specific basis. Additionally, in cases where the Medicare cost report was not available, LSA used a different year or the average of total charges and total costs of other similarly sized hospitals or other hospitals within a network.

Myers and Stauffer provided some information for 2009 upon the request of LSA. Primarily, patient-day information was used from the Myers and Stauffer data.

ISDH was requested to provide a list of all Indiana licensed hospitals. From the list, only acute care and critical access hospitals were selected, following the methodology of the 1997 analysis which reviewed acute and short-term-stay facilities. Based on this listing, there were 122 hospitals operating in 2008. However, complete data were available or able to be estimated for only 115 hospitals.

Charity care charges, reported in the notes to the audited financial statements, were reduced by the cost-to-charge ratio using the total costs and total charges from Worksheet C, Part I, of the Medicare cost report.[20] This adjusted charity care cost was added to the bad debt expense available in the audited financial report. The sum of the adjusted charity care cost and the bad debt is considered the uncompensated care costs. The uncompensated care costs were then divided by the total operating expense to indicate the relative size of uncompensated costs within the total costs of the hospital.

The hospitals were then ranked by this ratio, and the 12 hospitals (10%) with the largest percentage of uncompensated care costs to total operating costs were separated for comparison with the remaining hospitals. The hospitals were compared on total margin, urban/rural location, ownership, and patient/payer mix.

Patient mix was provided by Myers and Stauffer based on information contained in the Medicare cost reports. For the payer mix, the amount provided in the discussion of net patient service revenues in the audited financial statement was used. Some hospitals, particularly state hospitals, do not include this information, so the breakdown of accounts receivable was substituted. This will shift the focus somewhat from the actual payer mix to the payment policy of the payer. Also used was the gross patient revenue sources from the hospital cost reports when the audited financial statement was unavailable or for consolidation of hospital networks.

The Results

Financial

Hospitals with the highest amount of uncompensated care costs relative to operating expenses (the highest decile) have more than double the burden of uncompensated care when compared with the hospitals in the

[19]Efforts are underway at the Financial Accounting Standards Board (the agency that promulgates generally accepted accounting principles) to provide guidance so that charity care costs, rather than charges, will be reported. This would, in effect, make reporting more uniform across hospitals.

[20]Several hospitals reported charitable costs rather than charges. Every effort was made to identify these hospitals and not reduce the charity costs by the cost-charge ratio.

other deciles. The Indiana hospital results are very similar to the results from the Fishman report, which showed that the highest decile provided double the uncompensated care of all other deciles. Also similar to the Fishman study, although not as strongly demonstrated, Indiana hospitals in the highest decile were more reliant on patient revenue than were the hospitals in the other deciles.

In the study of Indiana hospitals, operating margin was used rather than the total margin that was used in the Fishman report. Operating margin and total margin are both measures of profitability. Operating margin provides information on the stability and efficiency of operations, while total margin can provide information on the viability of the firm as a whole (including investments by the firm). Operating margin was used in this analysis to measure profitability of hospital operations only. The hospitals in the highest decile that provide more uncompensated care overall had a negative operating margin on average, while those in the lower deciles had, for the most part, positive operating margin on average.

Exhibit 9. Financial Statistics of Indiana Hospitals.

Decile	Average percent of total operating expenses that is uncompensated care	Average percent of total operating revenue that is net patient services revenue	Average operating margin	Percentage with negative operating margin
1	22%	97%	-3%	25%
2-10	9%	96%	5%	19%
Detail of Other Deciles				
2	17%	98%	6%	18%
3	14%	98%	9%	9%
4	12%	97%	3%	25%
5	10%	96%	5%	8%
6	9%	94%	5%	17%
7	8%	90%	1%	36%
8	7%	99%	7%	18%
9	6%	96%	-2%	27%
10	2%	94%	8%	17%

In the Fishman study, hospitals in all deciles on average had positive total margins. Both the Fishman study and the Indiana study show variations in the other deciles for operating margin and the percentage with negative margin. In the Indiana study, some of the differences may result from variations in the sources of data used, but may also reflect the diversity of hospitals that make up each decile.

Ownership

Overall, about a third of the hospitals reviewed are owned by local units of government, another third are owned by private nonprofits, and the other third are divided among proprietary and other nonprofit types. Hospitals with the highest amount of uncompensated costs relative to operating expenses tend to be local government-owned (42%) or private nonprofit-owned (33%). Hospitals with the least amount of uncompensated costs tend to be proprietary (58%).

Exhibit 10. Ownership of Indiana Hospitals.

Ownership Type	Decile... 1	2	3	4	5	6	7	8	9	10	All
Local Government	42%	55%	45%	25%	50%	17%	18%	36%	9%	8%	30%
Proprietary	8%	0%	18%	8%	8%	0%	9%	18%	27%	58%	16%
Nonprofit: Church	17%	18%	0%	17%	0%	0%	27%	18%	55%	17%	17%
Nonprofit: Private	33%	18%	18%	33%	25%	75%	45%	18%	9%	17%	30%
Nonprofit: Other	0%	9%	18%	17%	17%	8%	0%	9%	0%	0%	8%

Data Source: ISDH
Note: Percentages may not total due to rounding.

Number of Beds, Hospital Type, and Location

Hospitals in the higher deciles tend to have on average fewer beds than the state average. In part, this is because there are more critical access hospitals in the two highest deciles. About 30% of the hospitals in this analysis are critical access hospitals, but 50.0% of the first decile and 81.8% of the second decile are critical access hospitals.

Exhibit 11. Number of Beds, Hospital Type, and Location of Indiana Hospitals.

	Set Up or Staffed Beds			Hospital Type		Location	
Decile	Average Number of Beds	Minimum	Maximum	Critical Access	Acute Care	Rural	Urban
1	129.8	15	424	50.0%	50.0%	50.0%	50.0%
2	74.8	16	536	81.8%	18.2%	54.5%	45.5%
3	108.1	25	379	27.3%	72.7%	45.5%	54.5%
4	115.3	25	254	25.0%	75.0%	58.3%	41.7%
5	158.3	25	612	25.0%	75.0%	33.3%	66.7%
6	142.8	25	345	25.0%	75.0%	25.0%	75.0%
7	119.6	25	434	27.3%	72.7%	9.0%	91.0%
8	227.9	25	1,312	18.2%	81.8%	45.5%	54.5%
9	238.1	24	795	9.1%	90.9%	18.2%	81.8%
10	152.1	12	425	8.3%	91.7%	0.0%	100.0%
All	**146.4**	**12**	**1,312**	**30.0%**	**70.0%**	**33.9%**	**66.1%**

Data Source: ISDH and http://www.census.gov/population/www/metroareas/lists/2008/List1.txt

Critical access hospitals are designated under the Medicare Rural Hospital Flexibility Grant Program and generally are located in medically underserved or professional shortage areas. A critical access hospital has 25 beds or less, a maximum length of stay of 96 hours, and operates 24-hour emergency services.

Since critical access hospitals tend to be in rural areas, the hospitals in the higher deciles tend to be located in a rural area. Each hospital's location was reviewed by LSA to determine if it was located in a Metropolitan Statistical Area (MSA). Those located in an MSA were labeled urban, and those outside an MSA were labeled rural. These results dovetail well with the findings of the Fishman report, which states, "Small rural hospitals are important in the fabric of the safety net."

Exhibit 12. Location and Bed Size.

Location	Percent in Highest Decile	Percent in All Other Deciles
MSA	50.0%	68.0%
Rural (fewer than 50 beds)	41.7%	17.5%
Rural (50-99 beds)	8.3%	9.7%
Rural (more than 99 beds)	0.0%	4.9%

Source of Payments

Exhibit 12, above, indicates that the hospitals in the highest decile are more reliant on patient revenue, prompting the question of who pays for patient services. A review of payer mix was undertaken by looking at both the average percentage patient days by payer and the percentage of revenue by source.

The hospitals in the highest decile had a higher percentage of Medicare and Medicaid patient days than the hospitals in the other deciles. This corresponds to a lower percentage of other payer days for the highest decile. Payments for Medicaid patients, on the other hand, were the same percentage for both the highest decile and the other deciles. However, when other government and other state payments are considered, the hospitals with the highest percentage of uncompensated care receive more government payments for patient services. The receipt of payments from nongovernmental sources is clearly lower for the highest decile when compared to the other deciles.

Exhibit 13. Payer Mix by Patient Days and Patient Receipts.

	Highest Decile	All Other Deciles
Payer by Patient Days		
Medicare Days	53.3%	52.2%
Medicaid Days	12.1%	8.8%
Other Payer Days	34.6%	39.1%
Payer by % of Gross or Net Patient Receipts		
Medicare Payments	12.8%	9.8%
Medicaid Payments	34.0%	34.0%
Other Government and Other State Payments	5.3%	3.8%
Other Patient and Insurance Payments	48.0%	51.6%

Data Source: Myers and Stauffer; ISDH website
Note: All Other Deciles patient receipts percentages do not total 100% due to lack of data for one hospital.

Medicaid Supplemental Payments

The acute care and short-term-stay hospitals received about 85% of the supplemental payments made to all Indiana hospitals in 2007, 2008, and 2009. The hospitals in the highest decile of hospitals providing uncompensated care and those in the 8th decile received the highest percentage of the payments made to these safety net hospitals. The first decile contains Wishard Hospital, and the 8th decile contains Clarian Health Partners (dba IU, Riley, and Methodist), and the results in this analysis show the differences between the supplemental payment funding policy and the methodology of ranking hospitals based on one

definition of uncompensated care. This model actually permits some business management practices to influence the ranking to the extent that bad debt management can influence the level of bad debt expense.

The change in funding with the takeover of the HCI property tax levy by the state can be seen in the percentage of hospitals receiving a supplemental payment. In 2007, in almost every decile, 100% of the hospitals received some supplemental payment. In 2008 and 2009, the number of hospitals receiving payments is about halved at 47%. The percentage of hospitals receiving payments in 2008 and 2009 is much lower for hospitals that in this study rank lower in the amount of uncompensated care provided.

Exhibit 14. Supplemental Payments by Uncompensated Care Decile.

Decile	Percent Receiving Supplemental Payments 2007	Percent of 2007 Payments	Percent Receiving Supplemental Payments 2008-2009	Percent of 2008 Payments	Percent of 2009 Payments
1	100%	26%	58%	22%	29%
2	100%	8%	82%	9%	9%
3	100%	4%	55%	3%	3%
4	100%	3%	42%	2%	2%
5	100%	7%	67%	6%	7%
6	100%	7%	42%	6%	8%
7	82%	2%	27%	1%	1%
8	100%	35%	45%	42%	32%
9	91%	6%	27%	4%	5%
10	83%	4%	25%	3%	3%
All	96%	84%	47%	86%	85%

Data Source: OMPP.

Summary - Analysis of Indiana Safety Net Hospitals

The results of the Indiana study are similar to many of the findings in the 1997 Fishman study on hospitals nationwide. The top 10% of hospitals providing uncompensated care provide about double the amount of uncompensated care as other hospitals. This is reflected in the payer mix, both by patient days and patient receipts. It is interesting to note that another study, using the same technique as Fishman to find the safety net hospitals, finds that there is some shift of uncompensated care from government and nonprofit hospitals to proprietary hospitals when managed care enters the hospital market.[21] The article suggests that while no single proprietary hospital increases significantly in the amount of uncompensated care provided, as a group, the hospitals contribute more uncompensated care.

The shift in uncompensated care to other hospital ownership types may be reflected in the payer mix by patient receipts, where hospitals that provide less uncompensated care receive about the same percentage

[21]Bazzoli, Gloria J., Lindrooth, Richard C., Kang, Ray, and Hasnain-Wynia, Romana, "The Influence of Health Policy and Market Factors on the Hospital Safety Net," Health Services Research, 41:4, Part I, August 2006, pp. 1159-1180.

of total patient receipts from Medicaid payments. On the other hand, this may reflect that some of the hospitals that provide less uncompensated care may not be financially performing as well as other hospitals in the Indiana study as seen in the data which show hospitals among the lower deciles of uncompensated care having negative operating margins.

For some hospitals in the study, financial management issues may affect the results. For example, during the study, it was found that Washington County Hospital, a government-owned hospital, was purchased by a proprietary owner. The financial data for Washington County Hospital was found to be lacking by audit agencies reviewing the data. The data were used in the study, nonetheless, with the understanding that this was the best representation of the hospital's performance. As another example, if a hospital has a substantial amount of uncollectable receivables, bad debt expense could be driven up if there is a cleanup of the accounts receiveable. In that case, a hospital would rise in the rankings in this study and might outpace another hospital that actually has usually high amount of write-offs that are uncompensated care. The opposite is true for a hospital that better manages its accounts.

Although urban hospitals serve more people, this study shows that rural hospitals are important in the safety net as well. Critical access hospitals, especially, show up as an important component of Indiana's safety net. The smaller size of these critical access hospitals has influence on the highest decile in the study. It is clear that some of the hospitals in the highest decile in the study are not the same hospitals that receive the majority of Medicaid supplemental payments. The supplemental payments are based on factors that are somewhat different than the factors that ranked hospitals in this report.

Conclusion

The funding sources and payment policies of Indiana's three Medicaid supplemental payment programs were reviewed as requested in 2009 legislation. The review found that several legislative changes to the state statute concerning supplemental payments have not been reflected in the Indiana State Medicaid Plan. The state reverted to making supplemental payments based on the methodology in a prior version of the State Plan. The subsequent elimination of a funding source referenced in that prior methodology led to payments to private, non-DSH-eligible hospitals not being made in 2008 and 2009.

The Healthy Indiana Plan, which is not a supplemental payment program but rather provides insurance to individuals, appears to provide funding to some of the hospitals that had not received supplemental payments in 2008 and 2009. However, the HIP program makes insurance payments for patient services based on the provision of Medicaid services, rather than supplemental payments to hospitals. In addition, a small percentage of the HIP payments are going to hospitals outside of, but in states contiguous to, Indiana.

A review of safety net hospitals based on the provision of uncompensated care finds that in Indiana, safety net hospitals tend to be smaller and include rural hospitals.

Appendix A

Legislative History of Medicaid Supplemental Programs in Indiana

Hospital Care for the Indigent

Funding Legislation

- When administration responsibilities were transferred to the state, the state statute was amended to indicate that each county should levy an amount equal to the average of hospital care for the indigent costs between 1984 and 1986. Going forward, the levy was equal to either the prior-year levy, the prior-year levy adjusted by the statewide average growth quotient for assessed property value, or by the average growth quotient for county assessed property value, whichever was greater.

- In CY 2005, a levy reduction was scheduled in conjunction with a program that was never implemented. As a result, the law was changed to maintain the levy levels in CY 2004 through CY 2006. And then, in CY 2007, the levy was to be increased by the three-year assessed value growth quotient for each county.

- An increase in the state Sales Tax provided for several levy takeovers by the state in 2009, including the HCI levy.

Payment Legislation

- 1987: HCI was a claims-based program.

- 1995: Individual hospital claims were eliminated, converting to Medicaid hospital add-on payments based on prior years' claims payment history. About half of the HCI funds were allocated for use as a per diem rate addition to a hospital's base inpatient payment rate. The add-on payment was divided among hospitals on a pro rata basis using Medicaid inpatient days. The formula was expected to keep hospital payments relatively unchanged from prior years while distributing half of the payments through the HCI program and the other half through a hospital per diem add-on.

- 2001: The Uninsured Parent's Program (UPP) was established using funds freed by the elimination of the HCI program. The following year, the HCI program was reinstated, and implementation of the UPP was delayed until June 2004. The UPP program was repealed in 2003.

- 2003: The claims for the HCI program were required to be processed with other Medicaid claims. Payments for physicians and transportation providers were limited to $3M and distributed among service providers within a county based on the county's contribution to the state fund.

  The distribution method was limited by the transfers to the Medicaid Indigent Care Trust

Fund from the county taxes and less the $3M allocated for physician and transportation providers.

- 2007: Hospital payments were frozen at FY 2007 levels, and hospitals were allowed to discontinue submitting claims to OMPP for processing with other Medicaid claims. [Claims processing by OMPP affected county property tax levy calculation, not the hospital add-on payments.] Additionally, HCI funds in excess of the $3M used for direct physician and transportation provider payments would transfer to the MICTF to make UPL payments to private hospitals.

- 2009: Due to the elimination of the HCI property tax levy, the HCI program was defunct as a separate program, and the source of the state match for other Medicaid supplemental payments was replaced by state General Fund dollars.

Upper Payment Limit

Federal History, Legislation, and Rules

UPL payments came into use in the mid-1990s to increase federal funding in response to tightening of DSH program payments. UPL payments directed funds to a hospital to bring payments in line with Medicare rates. Before rules were put into place to limit the practice, some states would aggregate the UPL across all hospital types, and pay the amount only to state- or county-owned hospitals. In some cases, the state would require locals to return all but a portion of the UPL payment, and then the state would use the money for other state purposes. A state could reduce the general fund support for its state hospitals with additional federal matching funds and with little additional state expenditure when a portion of the payment was returned to the state.

Federal rules have been enacted that allow the aggregation of UPL by hospital ownership and type of service (i.e., inpatient and outpatient), limiting the amount of UPL in each category. UPL payments count against the hospital-specific limit for DSH payments. A hospital may receive UPL payments in excess of its hospital-specific limit, but it will not receive a DSH payment. There have been attempts at the federal level to limit UPL payments at the hospital's cost of Medicaid services, but so far no such limit has been enacted.

Indiana History and Legislation

The Medicaid Shortfall Program was established for governmentally owned hospitals in 1998 legislation. The state's share of the program was financed through intergovernmental transfers to the MICTF from participating hospitals.

In 2003 legislation, a UPL program was established for private hospitals. In the same legislation,Wishard received reimbursement of its "Medicaid Shortfall before other county or municipal hospitals.

Wishard and county and municipal hospitals were allowed to certify hospitals' expenditures as eligible for federal financial participation in addition to making monetary intergovernmental transfers in legislation passed in 2007.

Disproportionate Share Hospital Payment Program

Federal History, Legislation, and Rules

The Social Security Act requires state Medicaid plans to develop provider payment rates that, for hospitals, "take into account (in a manner consistent with Section 1923) the situation of hospitals which serve a disproportionate number of low-income patients with special needs."[22] States were required to establish a DSH program in 1981.

There is no single definition of a safety net hospital. Originally, the determination was left to the states, but as of 1987, there are two tests in federal rules to determine if a hospital is eligible for DSH additional payments: (A) Medicaid Inpatient Utilization Rate, and (B) Low-Income Utilization Rate.

Throughout the 1980s and 1990s, some states used DSH to draw down more federal dollars without spending additional state funds. This was done using donations, provider-specific taxes, and IGTs.

During the 1980s, few regulations at the federal level existed to limit DSH payments by the states. Quite to the contrary, the federal government was encouraging states to utilize the program by allowing states to use donations and provider-specific taxes to meet federal match.

Federal limitations on DSH began in 1987, when criteria were established to determine the eligibility of hospitals for DSH funds. In the 1990s, as the federal Medicaid budget mushroomed, DSH underwent several changes to discourage some of the financing schemes that the states had undertaken.

- 1991: The Medicaid Voluntary Contribution and Provider-Specific Tax Amendments banned provider donations and restricted taxes to broadly defined provider groups.
- 1993: The Omnibus Budget Reconciliation Act set hospital-specific limits on the amount of DSH each hospital could receive.
- 1997: The Balanced Budget Act limited the share of DSH that could be paid to state and private psychiatric hospitals and reduced total state DSH allocations for fiscal years 1998 through 2000.

Today, IGTs can still be used because rules that would have put a check on the IGTs were rescinded. Indiana relies on IGTs to supply most of the nonfederal match for the DSH program, while using the state General Fund for other Medicaid supplemental payments.

Indiana History and Legislation

The DSH program in Indiana and the Medicaid Indigent Care Trust Fund were enacted into law in 1991. However, implementation was not allowed unless the federal administrative agency approved an amendment to the State Medicaid Plan and there were adequate funds in the MICTF. The original DSH program had the following features:

A two-tier system, basic and enhanced DSH, was put into place with all qualifying hospitals receiving a

[22]Social Security Act, Title XIX, Sec. 1902(a)(13)(A)(iv).

payment adjustment, and hospitals with more than 25% low-income utilization receiving an additional significant disproportionate share payment.

Disproportionate share providers were assessed a fee for deposit in the MICTF. Hospitals that qualified for an enhanced benefit were assessed 10% of the hospital's annual gross patient revenues, and hospitals that qualified for the basic payment were assessed 3%.

Calculations to determine if a hospital qualified for a disproportionate share payment were based in part on the number of Medicaid and HCI inpatient days.

Since the program was established, the following legislative changes have been made.

- 1992: The assessment system was changed to conform to changes in federal law. The cities of Gary and East Chicago were allowed to impose a City Option Hospital Income Tax for transfer to the MICTF. Additional revenues for the MICTF would come from an allotment from Indiana University, appropriations from the Department of Mental Health, and revenues from Marion County.

  The distribution of funds also changed with payments going to Clarian Health Partners, Wishard, Gary Methodist, St. Catherine, and St. Mary. From the combined federal and state matching funds, the state received the remaining funds of about $34M to use for other Medicaid purposes.

- 1993: The Basic DSH program was divided into six pools of funding for six categories of hospital. The funding for the MICTF was increased, with Indiana University, Marion County, Gary, and East Chicago increasing their payments.

- 1995: Hospital-specific limits were enacted. Also, the City Option Hospital Income Tax for Gary and East Chicago was repealed in 1995. However, the amount available for the MICTF actually increased through larger intergovernmental transfers by Indiana University and Marion County. Adjustments were made to the pools distributed to hospitals, reducing the amount distributed to inpatient psychiatric hospitals to a total of $2 M.

- 1998: DSH programs for municipal hospitals and community mental health centers were created. The municipal hospitals would make intergovernmental transfers to the MITCF, while the county treasurer would certify public payments from county property tax levies for CMHCs.

- 2000: Elimination of the distinctions between the Basic and Enhanced DSH programs occurred. The OMPP was given broad discretion to develop DSH payment methodology.

- 2007: OMPP was given authority to determine a method to equitably distribute DSH if funds were insufficient to fund full shares.

Below, the major provisions of HEA 1678 and their effect on the UPL and DSH programs are detailed.

Major Provisions of HEA 1678 Affecting Supplemental Payments.		
Code Cite	***HEA 1678 Changes***	***Affects***
IC 12-15-15-1.1, -1.3	Removes the requirement to distribute payments in proportion to each hospital's upper payment limit and changes to distribute in an amount not to exceed the hospital's shortfall.	Muni UPL
	Adds the ability for municipal hospitals and NSGOs to use CPEs in addition to IGTs.	
IC 12-15-15-1.5	Lowers the minimum number of Medicaid inpatient days from 70,000 to 60,000 to qualify for UPL Pool #1.	Private UPL
	Defines a hospital's Medicaid inpatient days as being in-state and paid Medicaid fee-for-service and managed care days.	
	Defines Medicaid supplemental payments to be Medicaid payments in addition to fee-for-service, risk-based managed care, and DSH payments, and includes safety-net payments and municipal UPL, private UPL, and HCI-funded add-on payments.	
	For SFY 2008 and after, defines the payment methodology for private hospitals.	
	Provides that subject to the availability of county HCI funds transferred to the MICTF to serve as the nonfederal share, supplemental payments shall be paid to all private hospitals providing services to Medicaid patients. The payments are to be pro rata based on Medicaid inpatient days. *	
	Defines historical DSH hospitals (UPL Pool #3) as those eligible for DSH payments in FY 1998 and received DSH payments in 2001, 2002, 2003, and 2004. Provides that payments are subject to the availability of nonfederal share being provided by or on behalf of the hospital.	
	Specifically provides that for FY 2008 and FY 2009, Gary Methodist Hospital is to receive 100% of the hospital's hospital-specific limit for FY 2005. The remaining historical hospitals are to receive 100% of their hospital-specific limit for FY 2004. For years after FY 2009, payments to the historical hospitals are to be in a manner determined by OMPP.	
	Provides that the remaining amount of funds is to be distributed to nonhistorical, DSH-eligible private hospitals in a manner that best uses federal matching funds. Also specifies that nonhistorical, DSH-eligible private hospitals are to receive payments in a manner that takes into account the situation of eligible hospitals that have historically qualified for DSH and ensures that payments are equitable.	Private UPL
	Provides authority to implement alternative payment methodologies consistent with the methodology provided in this bill in the event that CMS does not approve the methodology provided in this bill. (Also, repealed IC 12-15-15-9.8, which provided a similar, but narrower, authority regarding HCI-funded payments.)	
IC 12-15-15-9, -9.5	Changes HCI-funded Medicaid "add-on payment methodology based on aggregate claims to Medicaid "supplemental payments based on FY 2007 payments. Existing statute makes the payments subject to the availability of funding for the nonfederal share.	All Hospitals Serving Medicaid
IC 12-15-15-10	Removes the authorization to expand the NSGO UPL payment program to include DSH-eligible private hospitals, state mental hospitals, and nonstate psychiatric hospitals.	All DSH Hospitals

Code Cite	*HEA 1678 Changes*	*Affects*
IC 12-15-19-2.1	Removes the requirement for the state to provide from state funds an amount sufficient to generate a minimum total payment of $26 M to acute care hospitals eligible for DSH under LIUR or MIUR criteria.	Certain DSH Hospitals
IC 12-15-19-6	In the event of insufficient IGTs, CPEs, or other deposits into the MICTF or a statewide DSH allocation insufficient to meet all hospital-specific limits, the payment reduction methodology is changed from "reducing payments to all eligible institutions by the same percentage to "reducing payments using an equitable methodology that best uses federal matching funds, takes into account the situation of hospitals that have historically qualified for DSH, and ensures equitable payments.	All DSH Hospitals
IC 12-15-20-2	Specifies the order of payments from the MICTF for FY 2006 and FY 2007. Also specifies the order of payments for FY 2008 and years after as: $30 M to OMPP; HCI add-on payments; municipal UPL; municipal DSH; Private UPL; Safety net UPL; Historical DSH hospitals; and nonhistorical, private DSH hospitals; and SOFs and private psychiatric hospitals.	All Hospitals
IC 12-15-20.7-2	For FY 2008 and years after, extends the authorization OMPP to make payments in the order of priority that best utilizes available nonfederal share, Medicaid supplemental payments, and Medicaid DSH payments, and may change the order of priority at any time necessary for the proper administration of one or more of the payment programs. (Also repealed a similar provision, IC 12-15-20.7-3.)	All Hospitals

* This provision was changed by HEA1001 (2008) to refer to "funds" transferred to the state HCI fund rather than "county funds" transferred, thus allowing for state general funds to be used for the nonfederal match.

Appendix B

HCI / UPL / DSH Payment Descriptions, 2000 - 2010.					
Program	**Pool or Payee**	**2007**	**2008**	**2009**	**2010 (Anticipated)**
HCI	**State Medicaid Program**	$33 M to state Medicaid program to be used for state match.	Final year for local HCI property tax levies. State appropriation increased to $56.9 M.	No local HCI levy. State appropriation equals $56.9 M.	No local HCI levy. State appropriation increased to $61.5 M.
	All Hospitals Serving Indigents	HCI Add-on payments based on claims for qualifying care at hospitals. Claims are priced at Medicaid rates and paid once per year.	No payments were made in 2008. Proposed methodology was not approved by CMS.	No HCI-funded add-on payments were made. (See 2008)	No HCI-funded add-on payments will be made. (See 2008)
UPL	**Private Hospitals (UPL Pool #1)**	$10 M, by statute, split evenly between inpatient and outpatient pools at private hospitals with more than 70,000 Medicaid inpatient days (Clarian is only hospital in this pool).	UPL Pool #1 received entire $10 M.	UPL Pool #1 received entire $10 M.	UPL Pool #1 will receive entire $10 M.
	Private Hospitals (UPL Pool #2)	Paid to private hospitals based on their relative number of Medicaid inpatient days in the state.	State Plan referenced a state statute that was only effective through 2007. No payments were made to UPL Pool #2 in 2008.	No payments were made to UPL Pool #2. (See 2008)	No payments will be made to UPL Pool #2. (See 2008)
	"Historical" DSH Hospitals (UPL Pool #3)	Paid an amount agreed to with the state. Split based on inpatient days and case-mix indexes. (For 2007, this exhausted all UPL funds available to the private hospitals.)	Paid by agreement with state.	Clarian continued to be paid by agreement with the state; however, the other historical providers were paid from the "safety net pool.	Clarian will continue to be paid by agreement with the state, and the other historical providers will be paid from the "safety net pool.
	"Safety Net" Hospitals	Safety Net hospitals received no payments in 2007.	UPL funds were available for private hospitals, so prorated "Safety Net payments were made. They received 26.96% of their HSL caps.	"Safety Net hospitals received 82% of the HSL caps.	"Safety Net payments will likely again be subject to proration, depending on the size of the private UPL pool and the calculated HSL caps.
	Municipal Hospitals (UPL)	Municipal hospitals received 100% of their hospital-specific limit through a combination of UPL and DSH payments. (For 2007, each hospital received the same share of NSGO UPL pool as they received in 2006.)	Municipal hospitals received 100% of their HSL caps. For 2008, each hospital again received the same share of the NSGO UPL pool as they received in 2006.	The NSGO hospital UPL funds plus DSH funds were not sufficient to pay 100% of HSL caps in 2009. Each hospital received 60.2% of their net payment amount (i.e., payments less IGT). All hospitals except Wishard were paid entirely from UPL funds.	The combined NSGO UPL and remaining DSH funds will be lower than the total municipal hospital caps, resulting in prorated payments.

HCI / UPL / DSH Payment Descriptions, 2000 - 2010.					
Program	**Pool or Payee**	**2007**	**2008**	**2009**	**2010 (Anticipated)**
DSH	**Municipal Hospitals (DSH)**	Received the balance of their HSL after payment of the IMD pool (below).	Received the balance of their HSL caps after payment of the IMD pool (below).	Wishard was the only hospital that received DSH funds in 2009.	Combination of UPL and DSH funds will not likely be sufficient to pay full HSL, resulting in proration.
	Private Pscyhiatric Hospitals	Nonstate psychiatric hospitals, by statute, receive $2 M of the IMD pool (which is equal to 33% of total statewide DSH allotment). The $2 M is allocated based on each hospital's MIUR.	Nonstate psychiatric hospitals received $2 M of the IMD pool. Pool was distributed according to each hospital's MIUR.	Nonstate psychiatric hospitals received their usual $2 M distributed according to each hospital's MIUR.	Nonstate psychiatric hospitals will receive their $2 M allotment distributed according to each hospital's MIUR.
	State Psychiatric Hospitals (SOFs)	Remainder of the IMD pool is allocated to the SOFs. (After the IMD pool was paid, municipal hospitals (above) received the balance of their HSL through DSH payments.)	The SOFs received the balance of the entire IMD allotment.	Slightly less than the entire IMD allotment was distributed. SOFs were paid their uncompensated costs. Remaining DSH was paid to the municipal hospitals.	SOFs should receive their entire balance of the IMD allotment. Any DSH funds in excess of the IMD allotment will be allocated to municipal hospitals.
	CMHCs				
	DSH-eligible Private Hospitals	By statute, DSH payments to private hospitals are only made if there is money left over after the state hospitals, the private pscyhs, and the municipal hospitals have received up to their limits. If funds are available, private hospitals, excluding "historicals , receive the remaining funds. If insufficient funds to pay up to HSL caps, payments are prorated at same percentage for all hospitals. (For 2007, private hospitals received 62.79% of their caps.)	In 2008, there were sufficient DSH funds available to provide each DSH-eligible private hospital 44.52% of their remaining cap after considering the hospital's payments from the "safety net distribution. (The same distribution formula was used that was used in 2007.)	Payments to the IMDs and municipal hospitals exhausted all DSH funds. No DSH payments were made to private hospitals.	Payments to the IMDs and municipal hospitals will likely exhaust all DSH funds. No DSH payments are likely to be made to private hospitals.
	Healthy Indiana Program (HIP)		*HIP:* Agreements made in the HIP waiver reduced available DSH funds by approximately $37.6 M for FFY 2008.	*HIP:* Agreements made in the HIP waiver reduced available DSH funds by approximately $59 M for FFY 2009.	The reduction in DSH funds due to the HIP waiver agreement is estimated to be approximately $59.0 M for FFY 2010.

Source: *HCI / UPL / DSH Payment Summary and Calculations: 2000-2010*; OMPP.

HCI / UPL / DSH Payment Descriptions, 2000 - 2010. *(Continued)*					
Program	**Pool or Payee**	**2003**	**2004**	**2005**	**2006**
HCI	**State Medicaid Program**	$22,844,500 paid to state Medicaid program to be used for state match for Medicaid expenditures.	$33 M paid to state Medicaid program to be used for Medicaid expenditures.	$33 M paid to state Medicaid program to be used for Medicaid expenditures.	$33 M paid to state Medicaid program to be used for Medicaid expenditures.
	All Hospitals Serving Indigents	HCI add-on payments based on FY1997 HCI payment. Excess paid to hospitals in counties with HCI tax levies greater than their hospitals' 1997 HCI payments. HCI taxes attributable to each county allocated to hospitals based on Medicaid days from most recent DSH-eligibility calculation.	Change in payment methodology for HCI add-on payments resulted in allocation based on each hospital's indigent care claims, price at Medicaid rates and paid once per year.	Same procedure as 2004.	Same procedure as 2004 and 2005.
UPL	**Private Hospitals (UPL Pool #1)**	Clarian, through agreement with state, received remaining outpatient private UPL funds after all other private DSH-eligible hospitals received their full amounts.	UPL Pool #1 was created in statute, splitting $10 M evenly between inpatient and outpatient pools at private hospitals with more than 70,000 Medicaid inpatient days. (Clarian is only hospital in this pool.)	Same procedure as 2004.	Same procedure as 2004 and 2005.
	Private Hospitals (UPL Pool #2)		UPL Pool #2 created. Consists of private hospitals with payments distributed based on Medicaid inpatient days.	Same procedure as 2004.	Same procedure as 2004 and 2005.
	"Historical" DSH Hospitals (UPL Pool #3)				Defined in statute as DSH-eligible in FY 1998. Under agreement with state, payments based on inpatient days and case-mix indexes.
	"Safety Net" Hospitals	Payment based on each hospital's Medicaid shortfall and number of consecutive periods of eligibility. Payments equaled 100% of what each hospital was eligible to receive.	UPL payments for private hospitals (excluding Clarian) based on each hospital's Medicaid shortfall and consecutive periods of eligibility. Each hospital received entire amount eligible to receive. Clarian received balance of private UPL funds.	Same procedure as 2004.	Safety Net hospitals received no payment in 2006.

HCI / UPL / DSH Payment Descriptions, 2000 - 2010. ***(Continued)***

Program	Pool or Payee	2003	2004	2005	2006
DSH	**Municipal Hospitals (UPL)**	Municipal hospitals received 100% of their HSL caps through combination of UPL and DSH payments. For 2003 UPL, each hospital received proportional share of hospital's in-state NSGO UPL pool total.	Full amount of NSGO UPL funds distributed to Muni's. Partial UPL payment paid proportionately, based on in-state claims. Amount attributable to out-of-state claims paid to Wishard.	UPL payments to each hospital for in-state claims equaled each hospital's HSL. UPL for out-of-state hospitals paid to Wishard plus funds available in excess of other hospitals' HSLs.	Same as prior year, except after payments were paid proportional to in-state UPL, including Wishard, the NSGO UPL methodology was revised downward. Refund of full amount of the decrease came from Wishard.
	Municipal Hospitals (DSH)	After payment of IMD pool, municipal hospitals,with exception of Wishard, received balance of HSL caps. Wishard paid out of acute DSH pool (below).	Received the balance of their HSL caps after payment of the IMD pool.	Same as 2004.	Same as 2004 and 2005.
	Nonstate Pscyhiatric Hospitals	Nonstate psychiatric hospitals received their usual $2 M distributed according to each hospital's MIUR.	Same procedure as prior year.	Same procedure as prior year.	Same procedure as prior year.
	State Psych Hospitals (SOFs)	Remainder of IMD pool allocated to SOFs.	Same procedure as prior year.	Same procedure as prior year.	Same procedure as prior year.
	CMHCs				
	DSH-eligible Private Hospitals	DSH payments to private hospitals and Wishard made only if funds left over after SOFs, nonstate pscyhs, and municipal hospitals have received up to their limits. Private hospitals receive remaining funds based on HSL and years of eligibility. 2003 federal DSH allotment was lower than previous years. Private hospitals (subject to 1/3) received add'l 2002 amount in lieu of a 2003 payment. Wishard received less than their full cap amount.	DSH payments to private hospitals made only if funds left over after IMD payments and municipal hospitals have received up to their limits. Private hospitals receive remaining funds based on HSL and years of eligibility. For 2004, private hospitals received the amount eligible to receive. Wishard then was paid the remainder, which was less than their cap amount.	Same procedure as 2004. Private hospitals received the amount eligible to receive. Wishard then was paid their entire cap amount.	Private hospitals, excluding "Historical hospitals, received the balance of the DSH allotment, resulting in a prorated distribution.
	HIP				

Source: *HCI / UPL / DSH Payment Summary and Calculations: 2000-2010*; OMPP.

HCI / UPL / DSH Payment Descriptions, 2000 - 2010. *(Continued)*				
Program	**Pool or Payee**	**2000**	**2001**	**2002**
HCI	**State Medicaid Program**	$21,609,000 paid to state Medicaid program to be used for state match for Medicaid expenditures.	$21,609,500 paid to state Medicaid program.	$21,689,500 paid to state Medicaid program.
	All Hospitals Serving Indigents	HCI add-on payments based on FY1997 HCI payment. Excess paid to hospitals in counties with HCI tax levies greater than their hospitals' 1997 HCI payments. HCI taxes attributable to each county allocated to each hospital based on Medicaid days from most recent DSH-eligibility calculation.	Same procedure as 2000.	Same procedure as 2000 and 2001.
UPL	**Private Hospitals (UPL Pool #1)**			
	Private Hospitals (UPL Pool #2)	Outpatient Medicaid shortfall paid to private DSH-eligible hospitals who entered into agreement with the state.		
	"Historical" DSH Hospitals (UPL Pool #3)			
	"Safety Net" Hospitals	CMS approved UPL payment known as "Safety Net for last quarter of FY 2000. Payment equaled 1/4 of inpatient and outpatient Medicaid shortfall amount. Each hospital received amount eligible to receive.	Payment equaled 100% of each hospital's Medicaid shortfall amount.	Payment based on each hospital's Medicaid shortfall and number of consecutive periods of eligibility. Payments equaled 100% of what each hospital was eligible to receive.
	Municipal Hospitals (UPL)	Municipal hospitals received 100% of their hospital-specific limit (HSL) through a combination of UPL and DSH payments. (Each NSGO hospital received a payment equal to the hospital's Medicaid shortfall.)	Municipal hospitals received 100% of their HSL caps through a combination of UPL and DSH payments. For 2001 UPL, each hospital received their proportional share of the hospital's in-state NSGO UPL pool total.	Municipal hospitals received 100% of their HSL caps. For 2002 UPL, each hospital received the proportional share of the hospital's in-state NSGO UPL pool total.
DSH	**Municipal Hospitals (DSH)**	Received the balance of their HSL after payment of the IMD pool (below).	Same procedure as 2000.	Same procedure as 2000 and 2001.
	Nonstate Pscyhiatric Hospitals	Nonstate psychiatric hospitals, by statute, receive $2 M of the IMD pool (which is equal to 33% of total statewide DSH allotment). The $2 M is allocated based on each hospital's MIUR.	Nonstate psychiatric hospitals received $2 M of the IMD pool. Pool was distributed according to each hospital's MIUR.	Nonstate psychiatric hospitals received their usual $2 M distributed according to each hospital's MIUR.
	State Psychiatric Hospitals (SOFs)	Remainder of the IMD pool after payments to private psychs and CMHCs.	The SOFs received their full amount.	The SOFs received their full amount.

HCI / UPL / DSH Payment Descriptions, 2000 - 2010. *(Continued)*				
Program	**Pool or Payee**	**2000**	**2001**	**2002**
	CMHC Pool	Received $6 M of IMD pool, distributed based on amount funded by county CPE up to HSL cap.	CMHCs received remaining DSH allotment up to their caps.	CMHCs received remaining DSH allotment up to their caps.
	DSH-eligible Private Hospitals	DSH payments to private hospitals and Wishard are only made if there is money left over after IMD pool and the municipal hospitals have received up to their limits. If funds are available, private hospitals receive the remaining funds. (For 2000, private hospitals received their full caps. Wishard and Clarian were paid last, receiving less than their caps.)	Private hospitals received their full caps.	DSH payments to private hospitals and Wishard only made if funds left over after IMD pool and municipal hospitals have received up to their limits. Private hospitals receive remaining funds based on HSL and years of eligibility. For 2002, private hospitals received the amount eligible to receive.
	HIP			

Source: *HCI / UPL / DSH Payment Summary and Calculations: 2000-2010*; OMPP.

Appendix C

Supplemental Payment Program [IC 12-15-20.7-2(b)] [1]

	Sources of Funding for the Supplemental Payment Programs	2000	2001	2002	2003	2004
Local Funds	HCI Property Taxes for HCI for Medicaid Program, Add-On Payments, and UPL Pools	$25.68	$25.09	$27.33	$32.21	$16.71
	CMHC/County-funded CPE	2.28	9.43	7.83		
State Funds	State General Fund - Medicaid	10.63	10.63	10.55	10.49	10.45
	IGT - Appropriations to State Psychiatric Hospitals	42.98	43.59	37.09	31.64	39.36
Hospital Funds	IGT/CPE from Health and Hospital Corporation (Wishard) - On Wishard's own behalf	21.71	37.34	45.44	42.78	58.03
	IGT/CPE from Health and Hospital Corporation (Wishard) - On behalf of other hospitals	6.04	1.05	7.94	1.58	(5.82)
	IGT from Indiana University - On behalf of other hospitals, including Clarian	28.41	37.35	49.75	55.80	99.56
	IGTs from other NSGOs - On own behalf	14.54	16.53	35.69	29.91	42.12
	IGTs from other NSGOs - On behalf of other hospitals	16.65	18.96	-	-	-
	Total - Nonfederal Share	168.91	199.96	221.62	204.40	260.41
Federal Funds	Total - Federal Share	275.14	327.26	367.70	342.32	447.91

Program	Eligible under IC 12-15-	Recipients of Supplemental Payments	Description	2000	2001	2002	2003	2004
HCI	-20-2(8)(G)(i)	State Medicaid Program		$21.61	$21.61	$21.69	$22.84	$33.00
	-15-9 & -15-9.5	Add-on payments to hospitals		46.74	46.80	49.02	53.48	15.32
UPL	-15-1.5(b)(A)	Private hospitals [>60,000 Medicaid days (>70,000 days prior to FY 2008)] {Clarian}	UPL Pool #1				56.43	10.00
	15-1.5(b)(B)	Private hospitals [based on % of private hospital Medicaid inpatient days]	UPL Pool #2	48.41			-	196.64
	-19-2.1(a)(2)	Historical DSH hospitals [Pool split based on inpatient days & case-mix]	UPL Pool #3				-	-
	15-1.5	DSH-eligible acute care hospitals ["Safety Net hospitals]		24.73	92.45	79.45	99.19	58.66
	-16-1(b)	Municipal hospitals - UPL		8.70	30.79	128.45	65.68	105.14
DSH	-16-1(b)	Municipal hospitals -DSH		29.60	18.36	10.02	38.00	39.20
	-16-1(a)	Private psychiatric hospitals [split $2 M based on relative MIUR]	IMD Pool = up to 33% of statewide DSH cap	2.00	2.00	2.00	2.00	2.00
	-16-1(a)	State psychiatric hospitals (SOFs) [receive the remainder of pool funds]		112.43	114.82	97.70	83.21	104.54
	-16-1(c)	Community Mental Health Centers (CMHCs) [2]		6.00	25.34	21.15	--	--
		Healthy Indiana Program (HIP) [diverted DSH allocation]						
	-16-1(a)	DSH-eligible Privates [remainder - up to remaining HSL caps or statewide DSH allotment [13]]		165.43	196.66	201.51	148.74	176.82
		Total Payments		**$465.65**	**$548.83**	**$610.99**	**$569.57**	**$741.32**

	Sources of Funding for the Supplemental Payment Programs	2005	2006	2007	2008	2009
Local Funds	HCI Property Taxes for HCI for Medicaid Program, Add-On Payments, and UPL Pools	$20.65	$58.32	$31.59	-	-
	CMHC/County-funded CPE					
State Funds	State General Fund - Medicaid	10.45	0.74	0.74	30.75	32.71
	IGT - Appropriations to State Psychiatric Hospitals	38.61	38.32	38.93	38.80	33.44
Hospital Funds	IGT/CPE from Health and Hospital Corporation (Wishard) - On Wishard's own behalf	18.35	24.84	45.17	22.09	30.44
	IGT/CPE from Health and Hospital Corporation (Wishard) - On behalf of other hospitals	18.34	7.62	0.92	-	-
	IGT from Indiana University - On behalf of other hospitals	131.50	88.41	122.99	146.97	72.28
	IGTs from other NSGOs - On own behalf	51.77	51.20	48.86	43.53	24.22
	IGTs from other NSGOs - On behalf of other hospitals	-	-	-	-	-
	Total - Nonfederal Share	289.67	269.45	289.20	282.13	193.10
Federal Funds	Total - Federal Share	489.24	455.63	485.03	474.06	463.51

Program	Eligible under IC 12-15-	Recipients of Supplemental Payments	Description	2005	2006	2007	2008	2009
HCI	-20-2(8)(G)(i)	State Medicaid Program		$33.00	$33.00	$33.00	-	-
	-15-9 & -15-9.5	Add-on payments to hospitals		21.07	34.74	60.17	0.00	0.00
UPL	-15-1.5(b)(A)	Private hospitals [>60,000 Medicaid days (>70,000 days prior to FY 2008)] {Clarian}	UPL Pool #1	10.00	10.00	10.00	10.00	10.00
	15-1.5(b)(B)	Private hospitals [based on % of private hospital Medicaid inpatient days]	UPL Pool #2	240.91	30.36	19.48	0.00	0.00
	-19-2.1(a)(2)	Historical DSH hospitals [Pool split based on inpatient days & case-mix]	UPL Pool #3	-	233.79	262.14	339.92	166.01
	15-1.5	DSH-eligible acute care hospitals ["Safety Net hospitals]		61.23	-	-	16.54	156.07
	-16-1(b)	Municipal hospitals - UPL		124.95	95.95	101.02	108.45	97.09
DSH[1]	-16-1(b)	Municipal hospitals - DSH		59.45	173.64	162.05	140.60	131.87
	-16-1(a)	Private psychiatric hospitals [split $2 M based on relative MIUR]	IMD Pool = up to 33% of statewide DSH cap	2.00	2.00	2.00	2.00	2.00
	-16-1(a)	State psychiatric hospitals (SOFs) [receive the remainder of pool funds]		103.79	103.51	104.12	103.98	93.57
	-16-1(c)	Community Mental Health Centers (CMHCs) [2]						
		Healthy Indiana Program (HIP) [diverted DSH allocation]					37.60	59.01
	-16-1(a)	DSH-eligible Privates [remainder - up to remaining HSL caps or statewide DSH allotment]		155.51	41.09	53.25	34.70	-
		Total Payments		**$811.91**	**$758.08**	**$807.23**	**$793.79**	**$715.62**

(1) Generally, the payment totals reflect the gross payments. However, when providers use a certified public expenditure to fund payments, the totals reflect the federal share amounts.
(2) CMHCs statutorily hold the residual position for DSH payments; however, CMHCs have not received payments since 2000. CMHCs payments also were made from the IMD pool, along with private psychiatric hospitals and SOFs.

Source: OMPP.

Appendix D

Total Supplemental Payments By Hospital (HCI / UPL / DSH): 2000-2004.								
Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
100268850	Wishard Mem. Hosp.-HHC of Marion Co.	NSGO	Muni	105,597,328	131,472,575	144,472,062	139,554,159	158,812,501
100270110	Porter Memorial Hospital-Valparaiso	NSGO	Muni	5,133,815	5,279,174	12,124,519	12,712,508	17,580,991
100268190	Columbus Regional Hospital	NSGO	Muni	3,317,561	3,414,630	7,481,129	6,544,311	9,014,469
100268970	Clark County Memorial Hospital	NSGO	Muni	1,319,349	4,119,941	10,407,523	5,856,664	8,210,002
100270450	Floyd Memorial Hospital	NSGO	Muni	2,497,441	2,561,519	6,209,506	4,984,720	5,836,052
100270050	Hendricks Regional Health	NSGO	Muni	1,109,875	1,139,684	2,808,146	3,734,495	4,816,035
100270130	Good Samaritan Hospital-Vincennes	NSGO	Muni	3,486,156	4,495,234	5,310,334	6,959,205	5,344,051
100268730	Howard Regional Health Systems	NSGO	Muni	4,820,929	4,960,467	4,252,846	3,272,552	4,265,395
100270300	Riverview Hospital	NSGO	Muni	1,111,028	1,138,171	2,547,740	4,151,258	4,552,461
100269840	Memorial Hospital of Seymour	NSGO	Muni	934,876	953,759	2,459,938	2,687,900	4,391,604
100269870	Major Hospital	NSGO	Muni	1,109,498	1,144,219	2,718,435	2,295,460	3,742,095
100267930	Hancock Mem Hospital & Health Services	NSGO	Muni	1,527,037	1,572,274	1,862,188	1,646,435	2,323,881
100269480	Henry County Memorial Hospital	NSGO	Muni	854,678	956,457	3,036,901	1,500,152	3,450,974
100268530	Dearborn County Hospital	NSGO	Muni	1,111,856	1,144,927	4,079,435	2,806,178	3,206,418
100268040	Dunn Memorial Hospital	NSGO	Muni	1,309,102	1,346,574	2,075,675	2,104,487	2,252,897
100269800	Johnson Memorial Hospital	NSGO	Muni	1,057,300	1,090,052	2,647,680	2,372,223	2,861,663
100269260	Morgan County Memorial Hospital	NSGO	Muni	1,327,968	1,361,167	2,567,523	2,100,280	2,691,720
100269130	Witham Memorial Hospital	NSGO	Muni	620,906	639,927	1,161,405	1,539,329	2,630,980
100269660	Jasper County Hospital	NSGO	Muni	463,934	477,583	761,634	1,416,216	1,879,093
100269180	Memorial Hospital - Logansport	NSGO	Muni	967,569	989,240	2,547,306	1,833,586	2,440,603
100268930	Scott County Memorial Hospital	NSGO	Muni	1,010,124	1,040,042	2,441,950	1,599,629	2,071,594
100268710	Decatur County Memorial Hospital	NSGO	Muni	489,944	522,340	1,560,064	1,774,713	2,056,596
100268250	Harrison County Hospital	NSGO	Muni	697,305	718,755	1,410,570	1,295,755	1,978,569
100269150	Greene County General Hospital	NSGO	Muni	346,587	361,865	840,332	682,275	1,426,550
100268680	Putnam County Hospital	NSGO	Muni	367,233	619,921	1,259,403	1,050,683	1,220,293
100269610	Jay County Hospital	NSGO	Muni	437,476	445,819	1,059,823	1,349,169	1,541,243
100270480	White County Memorial Hospital	NSGO	Muni	959,517	989,482	1,170,968	1,108,452	1,140,499
100269990	Perry County Memorial Hospital	NSGO	Muni	224,178	359,671	1,107,405	926,599	1,283,212
100269720	Washington County Memorial Hospital	NSGO	Muni	1,185,435	1,219,266	1,157,089	1,075,046	1,735,912
100269760	Woodlawn Hospital	NSGO	Muni	638,477	654,605	1,046,235	1,081,674	1,205,917
100269970	Sullivan County Community Hospital	NSGO	Muni	279,291	501,787	1,649,004	846,020	1,226,447
100270180	Wabash County Hospital	NSGO	Muni	884,245	897,872	1,450,101	780,196	1,062,160

Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
100269550	Dukes Memorial Hospital	NSGO	Muni	683,034	1,612,978	1,871,232	2,048,759	1,930,462
100269820	Rush Memorial Hospital	NSGO	Muni	325,026	334,101	595,061	282,051	625,513
100270230	Daviess Community Hospital	NSGO	Muni	656,402	675,097	2,950,338	1,739,485	2,188,608
100270350	Pulaski Memorial Hospital	NSGO	Muni	609,126	626,588	578,161	606,443	710,392
100268270	Adams County Memorial Hospital	NSGO	Muni	540,851	553,121	285,782	229,231	783,252
100270160	Tipton County Hospital	NSGO	Muni	342,846	353,128	779,449	945,960	841,401
100268770	Blackford County Hospital	NSGO	-	289,902	299,330	545,462		
100268150	Clay County Hospital	NSGO	-	554,447	95,413			
100269000	McCray Memorial Hospital	NSGO	-	227,178				
100268590	Orange County Hospital	NSGO	-	250,362				
100270270	Randolph County Hospital	NSGO	-	733,927				
100268130	Wells Community Hospital	NSGO	-	223,262	8,338			
100273300	Richmond State Hospital	State	Psych	26,186,617	39,725,630	34,492,142	31,102,595	27,607,608
100273130	Larue Carter State Hospital	State	Psych	15,396,343	16,066,596	16,994,022	13,429,848	12,998,882
100273500	Evansville State Hospital	State	Psych	20,260,312	25,366,232	3,109,508	19,129,042	12,290,525
100273320	Madison State Hospital	State	Psych	20,246,089	26,821,688	22,684,794	17,660,372	16,455,842
100273120	Evansville Psychiatric Children's Center	State	Psych	2,563,970	1,293,679	-	-	-
200042130	Logansport State Hospital	State	Psych	27,779,994	-	-	-	*
100273170	Hamilton Center, Inc.	CMHC	Psych	526,359	3,340,875	2,846,766	102,539	180,275
100273560	Four County Counseling Center	CMHC	Psych	337,410	1,346,274	1,172,049	167,336	240,747
100273390	Grant-Blackford Mental Health	CMHC	Psych	261,511	1,188,700	1,020,879	105,400	268,227
100273160	Wabash Valley Hospital, Inc.	CMHC	Psych	833,622	1,972,570	1,704,491	115,056	270,467
200404950	Northeastern Center/Samara Unit	CMHC	Psych	-	-	-	-	-
100273260	Otis R. Bowen Center	CMHC	Psych	594,258	2,281,213	1,579,372	120,784	186,186
100270770	Madison Hospital Corporation	CMHC	Psych	2,086,465	3,963,652	3,370,702	50,253	109,974
100273510	Oaklawn Psychiatric Center	CMHC	Psych	591,128	2,403,741	2,075,399	197,043	284,121
200484350	Michiana	Private	Psych	-	-	-	-	135,744
100273680	BHC Meadows Hospital	Private	Psych	162,903	295,181	289,864	289,372	-
100273350	Southlake CMHC, Inc.	Private	Psych	504,546	1,990,787	1,744,554	251,100	175,726
100280850	Community Mental Health Center	Private	Psych	324,186	1,851,292	1,596,551	150,749	148,533
200150660	Behavioral Healthcare of Columbus	Private	Psych	97,775	158,188	115,552	118,752	-
200150420	Behavioral Healthcare of Northern Indiana	Private	Psych	115,794	198,319	-	-	-
200240620	Deaconess Cross Pointe	Private	Psych	-	-	332,181	331,617	-

Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
200431930	Wellstone Regional Hospital	Private	Psych	-	-	-	-	-
200119790	Clarian Health Partners (Methodist / IU)	Private	Hist	112,183,776	131,779,828	125,316,207	135,368,266	190,518,527
100268630	Methodist Hospitals Northlake Campus	Private	Hist	24,273,072	24,805,756	21,751,520	27,262,477	30,880,674
100268750	St. Margaret Mercy Health Care Ctr-North	Private	Hist	1,813,132	10,303,092	9,741,581	13,530,685	14,637,566
100268310	St. Catherine Hospital	Private	Hist	8,739,820	8,937,405	8,306,486	9,432,060	13,399,766
100269360	St. Anthony Memorial Health Center	Private	Hist	763,158	750,797	5,263,088	5,613,424	9,584,882
100268210	Fayette Regional Health System	Private	Hist	149,566	152,778	1,580,941	2,403,396	2,862,053
100274610	St. Vincent Children's Specialty Hospital	Private	Hist	999,491	1,706,901	1,392,230	2,330,392	2,126,929
100268810	Huntington Memorial Hospital	Private	Hist	152,824	119,758	1,451,312	1,904,766	2,394,550
100269890	Memorial Hospital of South Bend, Inc.	Private	**	1,921,582	1,943,380	7,947,487	3,857,424	13,518,035
100268500	St. Joseph Medical Center - Ft. Wayne	Private	**	763,283	763,283	3,771,868	1,402,799	6,565,030
100269380	St. Joseph Comm. Hosp.-Mishawaka	Private	**	239,147	243,663	4,744,073	2,695,272	4,133,504
100269040	Lafayette Home Hospital	Private	**	433,463	433,463	4,168,373	1,754,997	4,508,008
200272930	St. Vincent Frankfort Hospital, Inc.	Private	**	131,182	135,282	145,627	150,414	1,034,986
100268480	Parkview Hospital, Inc.	Private	**	857,845	857,845	878,293	857,845	10,717,119
200327520	Women's Hospital, The	Private	**	-	-	-	-	1,113,118
200352690	Orange County Hospital	Private	**	58,676	59,201	62,461	67,627	456,156
100268100	Bloomington Hospital, Inc.	Private	**	309,785	319,443	330,653	336,655	1,362,970
100269230	Marion General Hospital	Private	**	949,502	950,704	4,179,760	1,951,715	474,399
100269520	Community Hospital of Anderson	Private	**	391,732	395,748	2,426,944	1,299,994	187,044
200321460	St. Vincent Randolph Hospital, Inc.	Private	**	-	1,480,415	777,474	822,658	28,846
100225240	Starke Memorial Hospital	Private	**	170,997	172,924	173,841	206,414	61,430
100269430	Ball Memorial Hospital	Private	-	1,650,774	1,650,774	1,650,774	1,650,774	999,769
100267990	Bedford Regional Medical Center	Private	-	122,895	123,082	130,120	133,315	38,168
200148140	Behavioral Healthcare of Lebanon	Private	-	177,486				
200384340	Blackford Community Hospital, Inc.	Private	-	85,771	79,919	93,019	103,736	17,481
100268120	Bluffton Regional Medical Center	Private	-	89,640	51,109	113,021	128,595	60,455
100267970	Cameron Memorial Community Hospital	Private	-	54,816	55,115	57,945	59,914	486,412
100425510	Charter BHS of Indianapolis	Private	-	176,316				
100468360	Charter BHS of Jefferson	Private	-	77,969				
100273480	Charter BHS of Lafayette	Private	-	106,087				
100273620	Charter BHS of Northwest Indiana	Private	-	122,623				
100273530	Charter BHS of Terre Haute	Private	-	218,944				

Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
100269320	Community Hospital of Bremen	Private	-	6,427	6,382	7,248	7,358	5,123
100270500	Community Hospital South Inc	Private	-	30,448	30,448	30,448	30,448	80,491
100270570	Community Hospital-Munster	Private	-	850,083	852,598	929,423	1,290,684	818,817
100385760	Community Hospitals of Indiana, Inc	Private	-	1,227,274	6,892,235	5,848,339	542,656	772,963
100268390	Deaconess Hospital - Evansville	Private	-	1,486,418	1,564,169	1,660,379	1,350,717	818,393
100269460	DeKalb Memorial Hospital	Private	-	88,029	87,874	95,428	107,599	63,928
100268340	Elkhart General Hospital	Private	-	465,802	468,546	495,657	573,792	702,214
100269630	Gibson General Hospital	Private	-	86,358	83,798	93,580	136,296	27,773
100270430	Goshen General Hospital	Private	-	181,140	181,786	188,165	201,488	176,258
200260180	St. Vincent Jennings Community Hospital	Private	-	127,369	123,204	133,432	162,506	4,569
100269410	Kendrick Memorial Hospital	Private	-	12,883	12,640	13,693	12,233	-
100269210	King's Daughters' Hospital	Private	-	163,022	163,022	163,022	163,022	185,836
100270330	Kosciusko Community Hospital	Private	-	257,972	85,112	180,891	184,654	81,045
100269200	LaGrange Community Hospital	Private	-	24,790	23,769	25,017	25,828	24,692
100269110	LaPorte Hospital Inc.	Private	-	552,443	545,126	569,773	568,278	330,308
100268460	Lutheran Hospital of Indiana	Private	-	533,265	533,265	549,169	533,265	871,018
100268010	Margaret Mary Community Hospital	Private	-	67,456	64,782	74,449	84,706	45,553
200287080	Parkview Noble, A Community Hospital	Private	-	116,320	115,382	122,553	148,286	50,568
100270390	Medical Center of Southern Indiana	Private	-	86,533	86,533	86,533	86,533	37,799
100268610	Memorial Hosp. & Health Care Ctr-Jasper	Private	-	112,932	112,932	112,932	112,932	132,669
100270070	Methodist Hospital - Southlake	Private	-	444,507	446,926	520,823	901,135	860,434
100269700	Reid Hospital & Health Care Services	Private	-	497,216	497,216	497,216	497,216	551,592
200110710	Select Speciality Hosp. of NW Indiana	Private	-	11,021	11,081	12,913	-	-
200324860	St. Anthony Medical Ctr of Crown Point	Private	-	484,368	485,203	510,714	506,154	110,721
200321440	St. Clare Medical Center	Private	-	112,511	113,160	120,512	137,165	54,414
200136190	St. Elizabeth Ann Seton Hospital	Private	**	11,730	11,474	13,104	59,321	30,692
200027550	St. Elizabeth Ann Seton Hospital, Inc.	Private	-	55,000	53,860	84,162	104,627	9,184
100269080	St. Elizabeth Medical Center	Private	-	124,600	124,600	124,600	124,600	89,583
100268070	St. Francis Hospital & Health Centers	Private	-	48,314	48,314	48,314	48,314	447,868
100267950	St. John's Health System	Private	-	490,909	495,637	529,091	630,557	3,511
100269010	St. Joseph Hospital & Health Center	Private	-	269,442	259,934	293,872	334,415	133,336
100268800	St. Josephs Hospital of Huntingburg Inc	Private	-	38,413	38,413	38,413	38,413	18,277
100269940	St. Josephs Reg. Medical Ctr-South Bend	Private	-	1,344,575	1,356,508	1,428,036	1,504,676	1,022,750

Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
100269590	St. Joseph's Reg. Medical Ctr-Plymouth	Private	-	145,596	144,948	157,525	183,337	217,179
100466210	St. Margaret Mercy Health Care Ctr-South	Private	-	324,629	325,800	361,568	617,437	272,337
100268660	St. Mary's Medical Center	Private	-	155,878	156,726	182,640	374,876	725,308
100268410	St. Mary's Medical Center of Evansville	Private	-	1,209,633	1,255,286	1,311,777	1,602,810	1,526,843
200348850	St. Vincent Clay Hospital, Inc.	Private	-	63,770	64,009	70,158	77,210	13,246
100268950	St. Vincent Hospital & Health Care Center	Private	-	733,817	733,817	733,817	733,817	1,429,350
100268360	St. Vincent Mercy Hospital - Elwood	Private	-	41,407	42,128	47,226	46,071	11,538
100270250	St. Vincent Williamsport Hospital	Private	-	9,591	9,224	10,112	11,982	6,692
100270200	Terre Haute Regional Hospital	Private	**	143,234	143,350	1,757,801	288,088	276,594
100270730	The Women's Hospital of Indianapolis	Private	-	311	311	311	311	3,138
100270020	Union Hospital -Terre Haute	Private	-	235,189	235,327	247,127	259,365	459,452
100270780	Vencor Hospital - Indianapolis	Private	**	365,365	383,799	251,396	264,902	9,138
100270700	Warrick Hospital Inc	Private	-	136,614	135,467	145,493	130,660	12,554
100268170	West Central Community Hospital	Private	-	51,070	50,899	37,903	58,486	31,846
100270680	Westview Hospital	Private	-	10,921	10,921	10,921	10,921	12,877
100268830	Whitley County Memorial Hospital	Private	-	145,523	145,333	157,889	180,760	61,184
100270410	Winona Memorial Hospital	Private	-	156,544	156,544	156,544	156,544	-
100269500	Wirth Osteopathic Hospital	Private	-	20,764	20,585	21,267	-	-
200544300	Clarian North Medical Center	Private	-	-	-	-	-	-
200505180	Clarian West Medical Center	Private	-	-	-	-	-	-
200817930	Doctors Hospital	Private	-	-	-	-	-	-
200359450	Dukes Memorial Hospital	Private	-					
200328420	Dupont Hospital	Private	-	-	-	-	-	116,085
200266920	Healthsouth Rehab -Chow Ref 200484520	Private	-	-	-	-	-	2,123
100274630	Healthsouth Rehab Hosp Of Terre Haute	Private	-	-	-	-	-	20,215
100270740	Healthsouth Tri-State Rehab Hosp	Private	-	-	-	-	-	21,969
200398730	St. Vincent Heart Center Of Indiana, The	Private	-	-	-	-	-	12,323
200484520	Howard Reg. Health System-West Campus	Private	-	-	-	-	-	-
200310880	Franciscan Physicians Hospital	Private	-	-	-	-	-	369
200410370	Indiana Heart Hospital LLC, The	Private	-	-	-	-	-	14,354
200518770	Indiana Orthopaedic Hospital	Private	-	-	-	-	-	-
100373250	Kindred Hospital - Indianapolis South	Private	-	-	-	-	-	45,322
200836430	Monroe Hospital	Private	-	-	-	-	-	-

Medicaid #	Provider	Owner Type	DSH Class	2000	2001	2002	2003	2004
200524440	Parkview LaGrange Hospital	Private	-	-	-	-	-	-
200445560	Regency Hospital Of Northwest Indiana	Private	-	-	-	-	-	4,292
200097450	Rehabilitation Hosp Of Ft Wayne	Private	-	-	-	-	-	3,277
100274620	Rehabilitation Hospital Of Indiana	Private	-	-	-	-	-	48,045
200509740	Renaissance Specialty Hosp. - Central Ind.	Private	-	-	-	-	-	-
200816530	Saint Catherine Regional Hospital	Private	-	-	-	-	-	-
200079020	Select Speciality Hosp - Beechgrove Inc	Private	-	-	-	-	-	4,661
200107080	Select Specialty Hospital-Evansville	Private	-	-	-	-	-	1,431
100368680	Southern Indiana Rehab Hosp-New Albany	Private	-	-	-	-	-	17,907
200392020	St Vincent Seton Specialty Hospital	Private	-	-	-	-	-	2,538
200413490	St Elizabeth Ann Seton Hosp Of Kokomo	Private	-	-	-	-	-	5,908
200409060	St Johns Health System	Private	-	-	-	-	-	319,147
200473800	St Vincent Carmel Hospital Inc	Private	-	-	-	-	-	12,231
100268560	St. Vincent Frankfort Hospital	Private	-	-	-	757,889	484,186	-
Total Payments				**444,048,443**	**521,673,778**	**568,895,543**	**544,833,367**	**673,137,091**

* Logansport State Hospital received $31,668,841 in 2004, $29,155,840 in 2005, $29,622,588 in 2006, $31,917,282 in 2007, and $30,394,438 in 2008. However, due to a subsequent audit findin, the payments are in the process of being recouped.
** Eligible for DSH at some point on a 1/3, 2/3, 3/3 basis.

Source: OMPP.

Total Supplemental Payments By Hospital (HCI / UPL / DSH): 2000-2009.									
Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
100268850	Wishard Mem. Hosp.- HHC of Marion Co.	NSGO	Muni	142,405,045	132,382,871	132,382,871	112,261,641	135,041,865	1,334,382,918
100270110	Porter Memorial Hospital-Valparaiso	NSGO	Muni	23,987,399	25,019,115	20,858,600	-	-	122,696,121
100268190	Columbus Regional Hospital	NSGO	Muni	11,383,437	11,873,048	11,873,048	11,873,047	9,636,312	86,410,992
100268970	Clark County Memorial Hospital	NSGO	Muni	8,633,724	9,868,638	9,868,638	9,868,638	8,009,509	76,162,626
100270450	Floyd Memorial Hospital	NSGO	Muni	8,579,412	8,948,419	8,948,419	8,948,419	7,262,648	64,776,555
100270050	Hendricks Regional Health	NSGO	Muni	5,978,296	6,235,427	6,235,427	6,235,427	5,060,750	43,353,562
100270130	Good Samaritan Hospital-Vincennes	NSGO	Muni	5,575,284	5,815,081	5,815,081	5,815,081	4,719,592	53,335,099
100268730	Howard Regional Health Systems	NSGO	Muni	5,160,371	5,382,322	5,382,323	5,382,322	4,368,360	47,247,887
100270300	Riverview Hospital	NSGO	Muni	4,749,442	4,953,719	4,953,719	4,953,719	4,020,500	37,131,757
100269840	Memorial Hospital of Seymour	NSGO	Muni	4,581,625	4,778,684	4,778,684	4,778,684	3,878,439	34,224,193
100269870	Major Hospital	NSGO	Muni	4,045,793	4,219,806	4,219,805	4,219,806	3,424,847	31,139,764
100267930	Hancock Mem Hospital & Health Services	NSGO	Muni	3,632,602	3,788,843	3,788,843	3,788,843	3,075,072	27,006,018
100269480	Henry County Memorial Hospital	NSGO	Muni	3,600,295	3,755,146	3,755,146	3,755,146	3,047,723	27,712,618
100268530	Dearborn County Hospital	NSGO	Muni	3,335,988	3,479,471	3,479,471	3,479,471	2,823,982	28,947,197
100268040	Dunn Memorial Hospital	NSGO	Muni	3,267,885	3,408,439	3,408,439	3,408,439	2,766,332	25,348,269
100269800	Johnson Memorial Hospital	NSGO	Muni	3,135,589	3,270,453	3,270,453	3,270,453	2,654,340	25,630,206
100269260	Morgan County Memorial Hospital	NSGO	Muni	2,808,189	2,928,971	2,928,971	2,928,971	2,377,189	24,020,949
100269130	Witham Memorial Hospital	NSGO	Muni	2,744,821	2,862,876	2,862,877	2,862,877	2,323,547	20,249,545
100269660	Jasper County Hospital	NSGO	Muni	2,652,124	2,766,193	2,766,193	2,766,193	2,245,077	18,194,240
100269180	Memorial Hospital - Logansport	NSGO	Muni	2,567,538	2,677,971	2,677,971	2,677,971	2,173,475	21,553,230
100268930	Scott County Memorial Hospital	NSGO	Muni	1,837,700	2,485,464	2,485,464	2,485,464	2,017,233	19,474,664
100268710	Decatur County Memorial Hospital	NSGO	Muni	2,145,583	2,237,866	2,237,865	2,237,866	1,816,280	17,079,117
100268250	Harrison County Hospital	NSGO	Muni	2,080,853	2,170,353	2,170,352	2,170,353	1,761,485	16,454,350
100269150	Greene County General Hospital	NSGO	Muni	1,907,179	1,989,208	1,989,208	1,989,208	1,614,467	13,146,879
100268680	Putnam County Hospital	NSGO	Muni	1,529,618	1,813,997	1,813,997	1,813,997	1,472,263	12,961,405
100269610	Jay County Hospital	NSGO	Muni	1,645,672	1,731,079	1,731,079	1,731,079	1,404,964	13,077,403
100270480	White County Memorial Hospital	NSGO	Muni	1,396,035	1,456,080	1,456,079	1,456,080	1,181,772	12,314,964
100269990	Perry County Memorial Hospital	NSGO	Muni	1,338,735	1,396,316	1,396,315	1,396,316	1,133,267	10,562,014
100269720	Washington County Memorial Hospital	NSGO	Muni	1,394,650	1,454,635	1,454,635	1,454,635	1,082,217	13,213,520
100269760	Woodlawn Hospital	NSGO	Muni	1,258,096	1,312,207	1,312,208	1,312,207	1,065,004	10,886,630
100269970	Sullivan County Community Hospital	NSGO	Muni	1,216,551	1,268,876	1,268,876	1,268,876	1,029,836	10,555,564

Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
100270180	Wabash County Hospital	NSGO	Muni	1,053,714	1,099,035	1,099,035	1,099,035	891,990	10,317,383
100269550	Dukes Memorial Hospital	NSGO	Muni	486,728					8,633,193
100269820	Rush Memorial Hospital	NSGO	Muni	1,045,240	1,090,197	1,090,196	1,090,197	884,817	7,362,399
100270230	Daviess Community Hospital	NSGO	Muni	2,318,784	1,232,829	1,336,446	1,403,167	840,878	15,342,034
100270350	Pulaski Memorial Hospital	NSGO	Muni	930,585	978,880	978,880	978,880	794,471	7,792,406
100268270	Adams County Memorial Hospital	NSGO	Muni	817,143	852,289	852,290	852,289	691,729	6,457,977
100270160	Tipton County Hospital	NSGO	Muni	877,808	915,563	915,563	915,563	371,541	7,258,822
100268770	Blackford County Hospital	NSGO	-						1,134,694
100268150	Clay County Hospital	NSGO	-						649,860
100269000	McCray Memorial Hospital	NSGO	-						227,178
100268590	Orange County Hospital	NSGO	-						250,362
100270270	Randolph County Hospital	NSGO	-						733,927
100268130	Wells Community Hospital	NSGO	-						231,600
100273300	Richmond State Hospital	State	Psych	26,822,068	26,340,419	29,091,985	26,846,421	34,972,289	303,187,774
100273130	Larue Carter State Hospital	State	Psych	17,384,334	16,021,297	13,918,153	18,138,220	20,800,802	161,148,497
100273500	Evansville State Hospital	State	Psych	12,763,965	10,840,978	11,356,196	9,823,881	18,808,277	143,748,916
100273320	Madison State Hospital	State	Psych	15,865,494	9,563,377	8,166,189	8,844,097	17,438,650	163,746,592
100273120	Evansville Psychiatric Children's Center	State	Psych	-	-	-	-	1,546,079	5,403,728
200042130	Logansport State Hospital	State	Psych	29,155,840	29,622,588	31,917,282	30,394,438	-	148,870,142
100273170	Hamilton Center, Inc.	CMHC	Psych	149,342	173,614	197,668	199,577	199,577	7,916,592
100273560	Four County Counseling Center	CMHC	Psych	199,439	153,288	174,527	176,213	176,213	4,143,496
100273390	Grant-Blackford Mental Health	CMHC	Psych	222,203	152,685	173,841	175,520	175,520	3,744,486
100273160	Wabash Valley Hospital, Inc.	CMHC	Psych	224,058	142,373	162,099	163,664	163,664	5,752,064
200404950	Northeastern Center/Samara Unit	CMHC	Psych	-	128,788	146,632	148,049	148,049	571,518
100273260	Otis R. Bowen Center	CMHC	Psych	154,239	112,523	128,113	129,351	129,351	5,415,390
100270770	Madison Hospital Corporation	CMHC	Psych	91,104	60,415	68,786	69,450	69,450	9,940,251
100273510	Oaklawn Psychiatric Center	CMHC	Psych	235,370	56,118	63,893	64,510	64,510	6,035,833
200484350	Michiana	Private	Psych	372,677	272,354	310,091	313,086	313,086	1,717,038
100273680	BHC Meadows Hospital	Private	Psych	82,947	261,303	297,507	300,380	300,380	2,279,837
100273350	Southlake CMHC, Inc.	Private	Psych	145,574	119,170	135,681	136,992	136,992	5,341,122
100280850	Community Mental Health Center	Private	Psych	123,047	107,180	122,030	123,209	123,209	4,669,986
200150660	Behavioral Healthcare of Columbus	Private	Psych	-	-	-	-	-	490,267
200150420	Behavioral Healthcare of Northern Indiana	Private	Psych	-	-	-	-	-	314,113

Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
200240620	Deaconess Cross Pointe	Private	Psych	-	57,400	19,133	-	-	740,331
200431930	Wellstone Regional Hospital	Private	Psych	-	202,787	-	-	-	202,787
200119790	Clarian Health Partners (Methodist / IU)	Private	Hist	232,923,703	188,323,924	209,286,445	257,263,975	176,009,166	1,758,973,817
100268630	Methodist Hospitals Northlake Campus	Private	Hist	40,350,336	37,755,494	40,964,754	45,124,695	40,622,778	333,791,556
100268750	St. Margaret Mercy Health Care Ctr-North	Private	Hist	16,926,425	12,934,612	14,901,028	16,611,320	14,403,365	125,802,806
100268310	St. Catherine Hospital	Private	Hist	13,683,526	11,568,940	14,319,107	14,331,668	13,185,370	115,904,148
100269360	St. Anthony Memorial Health Center	Private	Hist	9,999,612	8,200,618	9,474,241	10,529,791	9,431,524	69,611,135
100268210	Fayette Regional Health System	Private	Hist	3,748,005	2,537,281	2,804,469	3,255,424	2,816,263	22,310,176
100274610	St. Vincent Children's Specialty Hospital	Private	Hist	2,792,999	2,017,470	2,239,896			15,606,308
100268810	Huntington Memorial Hospital	Private	Hist	2,902,379	2,043,283	2,339,424	2,803,804	2,356,238	18,468,338
100269890	Memorial Hospital of South Bend, Inc.	Private	**	14,517,987	12,079,280	14,730,662	12,197,811	17,930,253	100,643,901
100268500	St. Joseph Medical Center - Ft. Wayne	Private	**	6,825,272	5,409,229	6,941,757	5,439,253	9,455,177	47,336,951
100269380	St. Joseph Comm. Hosp.-Mishawaka	Private	**	4,291,590	3,403,165	4,345,795	3,421,827		27,518,036
100269040	Lafayette Home Hospital	Private	**	6,864,106	5,451,067	6,728,661	5,573,438	8,471,569	44,387,145
200272930	St. Vincent Frankfort Hospital, Inc.	Private	**	1,060,505	820,275	1,044,198	951,166	1,342,884	6,816,519
100268480	Parkview Hospital, Inc.	Private	**	12,344,287	13,038,195	16,259,188	11,914,897	18,210,895	85,936,409
200327520	Women's Hospital, The	Private	**	1,279,960	1,354,305	1,571,223	1,254,772	1,758,083	8,331,461
200352690	Orange County Hospital	Private	**	580,043	582,355	753,426	616,159	942,081	4,178,185
100268100	Bloomington Hospital, Inc.	Private	**	935,092	5,075,592	6,437,558	4,091,982	6,391,677	25,591,407
100269230	Marion General Hospital	Private	**	461,991	3,314,918	4,079,625	2,827,191	4,313,292	23,503,097
100269520	Community Hospital of Anderson	Private	**	220,722	2,058,313	2,531,607	2,011,821	2,974,570	14,498,495
200321460	St. Vincent Randolph Hospital, Inc.	Private	**	41,361	590,102	760,291	595,781	939,236	6,036,164
100225240	Starke Memorial Hospital	Private	**	135,970	365,141	550,444	344,059	524,588	2,705,808
100269430	Ball Memorial Hospital	Private	-	1,287,001	1,870,083	1,703,942	-	-	12,463,891
100267990	Bedford Regional Medical Center	Private	-	89,229	75,101	49,437	-	-	761,347
200148140	Behavioral Healthcare of Lebanon	Private	-						177,486
200384340	Blackford Community Hospital, Inc.	Private	-	24,353	60,791	31,877	-	-	496,947
100268120	Bluffton Regional Medical Center	Private	-	95,462	118,502	132,559	-	-	789,343
100267970	Cameron Memorial Community Hospital	Private	**	534,247	98,012	69,135	-	-	1,415,596
100425510	Charter BHS of Indianapolis	Private	-						176,316
100468360	Charter BHS of Jefferson	Private	-						77,969
100273480	Charter BHS of Lafayette	Private	-						106,087
100273620	Charter BHS of Northwest Indiana	Private	-						122,623

Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
100273530	Charter BHS of Terre Haute	Private	-						218,944
100269320	Community Hospital of Bremen	Private	-	6,655	10,193	5,515	-	-	54,901
100270500	Community Hospital South Inc	Private	-	98,728	102,100	216,909	-	-	620,020
100270570	Community Hospital-Munster	Private	-	916,740	1,840,368	2,256,405	-	-	9,755,118
100385760	Community Hospitals of Indiana, Inc	Private	-	1,151,022	1,438,357	1,658,660	-	-	19,531,506
100268390	Deaconess Hospital - Evansville	Private	-	1,164,895	782,003	1,437,496	-	-	10,264,470
100269460	DeKalb Memorial Hospital	Private	-	74,197	93,049	64,288	-	-	674,392
100268340	Elkhart General Hospital	Private	-	880,371	1,137,997	1,413,597	-	-	6,137,976
100269630	Gibson General Hospital	Private	-	34,254	60,081	98,456	-	-	620,596
100270430	Goshen General Hospital	Private	-	235,372	354,948	265,467	-	-	1,784,624
200260180	St. Vincent Jennings Community Hospital	Private	-	5,995	9,075	3,778	-	-	569,928
100269410	Kendrick Memorial Hospital	Private	-	-	-	-	-	-	51,449
100269210	King's Daughters' Hospital	Private	-	478,255	522,113	570,941	-	-	2,409,233
100270330	Kosciusko Community Hospital	Private	-	312,090	238,988	421,358	-	-	1,762,110
100269200	LaGrange Community Hospital	Private	-	22,826	-	-	-	-	146,922
100269110	LaPorte Hospital Inc.	Private	-	457,249	566,705	691,199	-	-	4,281,081
100268460	Lutheran Hospital of Indiana	Private	-	1,210,192	1,471,872	1,888,282	-	-	7,590,328
100268010	Margaret Mary Community Hospital	Private	-	52,362	68,808	96,151	-	-	554,267
200287080	Parkview Noble, A Community Hospital	Private	-	88,642	116,337	183,969	-	-	942,057
100270390	Medical Center of Southern Indiana	Private	-	49,243	67,106	2,544	-	-	502,824
100268610	Memorial Hosp.& Health Care Ctr-Jasper	Private	-	266,854	544,329	680,430	-	-	2,076,010
100270070	Methodist Hospital - Southlake	Private	-	932,975	-	-	-	-	4,106,800
100269700	Reid Hospital & Health Care Services	Private	-	918,362	1,162,482	1,430,652	-	-	6,051,952
200110710	Select Speciality Hospital of NW Indiana	Private	-	-	-	-	-	-	35,015
200324860	St. Anthony Medical Ctr of Crown Point	Private	-	475,639	703,964	1,380,430	-	-	4,657,193
200321440	St. Clare Medical Center	Private	-	40,801	73,507	48,413	-	-	700,483
200136190	St. Elizabeth Ann Seton Hospital	Private	-	19,801	53,268	30,400	-	-	229,790
200027550	St. Elizabeth Ann Seton Hospital, Inc.	Private	-	-	-	-	-	-	306,833
100269080	St. Elizabeth Medical Center	Private	-	294,014	329,257	404,148	-	-	1,615,402
100268070	St. Francis Hospital & Health Centers	Private	-	1,064,604	1,039,235	1,681,156	-	-	4,426,119
100267950	St. John's Health System	Private	-	-	-	-	-	-	2,149,705
100269010	St. Joseph Hospital & Health Center	Private	-	161,133	246,901	303,321	-	-	2,002,354
100268800	St. Josephs Hospital of Huntingburg Inc	Private	-	28,196	23,489	9,076	-	-	232,690

Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
100269940	St. Josephs Reg. Medical Ctr-South Bend	Private	-	1,178,016	1,862,380	2,512,581	-	-	12,209,522
100269590	St. Joseph's Reg. Medical Center-Plymouth	Private	-	169,333	287,359	419,240	-	-	1,724,517
100466210	St. Margaret Mercy Health Care Ctr-South	Private	-	293,152	371,103	830,701	-	-	3,396,727
100268660	St. Mary's Medical Center	Private	-	587,722	867,573	1,252,286	-	-	4,303,009
100268410	St. Mary's Medical Center of Evansville	Private	-	2,249,601	2,380,864	3,160,514	-	-	14,697,328
200348850	St. Vincent Clay Hospital, Inc.	Private	-	15,015	16,721	6,688	-	-	326,817
100268950	St. Vincent Hospital & Health Care Center	Private	-	1,776,265	2,298,284	2,818,743	-	-	11,257,910
100268360	St. Vincent Mercy Hospital - Elwood	Private	-	14,740	16,797	9,076	-	-	228,983
100270250	St. Vincent Williamsport Hospital	Private	-	11,055	15,748	16,682	-	-	91,086
100270200	Terre Haute Regional Hospital	Private	-	416,188	451,692	341,138	-	-	3,818,085
100270730	The Women's Hospital of Indianapolis	Private	-	-	-	-	-	-	4,382
100270020	Union Hospital -Terre Haute	Private	-	755,323	1,009,743	1,303,846	-	-	4,505,372
100270780	Vencor Hospital - Indianapolis	Private	-	3,135	7,497	8,034	-	-	1,293,266
100270700	Warrick Hospital Inc	Private	-	9,758	16,031	24,372	-	-	610,949
100268170	West Central Community Hospital	Private	-	46,998	70,968	98,435	-	-	446,605
100270680	Westview Hospital	Private	-	16,996	32,224	18,804	-	-	124,585
100268830	Whitley County Memorial Hospital	Private	-	115,646	102,729	167,774	-	-	1,076,838
100270410	Winona Memorial Hospital	Private	-	-	-	-	-	-	626,176
100269500	Wirth Osteopathic Hospital	Private	-	-	-	-	-	-	62,616
200544300	Clarian North Medical Center	Private	-	-	77,469	130,474	-	-	207,943
200505180	Clarian West Medical Center	Private	-	8,140	50,506	225,409	-	-	284,055
200817930	Doctors Hospital	Private	-	-	-	2,562	-	-	2,562
200359450	Dukes Memorial Hospital	Private	-	48,677	161,177	283,944	-	-	493,798
200328420	Dupont Hospital	Private	-	185,915	267,195	365,524	-	-	934,719
200266920	Healthsouth Rehab -Chow Ref 200484520	Private	-	-	-	-	-	-	2,123
100274630	Healthsouth Rehab Hosp Of Terre Haute	Private	-	17,216	19,269	7,513	-	-	64,213
100270740	Healthsouth Tri-State Rehab Hosp	Private	-	26,456	25,384	15,547	-	-	89,356
200398730	St. Vincent Heart Center Of Indiana, The	Private	-	18,866	50,538	704,708	-	-	786,435
200484520	Howard Reg. Health System-West Campus	Private	-	4,345	-	-	-	-	4,345
200310880	Franciscan Physicians Hospital	Private	-	14,520	29,659	9,294	-	-	53,842
200410370	Indiana Heart Hospital LLC, The	Private	-	24,861	58,238	53,005	-	-	150,458
200518770	Indiana Orthopaedic Hospital	Private	-	1,485	10,456	4,647	-	-	16,588
100373250	Kindred Hospital - Indianapolis South	Private	-	69,742	84,242	69,789	-	-	269,095

Medicaid #	Provider	Owner Type	DSH Class	2005	2006	2007	2008	2009	Total (2000-2009)
200836430	Monroe Hospital	Private	-	-	-	11,508	-	-	11,508
200524440	Parkview LaGrange Hospital	Private	-	4,345	41,304	49,652	-	-	95,301
200445560	Regency Hospital Of Northwest Indiana	Private	-	21,176	-	1,042	-	-	26,510
200097450	Rehabilitation Hosp Of Ft Wayne	Private	-	16,721	15,849	5,559	-	-	41,406
100274620	Rehabilitation Hospital Of Indiana	Private	-	86,848	148,756	104,053	-	-	387,702
200509740	Renaissance Specialty Hosp.-Central Ind.	Private	-	5,720	-	13,246	-	-	18,966
200816530	Saint Catherine Regional Hospital	Private	-	-	6,445	26,665	-	-	33,110
200079020	Select Speciality Hosp - Beechgrove Inc	Private	-	-	-	-	-	-	4,661
200107080	Select Specialty Hospital-Evansville	Private	-	-	-	3,170	-	-	4,601
100368680	Southern Indiana Rehab Hosp-New Albany	Private	-	15,675	41,825	8,382	-	-	83,789
200392020	St Vincent Seton Specialty Hospital	Private	-	17,051	33,934	27,360	-	-	80,883
200413490	St Elizabeth Ann Seton Hosp Of Kokomo	Private	-	19,801	-	14,722	-	-	40,431
200409060	St Johns Health System	Private	-	341,281	433,936	713,390	-	-	1,807,754
200473800	St Vincent Carmel Hospital Inc	Private	-	44,881	99,272	134,864	-	-	291,248
100268560	St. Vincent Frankfort Hospital	Private	-	-	-	-	-	-	1,242,075
Total Payments				**777,107,529**	**713,954,771**	**764,562,006**	**726,138,252**	**656,608,880**	**6,390,959,660**

** Eligible for DSH at some point on a 1/3, 2/3, 3/3 basis.

Source: OMPP.

Appendix E

Details of the Healthy Indiana Plan

The Healthy Indiana Plan was approved as a section 1115 Medicaid Demonstration project for a five-year period, January 1, 2008, through December 31, 2012. The population of children, parents, and pregnant women receiving services under the 1915(b) waiver for capitated managed health care plans (Hoosier Healthwise) was transferred from that waiver to the HIP waiver.

HIP provides a high-deductible health plan and an account similar to a health savings account, referred to as a POWER Account. Covered individuals include uninsured custodial parents up to 200% of the federal poverty level (FPL). Custodial parents with resources above the TANF resource limit of $1,000 are also eligible for HIP.

HIP is also available for a limited population of 34,000 uninsured noncustodial parents and childless adults with family incomes up to 200% of FPL. Care is provided within the managed care organizations, and continuing coverage is contingent upon covered individuals paying premiums as applicable. As a Medicaid waiver, the program is eligible for matching federal funds, including enhanced funding due to the ARRA.

In order to provide cost neutrality for the coverage of childless adults, a group not normally covered by Medicaid, and to receive federal Medicaid reimbursement in the HIP program, the state agreed to waive annual federal DSH distributions above a negotiated base level of about $151 M. The state must also demonstrate additional savings of $15 M after five years in other areas of the program as identified in the Special Terms and Conditions that govern the waiver.

Appendix F

Supplemental Payments and HIP Claims Payments							
Medicaid #	Hospital Name	Ownership*	DSH Class*	2007 Supplemental Payment	2009 Supplemental Payment	2009 HIP Claims Payment	2009 No. of HIP Claims Payments
100268270	Adams County Memorial Hospital	NSGO	Muni	852,290	691,729	193,042	970
100269430	Ball Memorial Hospital	Private	-	1,703,942	-	3,419,814	4,818
100267990	Bedford Regional Medical Center	Private	-	49,437	-	650,031	3,422
100273680	BHC Meadows Hospital	Private	Psych	297,507	300,380	81,624	32
200384340	Blackford Community Hospital, Inc.	Private	-	31,877	-	321,170	770
100268100	Bloomington Hospital, Inc.	Private	1/3	6,437,558	6,391,677	2,171,689	3,490
100268120	Bluffton Regional Medical Center	Private	-	132,559	-	204,563	479
100267970	Cameron Memorial Community Hospital	Private	-	69,135	-	282,546	547
200119790	Clarian Health Partners, Inc. (Methodist / IU Merged)	Private	Hist	209,286,445	176,009,166	6,670,373	7,450
200544300	Clarian North Medical Center	Private	-	130,474	-	641,671	324
200505180	Clarian West Medical Center	Private	-	225,409	-	349,103	815
200924720	Clarian-Arnett Health Systems**	#N/A	#N/A	#N/A	#N/A	334,944	170
100268970	Clark County Memorial Hospital	NSGO	Muni	9,868,638	8,009,509	1,208,595	1,342
100268190	Columbus Regional Hospital	NSGO	Muni	11,873,048	9,636,312	387,120	889
100269520	Community Hospital of Anderson	Private	1/3	2,531,607	2,974,570	1,424,941	2,885
100269320	Community Hospital of Bremen	Private	-	5,515	-	89,954	132
100270500	Community Hospital South Inc	Private	-	216,909	-	1,077,396	1,018
100270570	Community Hospital-Munster	Private	-	2,256,405	-	1,904,496	2,392
100385760	Community Hospitals of Indiana, Inc	Private	-	1,658,660	-	2,957,302	2,787
100280850	Community Mental Health Center	Private	Psych	122,030	123,209	35,022	182
100270230	Daviess Community Hospital	NSGO	Muni	1,336,446	840,878	343,530	1,491
200240620	Deaconess Cross Pointe	Private	Psych	19,133	-	2,460	1
100268390	Deaconess Hospital - Evansville	Private	-	1,437,496	-	1,914,768	3,028
100268530	Dearborn County Hospital	NSGO	Muni	3,479,471	2,823,982	381,326	1,552
100268710	Decatur County Memorial Hospital	NSGO	Muni	2,237,865	1,816,280	452,246	1,087
100269460	DeKalb Memorial Hospital	Private	-	64,288	-	193,636	662
200817930	Doctors Hospital	Private	-	2,562	-	101,059	79
200359450	Dukes Memorial Hospital	Private	-	283,944	-	1,035,106	1,641
100268040	Dunn Memorial Hospital	NSGO	Muni	3,408,439	2,766,332	533,195	1,116
200328420	Dupont Hospital	Private	-	365,524	-	894,014	797

Medicaid #	Hospital Name	Ownership*	DSH Class*	2007 Supplemental Payment	2009 Supplemental Payment	2009 HIP Claims Payment	2009 No. of HIP Claims Payments
100268340	Elkhart General Hospital	Private	-	1,413,597	-	2,008,953	1,892
100273450	Fairbanks Hospital	#N/A	#N/A	#N/A	#N/A	374,261	297
100268210	Fayette Regional Health System	Private	Hist	2,804,469	2,816,263	602,821	2,253
100270450	Floyd Memorial Hospital	NSGO	Muni	8,948,419	7,262,648	947,664	1,188
100273560	Four County Counseling Center	CMHC	Psych	174,527	176,213	49,252	16
200310880	Franciscan Physicians Hospital	Private	-	9,294	-	337,415	15
100269630	Gibson General Hospital	Private	-	98,456	-	323,051	862
100270130	Good Samaritan Hospital-Vincennes	NSGO	Muni	5,815,081	4,719,592	823,753	1,952
100270430	Goshen General Hospital	Private	-	265,467	-	738,724	1,123
100273390	Grant-Blackford Mental Health	CMHC	Psych	173,841	175,520	46,603	183
100269150	Greene County General Hospital	NSGO	Muni	1,989,208	1,614,467	157,318	428
100267930	Hancock Mem Hospital & Health Services	NSGO	Muni	3,788,843	3,075,072	755,384	2,035
100268250	Harrison County Hospital	NSGO	Muni	2,170,352	1,761,485	206,984	568
200266920	Healthsouth Rehab -Chow Ref 200484520****	Private	-	-	-	778	8
100270050	Hendricks Regional Health	NSGO	Muni	6,235,427	5,060,750	431,357	1,126
100269480	Henry County Memorial Hospital	NSGO	Muni	3,755,146	3,047,723	990,662	1,991
100268730	Howard Regional Health Systems	NSGO	Muni	5,382,323	4,368,360	1,159,672	2,678
200484520	Howard Regional Health System-West Campus	Private	-	-	-	78,551	249
100268810	Huntington Memorial Hospital	Private	Hist	2,339,424	2,356,238	306,283	893
200410370	Indiana Heart Hospital LLC, The	Private	-	53,005	-	646,773	212
200518770	Indiana Orthopaedic Hospital	Private	-	4,647	-	28,214	6
100269660	Jasper County Hospital	NSGO	Muni	2,766,193	2,245,077	192,545	796
100269610	Jay County Hospital	NSGO	Muni	1,731,079	1,404,964	342,068	716
100269800	Johnson Memorial Hospital	NSGO	Muni	3,270,453	2,654,340	479,231	1,628
100373250	Kindred Hospital - Indianapolis South	Private	-	69,789	-	24,498	2
100269210	King's Daughters' Hospital	Private	-	570,941	-	399,414	1,165
100270330	Kosciusko Community Hospital	Private	-	421,358	-	566,787	935
100269040	Lafayette Home Hospital	Private	1	6,728,661	8,471,569	1,124,191	1,169
100269110	LaPorte Hospital Inc.	Private	-	691,199	-	542,216	1,242
100268460	Lutheran Hospital of Indiana	Private	-	1,888,282	-	1,790,899	1,473
100270770	Madison Hospital Corporation	CMHC	Psych	68,786	69,450	50,516	25
100269870	Major Hospital	NSGO	Muni	4,219,805	3,424,847	389,329	1,555

Medicaid #	Hospital Name	Ownership*	DSH Class*	2007 Supplemental Payment	2009 Supplemental Payment	2009 HIP Claims Payment	2009 No. of HIP Claims Payments
100268010	Margaret Mary Community Hospital	Private	-	96,151	-	354,673	729
100269230	Marion General Hospital	Private	1/3	4,079,625	4,313,292	887,846	1,912
100269180	Memorial Hospital - Logansport	NSGO	Muni	2,677,971	2,173,475	400,100	1,188
100268610	Memorial Hospital and Health Care Center - Jasper	Private	-	680,430	-	558,906	1,613
100269840	Memorial Hospital of Seymour	NSGO	Muni	4,778,684	3,878,439	304,058	665
100269890	Memorial Hospital of South Bend, Inc.	Private	1	14,730,662	17,930,253	1,282,986	1,690
100268630	Methodist Hospitals Northlake Campus	Private	Hist	40,964,754	40,622,778	2,640,953	2,893
200484350	Michiana	Private	Psych	310,091	313,086	138,681	221
200836430	Monroe Hospital	Private	-	11,508	-	238,175	688
100269260	Morgan County Memorial Hospital	NSGO	Muni	2,928,971	2,377,189	740,412	2,614
200404950	Northeastern Center/Samara Unit	CMHC	Psych	146,632	148,049	69,601	32
100273510	Oaklawn Psychiatric Center	CMHC	Psych	63,893	64,510	49,039	180
200352690	Orange County Hospital	Private	2/3	753,426	942,081	299,246	511
200893400	Orthopaedic Hospital at Parkview North**	#N/A	#N/A	#N/A	#N/A	472,492	60
100273260	Otis R. Bowen Center	CMHC	Psych	128,113	129,351	80,678	549
100268480	Parkview Hospital, Inc.	Private	2/3	16,259,188	18,210,895	3,155,575	2,338
200524440	Parkview LaGrange Hospital	Private	-	49,652	-	221,559	313
200287080	Parkview Noble, A Community Hospital	Private	-	183,969	-	243,517	812
100269990	Perry County Memorial Hospital	NSGO	Muni	1,396,315	1,133,267	223,584	380
200916560	Physicians Medical Center**	#N/A	#N/A	#N/A	#N/A	31,841	10
100270110	Porter Memorial Hospital-Valparaiso	Private	-	20,858,600	-	1,040,869	1,764
200871590	Porter-Starke Services**	#N/A	#N/A	#N/A	#N/A	27,008	24
100270350	Pulaski Memorial Hospital	NSGO	Muni	978,880	794,471	379,229	593
100268680	Putnam County Hospital	NSGO	Muni	1,813,997	1,472,263	189,381	502
200097450	Rehabilitation Hosp Of Ft Wayne	Private	-	5,559	-	7,589	1
100274620	Rehabilitation Hospital Of Indiana	Private	-	104,053	-	147,045	57
100269700	Reid Hospital & Health Care Services	Private	-	1,430,652	-	1,125,889	2,284
200509740	Renaissance Specialty Hospital of Central Indiana	Private	-	13,246	-	44,158	9
200264930	Riverside Hospital Corporation***	#N/A	#N/A	#N/A	#N/A	8,291	4
100270300	Riverview Hospital	NSGO	Muni	4,953,719	4,020,500	847,560	1,425
100269820	Rush Memorial Hospital	NSGO	Muni	1,090,196	884,817	670,257	2,468
200816530	Saint Catherine Regional Hospital	Private	-	26,665	-	128,735	296

Medicaid #	Hospital Name	Ownership*	DSH Class*	2007 Supplemental Payment	2009 Supplemental Payment	2009 HIP Claims Payment	2009 No. of HIP Claims Payments
100268930	Scott County Memorial Hospital	NSGO	Muni	2,485,464	2,017,233	456,123	1,019
100368680	Southern Indiana Rehab Hosp-New Albany	Private	-	8,382	-	3,403	12
100273350	Southlake Community Mental Health Center, Inc.	Private	Psych	135,681	136,992	4,799	4
200324860	St. Anthony Medical Center of Crown Point	Private	-	1,380,430	-	665,230	984
100269360	St. Anthony Memorial Health Center	Private	Hist	9,474,241	9,431,524	778,762	1,139
100268310	St. Catherine Hospital	Private	Hist	14,319,107	13,185,370	2,079,762	4,251
200321440	St. Clare Medical Center	Private	-	48,413	-	149,072	439
200413490	St. Elizabeth Ann Seton Hosp Of Kokomo	Private	-	14,722	-	307,585	3
100269080	St. Elizabeth Medical Center	Private	-	404,148	-	1,172,853	1,326
100268070	St. Francis Hospital & Health Centers	Private	-	1,681,156	-	2,245,529	3,884
200409060	St. Johns Health System	Private	-	713,390	-	1,934,918	5,129
100269010	St. Joseph Hospital & Health Center	Private	-	303,321	-	957,195	3,025
100268500	St. Joseph Medical Center - Ft. Wayne	Private	1	6,941,757	9,455,177	862,353	1,552
100269940	St. Josephs Regional Medical Center South Bend	Private	-	2,512,581	-	729,390	788
100269590	St. Joseph's Regional Medical Center-Plymouth	Private	-	419,240	-	172,842	501
100268750	St. Margaret Mercy Health Care Center - North	Private	Hist	14,901,028	14,403,365	857,889	579
100466210	St. Margaret Mercy Health Care Center - South	Private	-	830,701	-	390,206	431
100268660	St. Mary's Medical Center	Private	-	1,252,286	-	1,233,561	1,816
100268410	St. Mary's Medical Center of Evansville	Private	-	3,160,514	-	1,708,311	2,165
200473800	St. Vincent Carmel Hospital Inc	Private	-	134,864	-	645,370	417
200348850	St. Vincent Clay Hospital, Inc.	Private	-	6,688	-	662,757	1,179
200272930	St. Vincent Frankfort Hospital, Inc.	Private	1	1,044,198	1,342,884	408,757	906
200398730	St. Vincent Heart Center Of Indiana, The	Private	-	704,708	-	506,362	75
100268950	St. Vincent Hospital & Health Care Center	Private	-	2,818,743	-	2,266,154	1,776
200260180	St. Vincent Jennings Community Hospital	Private	-	3,778	-	461,642	1,180
100268360	St. Vincent Mercy Hospital - Elwood	Private	-	9,076	-	610,547	1,450
200321460	St. Vincent Randolph Hospital, Inc.	Private	1/3	760,291	939,236	578,069	1,747
200392020	St. Vincent Seton Specialty Hospital	Private	-	27,360	-	496,505	12
100270250	St. Vincent Williamsport Hospital	Private	-	16,682	-	426,014	1,302
100225240	Starke Memorial Hospital	Private	1/3	$550,444	$524,588	$75,732	225
100269970	Sullivan County Community Hospital	NSGO	Muni	1,268,876	1,029,836	459,757	1,195
100270200	Terre Haute Regional Hospital	Private	-	341,138	-	1,030,099	841

Medicaid #	Hospital Name	Ownership*	DSH Class*	2007 Supplemental Payment	2009 Supplemental Payment	2009 HIP Claims Payment	2009 No. of HIP Claims Payments
200935230	The Heart Hospital at Deaconess Gateway LLC**	#N/A	#N/A	#N/A	#N/A	52,555	14
100270160	Tipton County Hospital	NSGO	Muni	915,563	371,541	400,666	473
100270020	Union Hospital -Terre Haute	Private	-	1,303,846	-	1,262,325	1,648
100273400	Valle Vista Health System***	#N/A	#N/A	#N/A	#N/A	411,160	227
100270780	Vencor Hospital - Indianapolis	Private	-	8,034	-	174,366	12
100270180	Wabash County Hospital	NSGO	Muni	1,099,035	891,990	84,674	168
100273160	Wabash Valley Hospital, Inc.	CMHC	Psych	162,099	163,664	15,681	164
100270700	Warrick Hospital Inc	Private	-	24,372	-	143,586	414
100269720	Washington County Memorial Hospital	NSGO	Muni	1,454,635	1,082,217	520,768	1,714
200431930	Wellstone Regional Hospital***	Private	Psych	-	-	126,669	49
100268170	West Central Community Hospital	Private	-	98,435	-	289,239	558
100270680	Westview Hospital	Private	-	18,804	-	135,153	368
100270480	White County Memorial Hospital	NSGO	Muni	1,456,079	1,181,772	178,957	589
100268830	Whitley County Memorial Hospital	Private	-	167,774	-	158,357	574
100268850	Wishard Memorial Hospital - HHC of Marion County	NSGO	Muni	132,382,871	135,041,865	3,423,116	11,414
100269130	Witham Memorial Hospital	NSGO	Muni	2,862,877	2,323,547	364,236	1,268
200327520	Women's Hospital, The	Private	2/3	1,571,223	1,758,083	83,492	66
100269760	Woodlawn Hospital	NSGO	Muni	1,312,208	1,065,004	382,105	475
	Total			**$663,259,551**	**$562,843,205**	**$97,727,490**	**167,421**

*Ownership and DSH Class can change over time. The Ownership and DSH Class in this table reflects status in 2009.
**These hospitals enrolled in Medicaid after the start of SFY 2008.
***These hospitals are psychiatric hospitals that were DSH-eligible from 2006 to 2009, but did not have uncompensated costs under their hospital specific limits.
****This hosptial stopped participating in Medicaid in 2004 and has had a change of ownership.

Data Source: FSSA Request No. 7627, HIP Hospital Expenditures, Run Date: 5/24/2010; OMPP.

HFC 10/28/10 Exhibit 2

Indiana Medicaid & Traumatic Brain Injury Members

Pat Casanova, Medicaid Director
Office of Medicaid Policy & Planning
Faith Laird, Director
Division of Aging

Total Cost[1] of TBI State Plan Services

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
Total cost for all claims for members who received at least one service at TBI facility[2]	$10,720,494.11	$14,167,836.48	$15,070,193.72	$13,288,300.82
Total cost for TBI facility claims only	$9,498,486.40	$12,166,414.99	$12,722,418.83	$11,326,498.44

[1] Total costs include both state and federal dollars.
[2] Some TBI waiver members also had a H2013 U1 claim (TBI facility). Thus, waiver expenditures for individuals who also received TBI facility services in the same SFY are included in the total.

Total Cost[3] of TBI Waiver Services

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
Total cost for all claims for TBI waiver members[4]	$6,048,903.50	$6,687,845.19	$8,061,936.43	$7,934,763.08
Total cost for TBI waiver services only	$3,412,400.56	$3,605,775.04	$3,896835.80	$4,370,812.07

[3] Total costs include both state and federal dollars.
[4] Some TBI waiver members also had a H2013 U1 claim (TBI facility). Thus, waiver expenditures for individuals who also received TBI facility services in the same SFY are included in the total.

TBI Facilities: Total Number of Patient Days

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
Total number of patient days	19,917	23,819	25,007	23,903

Total Payment[5] to TBI Facilities Outside of Indiana

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
NeuroRestorative (Carbondale, IL)	$6,171,764.85	$7,800,672.45	$8,107,168.96	$6,546,920.47
Rainbow (Ypsilanti & Farmington, MI)	$3,012,524.95	$3,939,445.82	$4,324,586.28	$4,602,503.41
Anchor Inne (Fairview, PA)	$104,025.00	$88,135.00	$109,475.00	$14,945.00
Coach House (Coldwater, MI)	$79,278.00	$208,150.00	$50,326.67	$35,000.00
The Grand Home of Marshall (Marshall, MI)	$130,893.60	$130,011.72	$130,861.92	$127,129.56
TOTAL	**$9,498,486.40**	**$12,166,414.99**	**$12,722,418.83**	**$11,326,498.44**

[5] Total costs include both state and federal dollars.

TBI State Plan Services FMAP

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
TBI State Plan Services FMAP	FMAP = 62.61	FMAP = 62.69	FMAP (includes ARRA) Q3 & Q4 = 73.23	FMAP (includes ARRA) Q1 & Q2 = 74.21 Q3 & Q4 = 75.69

Number of Members Receiving TBI Services

	SFY 2007	SFY 2008	SFY 2009	SFY 2010
Medicaid members receiving TBI state plan services only	76	91	102	99
Medicaid members receiving TBI waiver services only	127	139	140	144
Medicaid members receiving both TBI waiver and state plan services	7	4	12	8

HFC, Oct. 28, 2010 Exhibit #3

LEO BROWN GROUP, LLC

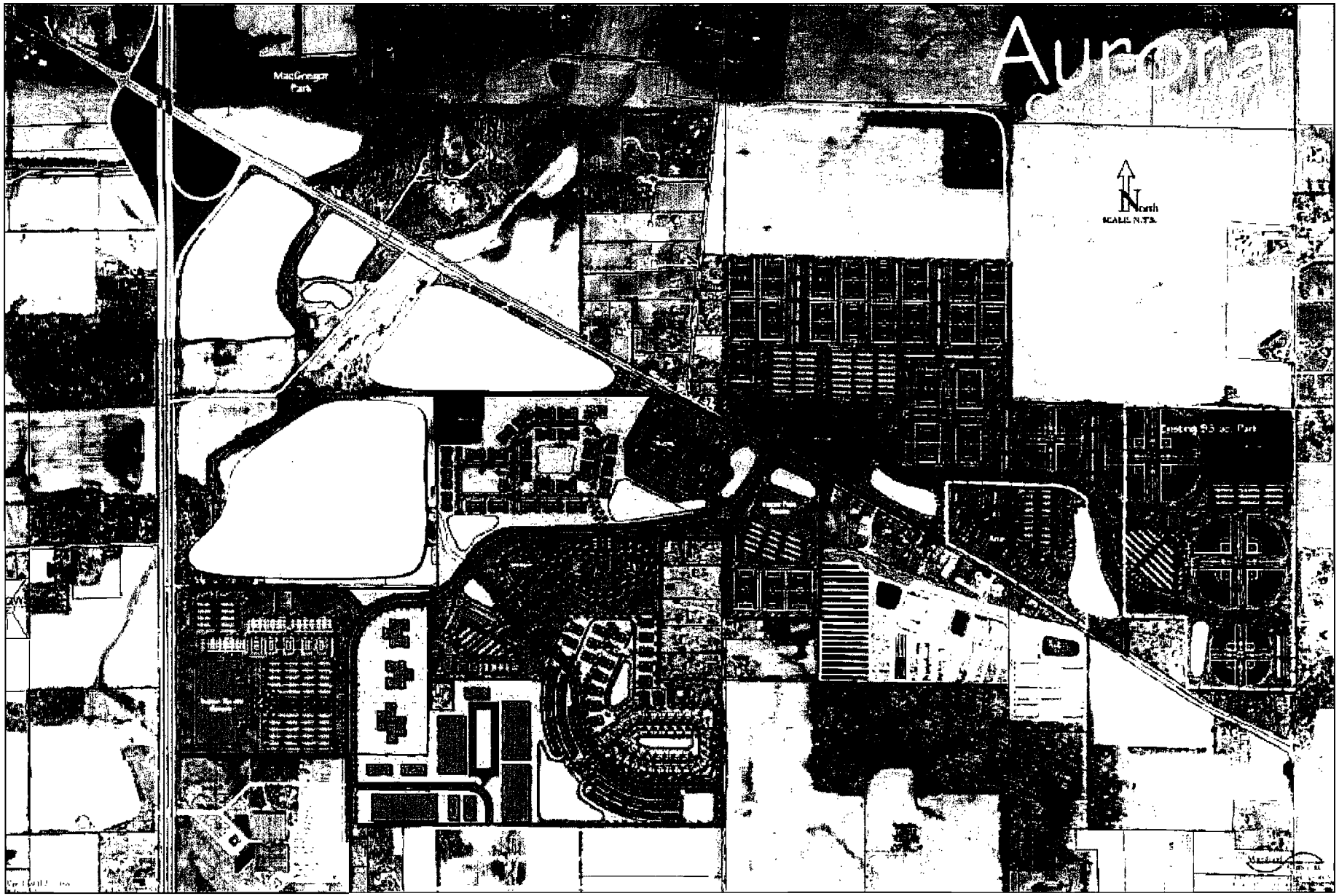
Magnolia Health Systems

Aurora Traumatic Brain Injury Treatment Campus
Westfield, IN

LEO BROWN GROUP, LLC

Aurora Traumatic Brain Injury Treatment Campus
Westfield, IN

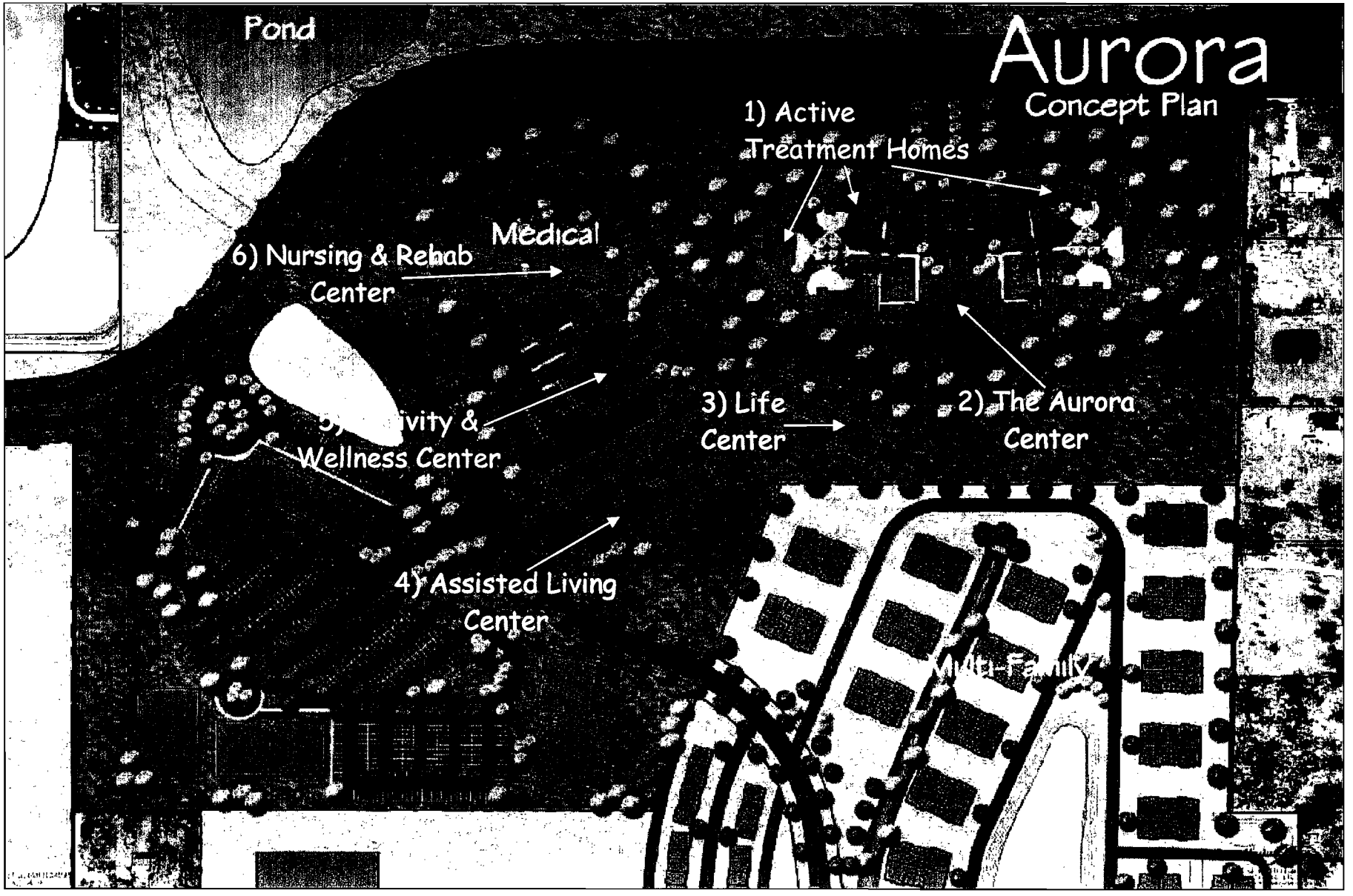
Magnolia Health Systems



LEO BROWN GROUP, LLC

Aurora Traumatic Brain Injury Treatment Campus
Westfield, IN

Magnolia Health Systems



LEO BROWN GROUP, LLC

Magnolia Health Systems

Aurora Traumatic Brain Injury Treatment Campus
Program and Service Description

1. **Active Treatment Homes:** Architecturally designed to meet the physical needs of the resident, each home will contain approximately 8-10 private rooms and offer all of the amenities needed to learn the new skills of self sufficiency and independence. Rehabilitation trainers will provide comprehensive assistance within the homes that allow each resident to achieve the goals of their individualized treatment plans.

2. **Aurora Center:** A 40,000 square foot facility located in the heart of the campus, the Aurora Center will be the primary site where the clinical team works with residents, families, case managers, and other professionals to develop the outcomes and goals needed to rebuild lives. In addition, the center will serve as the primary location for ensuring the professional growth of all campus employees with a focus on continuous training that strives for greater success. The Aurora Center will also house the campus' administrative center, which will include admissions, executive offices, nursing, personnel, and accounting services.

3. **Aurora Life Center:** The 16,000 square foot Aurora Life Center will serve as the hub of activity for all campus residents. It will include a Fitness Center, Arts Studio, Hobby Room, Education and Technology Centers, Auditorium, Coffee Shop, and Socialization Center.

4. **Aurora Assisted Living Center:** This facility will consist of approximately 50 efficiency and 1 bedroom units specially designed to enable the staff to provide assisted living services for non-geriatric adults who are challenged with brain injury, severe physical disability, or progressive illness. Each of the 4 wings of the facility will consist of a lounge area that will be furnished to create an active and vibrant culture. Each lounge will include a pool table, poker table, and a player piano for the residents to enjoy. The Aurora Assisted Living Center will also feature direct access to the Activity and Wellness Center.

5. **Aurora Activity and Wellness Center:** A 34,000 square foot facility that will provide a wide variety of activities for the residents of the Nursing and Rehab Center and Assisted Living Center. The Aurora Activity and Wellness Center will include an Auditorium and Movie Theatre, Health Club and Swimming Pool, Cyber Lounge, Hobby Room, Salon, Meeting Room, and Resident "Pub".

6. **Aurora Nursing and Rehab Center:** A facility where the staff will focus on the treatment of residents that require Dimension 1 Programming and Dimension 3 Programming. Dimension 1 Programming focuses on an individual whose injuries were recent and strives to help them regain the physical stability and stamina needed to enable full participation in the service offerings found on the rest of the campus. Dimension 3 Programming focuses on an individual whose physical advancements are limited by their injury and strives to help them develop and maintain hope and optimism for the future. The Nursing and Rehab Center is designed as an open and casual home atmosphere that will include furnished bedrooms, private bathrooms, patios and decks, and direct access to the Activity and Wellness Center.

7. **Multi-Family Units:** In addition to the six program/service levels offered within the future Aurora Traumatic Brain Injury Treatment Campus, Leo Brown Group and Magnolia Health intend on offering multi-family units (duplexes and quads) for those individuals that have progressed out of the main campus yet wish to maintain close proximity to the campus as a means of support and familiarity. These individuals will be able to enjoy all of the amenities of the adjacent TBI campus as well as the strong friendships and relationships they will have formed with the residents and staff, yet they will also have the independence of their very own residence. Families of the long-term residents of the TBI campus may also wish to move into the duplexes or quads as a means of being closer to their loved ones and having the opportunity to provide daily support and interaction.

HFC, 10-28-10, Exh 4

Brain Injury in Indiana

A request to the Health Finance Commission to establish a two-year brain injury study commission to

1. Study the needs of Hoosiers with brain injury and their families.
2. Inventory Indiana's brain injury services and identify gaps in services.
3. Develop a plan to address those needs and gaps.

Portfolio Contents

1. Introduction &Vision
    a. Fact sheet statistics from Brain Injury Association of America
    b. Vision - Brain Injury Group
2. Testimony:
    a. AG Clyne on behalf of Joe Clyne
    b. Maria Martino
    c. Becky McNichols on behalf of Scott McNichols
    d. Nancy Knarr
    e. David Elmore on behalf of Debra Elmore
    f. Julie Pratt
    g. June Holt on behalf of Joe Holt
3. Briefing materials for 2010 SCR 32
    a. Continuum of Care - developed by Brain Injury Group
    b. What we need in Brain Injury Services in Indiana (Brain Injury Group)
4. What other states are doing:
    a. Ohio
    b. Illinois
    c. Kentucky
    d. Michigan
    e. Colorado
5. Needs surveys: other states national barriers & recommendations
    a. Michigan
    b. Colorado
    c. Barriers & Recommendations: Addressing the Challenge of BI in America, a report provided by the Brain Injury Consensus Conference, 2008
6. Indiana Reports
    a. ISDH 2006 : TBI in Indiana, Needs Assessment Update: A Public Health Approach.
    b. ISDH 2007 Report: Data on Traumatic Brain Injury.
    c. Executive Summary: 2007 Indiana State-wide TBI Needs and Resources Assessment Final Report: Luther Consulting, LLC., pp 1,2.
    d. TBI: Comprehensive Services for Post-Acute Care & Rehabilitations, Medicaid Medical Advisory Cabinet 6/22/2009, Recommendations, pp 6,7.
    e. TBI: Systems of Care, Staffing Models, and Funding Models, Medicaid Medical Advisory Cabinet, revised 10/30/2009, Recommendations, pp 9, 10 .
    f. TBI: Synthesis of Indiana Medicaid Data, Medicaid Medical Advisory Cabinet, 3/31/2010, Recommendations pp 27, 28.
7. Research

Introduction & Vision

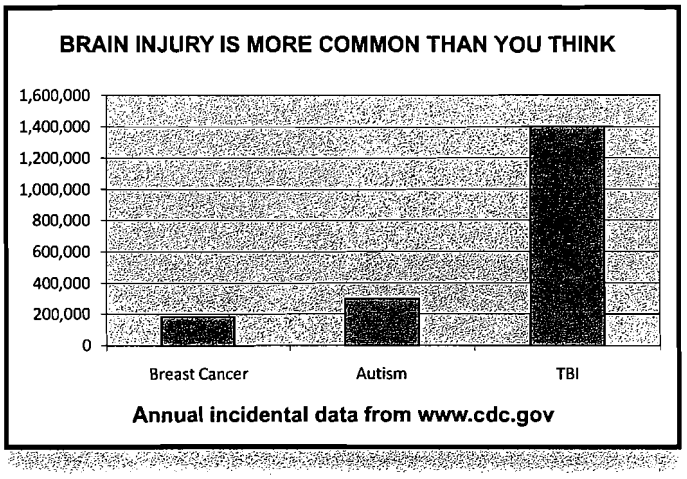
America's Healthcare Crisis for People with Brain Injury

Even if you are insured, you probably are not covered. Almost no one in America has adequate coverage for proper disease management, including medical rehabilitation, after brain injury. That's because payers use inconsistent policies for admission and scope of care. Some payers deny coverage altogether. When treatment is denied or benefits are limited, individuals with brain injury cannot return to work or school. Often, they lose their jobs, their insurance and their homes. The burden of care falls to families until they become destitute and then shifts to public health and welfare systems. We can prevent chronic disability and a lifetime of dependency for people with brain injury by enacting public policies that hold payers accountable for the insurance premiums they collect.

Understanding Brain Injury

A traumatic brain injury is a blow or jolt to the head that can temporarily or permanently diminish a person's physical abilities, impair cognitive skills, and interfere with emotional and behavioral well-being.

- 1.4 million people in the U.S. sustain TBIs annually.[1]
- 3.17 million children and adults live with a permanent disability as a result of TBI.[2]
- The annual cost to society for medical care and lost wages associated with TBI is $60 billion.[3]



Meeting the Standard of Care

Brain injury is complex. Unlike some diseases, it cannot be cured by surgery or prescription drugs. Brain injuries must be treated and managed by an interdisciplinary team of experienced and specialized clinicians.

The standard of care is early, intensive acute treatment and rehabilitation followed by post-acute rehabilitation of sufficient scope, duration and intensity to maximize recovery.

Research demonstrates that rehabilitation is the most beneficial treatment available to people with brain injury. Rehabilitation improves physical and cognitive skills, behavioral functioning, vocational status and independent living, and is effective even when provided many years after a brain injury.[4-11]

Disease management for brain injury includes emergency care, intensive care, hospital-based rehabilitation and non-hospital based rehabilitation. Proper disease management helps minimize circulatory, respiratory, hormonal and digestive complications and optimizes long-term health.[12]

The Dollars and Sense of Brain Injury Care

Study after study demonstrates that rehabilitation improves health and quality of life and is cost effective. Rehabilitation is an investment that saves millions of dollars for patients and taxpayers.

- A single patient with severe neurobehavioral disorders who received comprehensive rehabilitation realized a savings of $4.8 million to $6 million in the lifetime cost of care after subtracting the cost of rehabilitation programming.[13]
- The cost of supporting 76 patients in community settings was reduced by more than $1.48 million per person after each received six months of neurorehabilitation.[14]
- Post-acute rehabilitation resulted in 20-year cost-of care reductions ranging from $1 million to $4.8 million per person for the majority of 112 patients who had been previously placed in chronic care settings.[15]

- The weekly cost of care for 297 patients with severe brain injury was reduced by one-third following rehabilitation; the cost of rehabilitation was recovered within 16 to 38 months.[16]

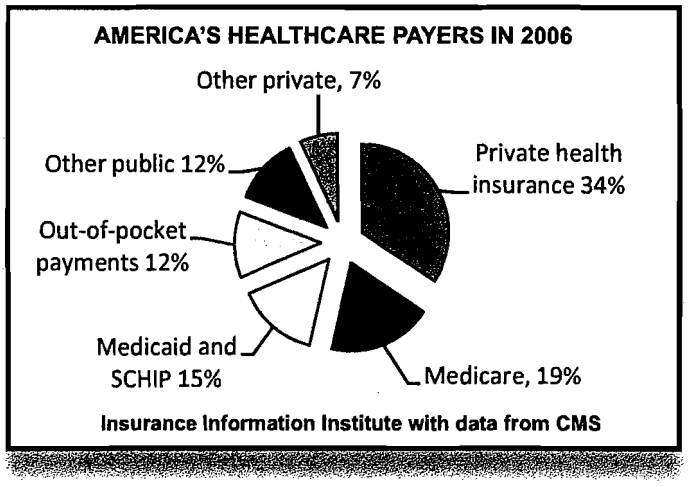
- Patients treated in residential rehabilitation settings demonstrated improvements in levels of care, functional ability and performance of social roles; the costs of rehabilitation were offset within two years and the lifetime savings ranged from $533,254 to $1.48 million per patient.[17]

One Family Does the Math

Joyce and her son Benjamin know the value of rehabilitation. Right after his injury, Ben needed 24-hour skilled nursing care, at a cost of $325,000 per year plus $75,000 per year in medical supplies.

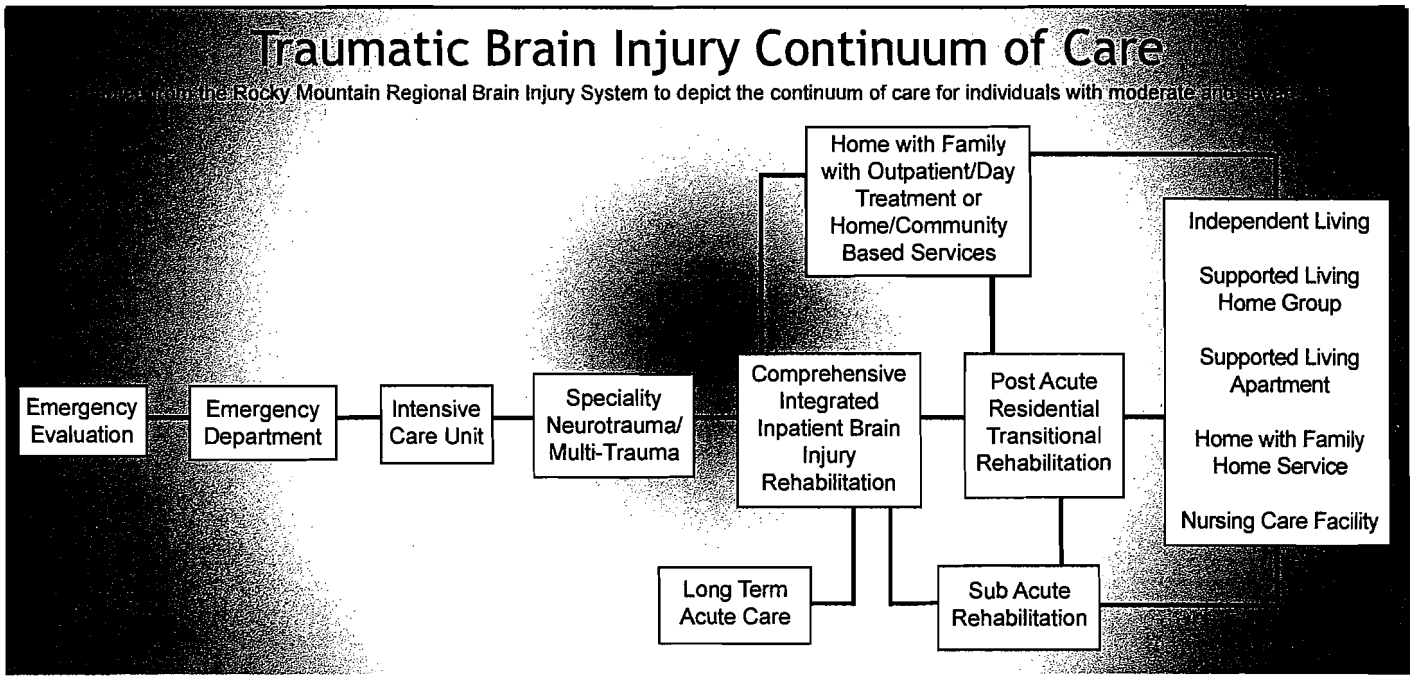
Ben's case manager wanted to discontinue treatment after six months, but Joyce and his rehabilitation team knew Ben could continue to improve.

After two years of therapy, Ben still needs assistance, but he is able to talk, eat and interact with other people. He is healthier and happier and his costs of care are now $150,000, a savings of $250,000 per year!



Brain injury is not an event or an outcome.

It is the beginning of a lifelong disease process.



Public Policy Change Needed

Despite the advantages of medical rehabilitation and cost efficiency of disease management, millions of patients with brain injury are denied the care they need. This often results in chronic disability and a lifetime of poverty. The economic burden is systematically transferred from the private sector to federal, state and local governments, and therefore, American taxpayers.

The Brain Injury Association of America urges that all discussions on reforming our nation's health care include requirements for both public and private payers to provide prompt access to the full spectrum of brain injury treatment, rehabilitation and disease management.

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Brain Injury Association of America

The Vision

Indiana's Consumer-Centered System of Care Will Provide:

1. Early guidance and education for the family and brain injury (BI) survivor about BI from peers and professionals with easily identified points of access to system of care at all levels of need.

2. Equal access to treatment, rehabilitation, educational, vocational, recreational and housing opportunities regardless of age at time of injury.

3. A full array of services on an as needed basis throughout a lifetime within a flexible but well defined and funded system of care in Indiana.

4. Client-centered care and planning: True partnerships and cooperation among state administration & professionals keeping the survivor and family at the center of planning and care and as full participants in treatment plans, life planning and other activities.

5. Educated brain injury professionals at all levels: family physicians, nurses, nursing facility staff, home care professionals, therapists, specialists, hospital discharge planners, case workers, and all others.

6. An educated population that can recognize the symptoms of brain injury, knows where to get help, and uses proven strategies to prevent injury.

7. Help for persons with brain injury to establish a new normalcy in life including maximum community participation and quality of life --a pathway to reconnect to the community.

8. Significant survivor and family participation in policy development at the state level and in advisory councils and boards.

9. Recognition and appropriate level of treatment and support for individuals with mild brain injury with emphasis on returning to productive community and vocational participation.

10. Appropriate caregiver training for family and friends and respite services available as needed.

Briefing Materials

-BRAIN INJURY CONTINUUM OF CARE-
(Acquired and traumatic brain injury)

Severe to moderate brain injury continuum of care

1) Emergency Care: Emergency room, doctor's office, surgical center (for neuro-oncology benign tumors, aneurysms, etc.)
2) Acute hospital: Trauma care, medical stabilization
3) Sub-acute medical/rehabilitative care: Needed medical care with maximum tolerable rehabilitative therapy. Sub-acute care provides skilled medical, nursing and rehabilitative care in a non-acute care setting for patients with complex medical needs. Sub-acute care is multidisciplinary, comprehensive, and goal-oriented. It falls between normal nursing facility of care and acute care. (Currently not provided in Indiana)
4) Acute rehabilitative care: Provided by a CARF accredited facility. Medically stable, intensive inpatient therapies: occupational, physical, speech, cognitive, vision, psychological, behavioral, recreational and other therapy as needed. (Indiana: Hook Rehab, Rehabilitation Hospital of Indiana, etc.)
5) Neurobehavioral care: Provided by CARF accredited facility. Therapies and neuropsychological care provided for memory, awareness, executive function and more cognitively-related impairments, as well as psychotherapy around loss issues. Includes intensive behavior management (Indiana: Hook Rehab)
6) Post-acute neurobehavioral care: Cognitive and physical rehabilitation are delivered in an independence-encouraging setting. Facility based, CARF accredited care with step-up to supported, independent living in shared houses or apartments. Stresses functionality and development of strategies to compensate for disabilities. Goes beyond activities of daily living (ADLs) to instrumental activities of daily living (IADLs) and quality of life issues. Post-acute neurobehavioral rehabilitation is currently provided by out-of-state (O-O-S) facilities which include Rainbow Services in Michigan, and Center for Comprehensive Services in Carbondale, IL. (Hook Rehabilitation has a small residential facility that employs the above tactics for individuals attending the intensive day treatment program).
7) Community Reintegration/Intensive Day Treatment: Community participation, development of social networks, vocational rehabilitation, recreational activities, continued life skills training (ADLs and IADLs) intensive cognitively-based therapy involving PT, OT, Speech, Recreation Therapy and Neuropsychology focused on awareness and improvement of quality of life. (Currently provided by Hook Rehab)

8) LTSS - Long term supports and services
   a) Community care is received in an individual's or family's home or apartment and small group homes with or without waiver services (St. Vincent New Hope, Anthony Wayne Services). Care is provided through collaborative efforts of case managers, therapists, doctors, nurses, family, friends and others in an outpatient setting; the focus is for the individual to attain and maintain highest functional level.
   b) Institutional care is received in nursing facilities; the focus is on maintaining minimal level of functioning and ease of care for facility. (Many people with BI are also maintained in correctional and mental health facilities.)

Mild brain injury continuum of care

There is no established continuum of care for persons with moderate to mild brain injury. They often are not diagnosed until days. weeks, or even years after the event and when symptoms do appear they are not recognized as caused by a brain injury.

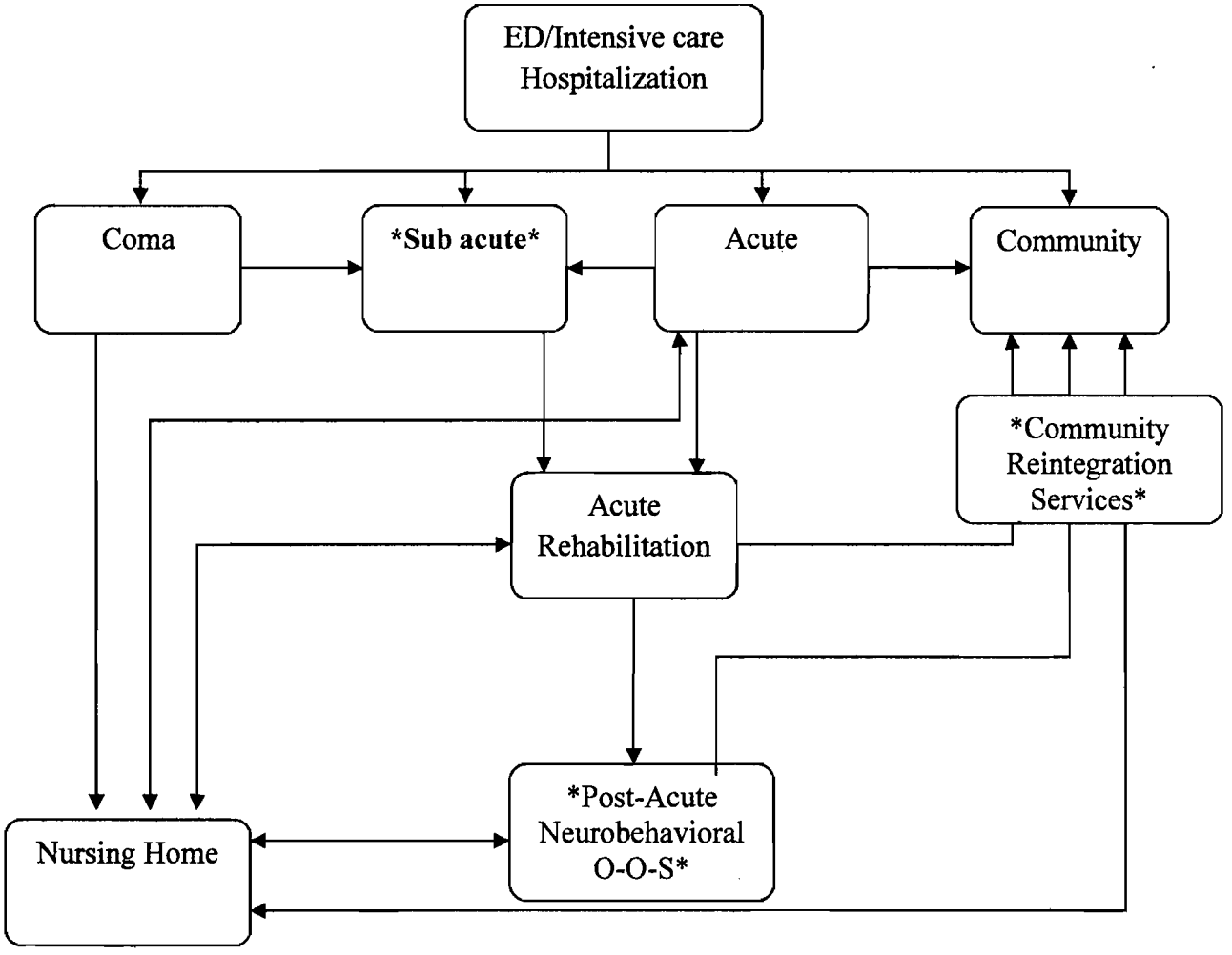
Current continuum of care for many with mild brain injury

1. Emergency Care: Not always provided and many times BI diagnosis is missed .
2. Symptoms recognized by person with mild BI or family or co-workers.
3. Visits to personal physician and specialists to determine cause of problems.
4. Problems often diagnosed as emotional, personality or mental illness, while the search for real cause of problem is discontinued.
   a. Person is labeled as being difficult or overly concerned about symptoms
   b. Person is left to own resources to discover what is wrong and to get help which can lead to loss of employment, insurance, and financial distress.

Better continuum of care

1. Mild BI is diagnosed at emergency room or physician office.
2. Patient, family, and employer are educated about mild brain injury.
3. Person with BI is referred to outpatient evaluations for severity of deficits and sent to appropriate therapies and support groups.
4. A plan of recovery is established which allows continued participation in life and work at highest tolerable level.
5. Vocational rehabilitation is provided if necessary.
6. Long term services and supports are provided in the community on an as-needed basis.

Indiana's continuum of care for moderate to severe brain injury



* Indicates no or limited services in Indiana*

Consumer & Family Recommendations for Brain Injury Services Study

Infrastructure

1. Investigate establishment of a surveillance program for brain injury similar to Indiana's fireworks' injury surveillance program. (Include all levels of acquired and traumatic BI.)
2. Establish a clear definition of brain injury as a chronic disease to be recognized by the state as needing appropriate lifetime services and supports.
3. Recommend structure and components of a statewide program by ISDH to educate family practitioners, chiropractors, eye doctors, coaches, school nurses and others to recognize the signs and symptoms of mild TBI and a state-wide contact number for referral for a comprehensive exam. (This could also be done by the state Office of Brain Injury.)
4. Establish cognitive rehabilitation as an approved service for both state plan and Medicaid waiver programs, and for private insurance.
5. Investigate establishing The Office of Brain Injury at the state level which will bring together providers state-wide and assist in development of an effective and responsive system of care for persons with brain injury. (This office should have access to a consumer/family board which would review programs and track effectiveness of programs and systems of care, and make recommendations to the Office, the Administration and the General Assembly.)
6. Examine potential for collaborating with the Department of Defense, Veterans Administration, American Legion, VFW and other military organizations to increase effectiveness of all programs related to brain injury acute and long term services and supports.
7. Investigate continued improvement and expansion of resource facilitation services currently being provided through the HRSA Grant to RHI.

Acute, Post Acute & Life Span Services

1. Evaluate the adequacy of brain injury services in Indiana
2. Evaluate efficacy of institutional care (nursing facilities, correctional facilities, mental health facilities) for persons under 65 with a primary diagnosis of brain injury.
3. Determine statewide number of minimally responsive beds needed for brain injury which specialize in medical stabilization and preparation of the person with brain injury for acute rehabilitation and high intensity therapies.
4. Establish neurobehavioral level of care which recognizes the cognitive and behavioral deficits that often result from brain injury. This legal level of care in Indiana which would allow waivers or state plan services to support intensive, residential or non-residential, post-acute rehabilitation services to complement/replace the need for many to use out of state residential facilities.
5. Investigate the establishment of an in-state, long term, post-acute, CARF-accredited rehabilitation program for persons with moderate to severe brain injury with satellite facilities throughout the state so people can be close to home and be ready to reintegrate

into their home community. (Care should be coordinated by a case manager who has weekly -- and timely -- team meetings of person with brain injury, primary care physician with BI training, physiatrist, all therapists, nursing and family. Coordination of care should continue beyond the in-facility stay.)

6. Determine appropriateness of nursing facility level of care as standard for the TBI Waiver. Could TBI Waiver services be elevated to a rehabilitative level of care?
7. Investigate the housing needs of people recovering from brain injury including independent living, supported housing, shared housing, group homes, assisted living and green houses.
    a. Green houses: self-contained buildings housing small numbers of residents and organized in a way intended to maximize normal living environments and routines, resident autonomy, sense of community, and quality of life. One or more small-houses can be licensed as a nursing home or part of a licensed nursing home. Green House® is a trademarked version of a small-house nursing home, developed in concept by William Thomas, founder of the Eden Alternative.
8. All brain injury treatment plans should set a high priority on establishing meaningful communication skills of people with brain injury. (Speech, if at all possible.)
    a. Periodic re-evaluations should be done to determine spontaneous improvement that would allow speech if given proper therapy.

Brain Injury Education

1. Investigate the need for additional education and training of health professionals and home care providers to meet the needs of a growing population with brain injury.
2. Recommend minimal number (percentage) of provider's staff that must be certified by the Academy of Certified Brain Injury Specialists (ACBIS) in order to be considered an approved brain injury program.
3. Recommend minimum training requirements in brain injury care for home care or nursing facility direct care workers (with appropriate increase in wages for those who successfully complete training.)
4. Design and designate provider(s) of education for families on how to prepare for the care of their loved one with BI after the family is gone. (Guardianships established by wills? State-wide organization that would be financial fiduciaries for persons with BI? Establishment of a court appointed advocate program for legal process?)
5. Recommend means to create state-wide educational materials on brain injury services and home care with a 1-800 hot line.
6. Investigate the creation of family-to-family, and/or peer-to-peer mentoring program to help people through the brain injury system of care.

Housing and Transportation

1. Make recommendations for expansion in the availability of safe, accessible housing within communities that have amenities and services nearby. (i.e. grocery and other shopping, theaters, medical clinic, transportation, etc.).
2. Require Apartment Locators to include up-to-date access and other pertinent information on apartments and other rentals available across various income levels. (Include information on the following: roll-in showers, ramps, minimum 36-inch interior doors, accessible parking, accessible recreation/common areas, senior housing that accepts persons with disabilities, secured facilities, nearest bus route, low-income and/or market-priced, etc.)
3. Establish a baseline for the number of priority low income Section 8 housing vouchers for younger persons with brain injuries and other disabilities.
4. Recommend necessary level of supported, cooperative housing for adults with brain injury to live independently of their childhood nuclear family.
5. Investigate and make recommendations regarding the availability and affordability of accessible transportation, especially in rural areas of the state.

Testimony

October, 2010

JOE CLYNE TBI December 19, 1999

Joe was an energetic young man with a bright future. In 1992, when he was 27, he partnered with two friends to start a 'courier' business. Joe was the operations manager & dispatcher. According to IBJ this service became the 10th largest courier service in Marion Co.- 13 full & several part time drivers. But Joe's life changed suddenly on Dec 19,1999.

Joe, as a pedestrian, was hit by a car. An accident that was not drivers fault, resulted in many broken bones & other injuries. The most severe was a traumatic brain injury (TBI).

After trauma centers, Joe spent 3 years in rehab facilities , mostly out of state. They were very good, organized, complete had well trained staff, entire team monitored progress of resident. Major problem for Joe was that they were located hundreds of miles from his home in Indianapolis. Also he had overheard from staff at Healthwin in South Bend that TBI's sent to CCS in Carbondale,IL never returned home. All he wanted to do was return to Indianapolis.

Joe's brain injury, like all others is unique. He can not speak, is quadriplegic (not spinal) however has all his cognitive skills. Therefore his treatments, therapies and rehab need to be unique. To deny any of these because they are not "usual & customary " is not logical.
Example: There are approximately 20 medications prescribed for use with TBI's yet not one of these has been approved by the FDA for use with TBI's because there is not a uniform control group to test.

Joe became severely contracted during his rehab and couldn't continue his physical therapy. His doctor recommended tendon surgery on hands, arms and legs. A doctor at RHI suggested a two week trial of " botox " instead.

This was denied by Medicaid as not 'usual & customary'. However they approved the tendon surgery without question even though it cost ten times as much, because it was considered ' usual & customary '.

Joe had the tendon surgery, needed a month for recovery, then another month due to hemorrhaging of internal stitches before resuming therapy, which never progressed well after that. We often wonder how Joe would be today with the ' botox ' treatment.

Joe spent seven years in a nursing home in Indianapolis.
As mentioned before all BI's are unique and nursing home staff are not trained for the unique care they require. For example caregivers need to recognize the difference between a seizure and muscle contractions. Although unique most BI's are slow at communications yet impatient. Staff also should be trained in the use of equipment like special lifts, Joe worried every day that an untrained staff would put him to bed causing pain & sometimes injury.

One thing that would help care in nursing homes is continuity of care: that is having the same caregivers care for the resident all the time. They would get to know the residents uniqueness, minimize need for special training and improve care

One year ago Joe was approved for a Medicaid waiver and transferred to a supported living home, operated by St Vincent New Hope. It houses four BI men, separate bedrooms, a shower every day, each resident gets one day a week out with a staff member to a place of their choice also transportation to therapy and doctors is provided. Continuity of care is much better than nursing homes, however with more staff they could improve the amount of interaction with residents.

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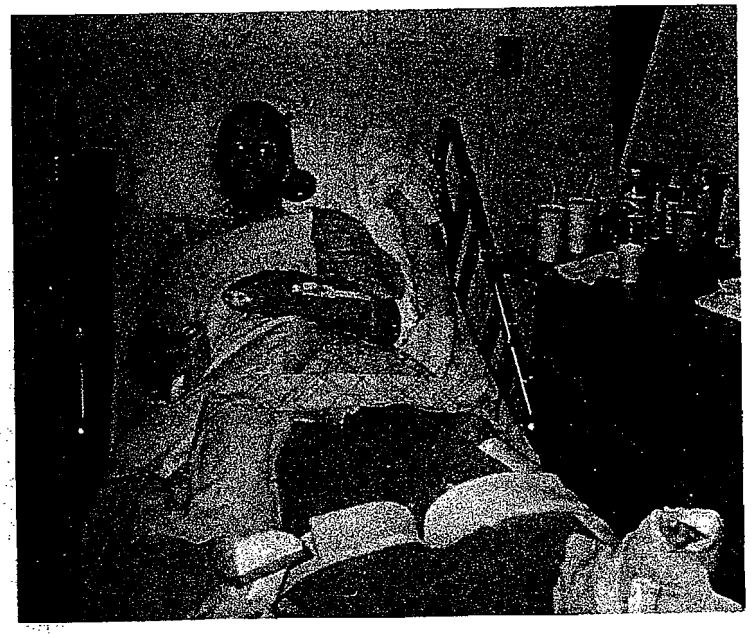
Joe Clyne

1999

Wishard Trauma

Southbend, IN



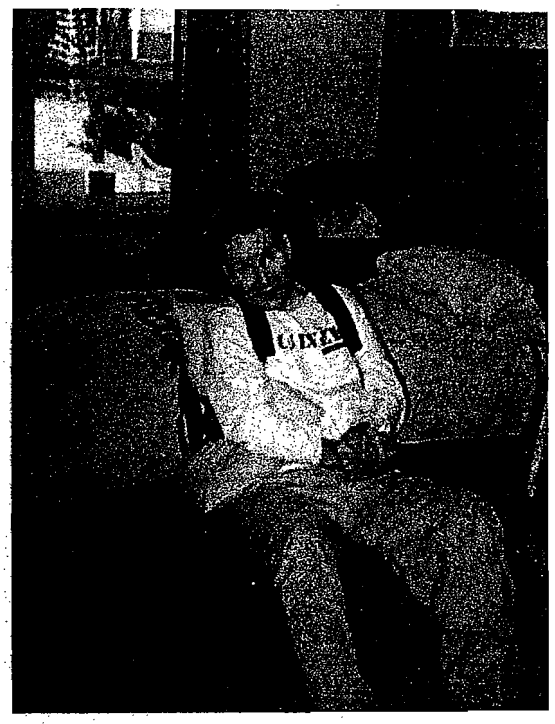
Tendon Surgery

Chicago, IL

Rehab

Carbondale, IL

Therapy



Beverly Nursing Home, Indianapolis

Supportive Living - St. Vincent New Hope, Indianapolis

Maria Martino's Testimony

In 2004 I was working on my Ph.D. and teaching at IU and had plans to combine my masters in recreation therapy with my PhD in Applied Health Science with a major in Family Studies and Health Sciences. I wanted to help children, adolescents and their families after a physical injury or physical disability.

My life began to change in 2004 when I was in a rear end car accident in Bloomington while I was going to visit my dad who had terminal cancer. I was diagnosed with a concussion (mild TBI) and injuries to the left leg, hip and shoulder. I received some water therapy for the leg, hip and shoulder. I decided to take a leave from my teaching and studies and move home to Kokomo because of my dad's illness and because I was also having headaches, dizziness and visual problems. I did not receive treatment for these issues at the time. Because I no longer was employed, I qualified for Medicaid coverage.

In 2005, after my dad's death, I was in a head-on collision as a passenger, which ultimately involved several cars. I sustained another head injury, a fractured hip, and several other physical and neurological injuries. My Mom could not care for me because I needed skilled care and complex rehabilitation. The local hospitals were full or refused to admit me for rehabilitation because I was on Medicaid. I was sent to a nursing home for recovery and rehabilitation. I also had to have excess fluid drained from my brain during my recovery. In spite of all this, I managed to return to my Ph.D. studies in Bloomington. However I had difficulty teaching and could not grade papers. I was having problems reading, understanding what others were saying and driving. I was having difficulties with my balance and vision and my speech was much slower than it used to be. I was also having neck and low back pain. My problems were interfering with my ability to be an effective teacher and student so I again took leave and returned home for what I hoped to be a slower, but complete recovery.

During the next several years I struggled to get appropriate diagnosis and treatment for many of the symptoms that were now interfering with my life. I was disorganized and could not explain my symptoms well. I couldn't wash my hair because I couldn't raise my arms above my head, my

temper often flared, I often couldn't find words when speaking with people, my balance was off, my vision was still problematic. My family and I did not understand that many of these problems were an effect of having had two brain injuries. Everyone thought that I looked fine and offered little support and no guidance about what I should do. I seemed to be stumbling through the health care (Medicaid) system trying to get help and often being denied treatment. Doctors who did not understand brain injury even sometimes labeled me a malingerer and psychotic. And at the time, I did not know that this was the cause of many of my problems.

I have eventually been able to find physicians who understand my symptoms and have received appropriate diagnosis and some treatments for my problems. Here are several of my diagnoses:
Mild to moderate brain injury, with coup-contra coup damage (similar to shaken baby syndrome)
Damage to these parts of the brain:

Occipital region of the brain - that part which controls visual functions

The motor cortex – involves movement

Hypothalamus - controls metabolism and body temperature

Trigeminal nerve damage – worst pain that anyone could imagine, involves one side of the face.

Fluid on the brain (hydrocephalus)

Nerve root damage in my neck and lower spine

Excess fatigue

Several physical problems would have been recognized sooner had I had physicians that understood that I had trouble organizing my thoughts and explaining my symptoms.

Because of missed diagnosis, delayed diagnosis, and my continued struggles to not give up in obtaining the help I knew I needed I was then put on Medicaid's lock-in list. This further delayed my finding appropriate treatment. Medicaid has also delayed my getting appropriate medications.

Now four years after my second accident, I am still on medical leave from I.U., still living with my mom, and not driving much. I am still struggling with Medicaid now that I've managed to find doctors that understand brain injury as well as my many physical injuries. I have found that

Medicaid will pay for surgery but often not the physical therapy afterwards. I have recently been told by my doctor that I will need therapy for the rest of my life because of delayed diagnosis and delayed or no appropriate treatment in a timely manner. Each month I am anxiously wait to see if Medicaid will allow the pharmacy to fill my prescriptions. I have been without medicines for 3 months in a row and I still have severe damaged nerve pain and I need my regular asthma medications.

All I have ever wanted was to finish my PhD and to get on with my life. I plan to return to Bloomington in Jan. 2011 to resume that dream. I don't know how long it will take me or how or if I can manage or overcome my brain injury. However I feel that if my brain injury had been recognized and validated by my physicians and if I could have had help in finding appropriate diagnosis and treatment that I would already have my degree, have a good job and be off Medicaid.

How many other Hoosiers are struggling with brain injury that could be back at work? We need a system that works. The one we have does not.

Maria Martino
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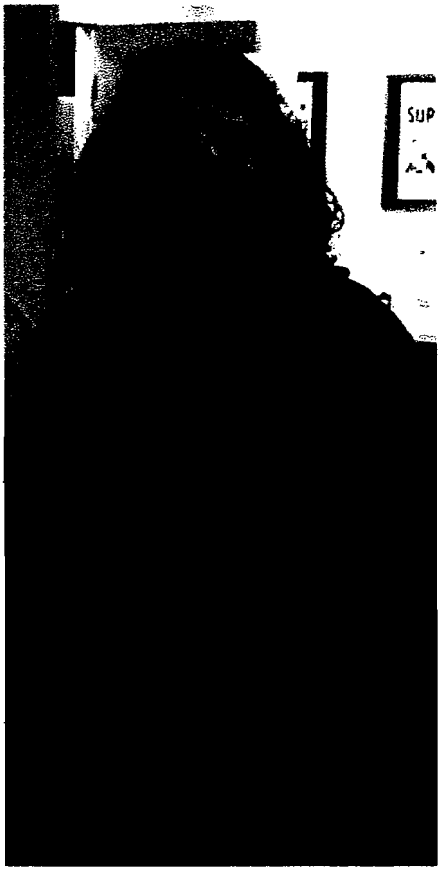
Prior to brain injury

After brain injury



Nancy Knarr's Testimony

I am a 10-year survivor of anoxia — a brain injury caused by lack of oxygen to the brain. My journey has been long and hard, as this brain injury took away my career, my life's savings, and my cognitive and physical skills.

My degree from Indiana University in General Studies had an emphasis in math and science, including the medical sciences. It is my degree and my return to Indiana that connected me to Dr. Jill Bolte Taylor, a neuro-anatomist who survived a killer stroke. Her book, ***My Stroke of Insight***, tells her story. It is Dr. Taylor who connected June Holt with me in January 2008.

June, like me, was looking for answers where there were NONE. At the end of June's first e-mail to me, she wrote a quote by Margaret Mead: "*Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has.*" And, although we may be a small group of people here testifying before you today, *you* have the opportunity to approve the establishment of a commission on brain injury services.

Today, I'm asking each and every one of you to help in establishing that commission because there is a NEED to identify services and there is a NEED to identify where those services fall short.

Since Indiana has a Directory of Organizations and Services for Deaf and Hard of Hearing People in Indiana, why not establish a Commission on Brain Injury Services? Why don't we include brain injuries in Indiana's Division of Disability and Rehabilitation Services? What types of assistive technology or communications are there to help Hoosiers with brain injuries? The deaf have a relay network. Might there be a relay network for brain injury survivors?

I'm my own caregiver. To whom and where do I go? Families often are the ones to become the caregivers and providers, and they are also typically ill equipped, as I am, to deal with the complexity of issues associated with brain injury.

Who can help with the assistance of medical bills? Transportation and housing are also issues that need to be addressed. What is available to a person who owns a home or who wants to own a home?

Indiana has a Medicaid TBI (Traumatic Brain Injury) waiver but does not address ABI (Acquired Brain Injury) waivers. I am an ABI survivor. I am a **BI survivor**. And I should *not* be discriminated against because of a category. A brain injury is a brain injury.

I am on Medicare, but because I do not fall in to the low-income category I am ineligible for Medicaid. As I just stated, Medicaid has services for TBI but not ABI. Where does a person like me go for help?

Truly, there is no place that I am aware of, for me to get help. So, basically, I have to go "fishing". Ever have a brain injury and have to go fishing with the automated telephone system? How many of you get frustrated with an automated telephone system? In my early days, I would

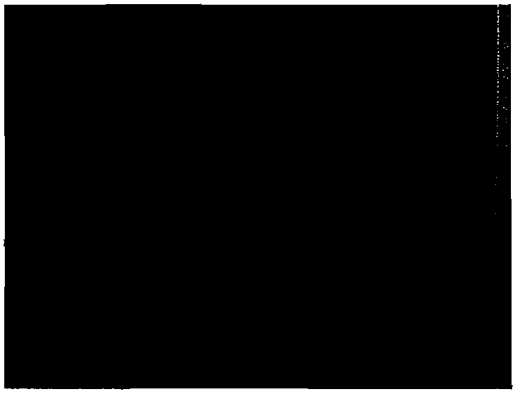
have to call a number 30 or more times. Trust me, it was not fun. At the moment, I have 10 years of medical bills to submit for reimbursement. Remember, I'm at second-grade math, now. Where do I go?

As I stated previously, I lost my life's savings, and now that I don't work, I can't contribute to a 401K. Where and how can a person with a brain injury learn to save for their future?

A Commission on Brain Injury Services could address all these issues and many, many more! Today, as a United States Marine Corps veteran and as an individual with a brain injury, I stand before you, asking you to establish a Commission on Brain Injury Services for the residents of our great state of Indiana.

Thank you.

Nancy Knarr
Nashville, Indiana



Testimony on behalf of Debra Elmore

Debra S. Elmore, age 53, is currently living in a geriatric facility in the Indianapolis area. She has a brain injury and is in the advanced stages of Multiple Sclerosis. She is a triplegic, having the use of only her right arm and hand. She receives little stimulation from staff though she communicates at a high level with some short term memory loss.

Debra was graduated from North Central High School in June 1976. Her chosen career was the printing business and over time was promoted to the operation of a large color printing press. Due to the onset of physical disabilities, as the MS progressed, Debra was forced to accept a disability retirement after 15 years of service.

Debra continued to live in an apartment subsisting on Social Security Disability and a minimal pension. She was ambulatory and could operate an automobile. She fell often due to the deteriorating condition of her legs. On August 4, 2004 she fell twice in succession while visiting a friend at Community Hospital (East). She was examined in the ER and transferred to Methodist Hospital. She underwent surgical intervention (two craniotomies) to arrest the bleeding from a subdural hematoma. We were given little hope that she would survive the surgery and that the consequences would be grave.

Following 30 days in Methodist Hospital, Debra was transferred to University Heights nursing home on South County Line Road. After about a year of minimal improvement she was sent to the Center for Comprehensive Services, Carbondale, Illinois, with a plan for semi-independent living. This was very inconvenient for the family due to the physical distance and after eight months of structured therapy at a cost of approximately $17,000 per month she was returned to Indianapolis, and was admitted to Beverly Nursing Home (now Golden Living Center). She returned non-ambulatory, but was able to transfer herself from chair to bed, etc. for a short time.

For many months Golden Living Center was considered substandard by the Indiana Dept. of Health. During the last four years there has been at least 10 administrators at this nursing home. It was our only choice at the time. There was no search assistance.

Debbie continues to receive minimal physical therapy and after a time has lost her ability to transfer and operate a wheelchair. Her world is shrinking as she is confined either to bed, wheelchair or gurney for transportation. She has little stimulating contact except for family. She receives very minimal mental health care and no religious contacts.

Over the past four years I have been in contact with most of the agencies that exist to provide care and assistance to those with MS and brain injury. Debbie was recently considered eligible for a Medicaid waiver to move into a residential setting, but was later refused due to the control of some of her medications. It appears that there is no suitable abode for Debra. A very unfavorable status for her.

There is an obvious lack of appropriate care within the state for Debra. We believe that there are may persons with brain injury placed out of state or far from home due to the lack of facilities. Experience indicates that a nursing home is not an appropriate placement for one with advanced stages of MS or a brain injury, particularly if the person is relatively young and whose cognitive functions are basically intact. Caretakers are not adequately trained.

Testimony on behalf of Debra Elmore

All too often in Indiana a person with a brain injury leaves the acute care facility and drops off the radar of quality care providers. Many, as with Debra, spend years in a geriatric facility receiving care for the aging population.

As with our returning military personnel, our children do not ask for the brain injury they received. We know that the cause and subsequent effect is a negative life changing experience. Brain injury is a chronic condition and Indiana needs to find ways to provide the services that will be needed by the injured as well as the family.

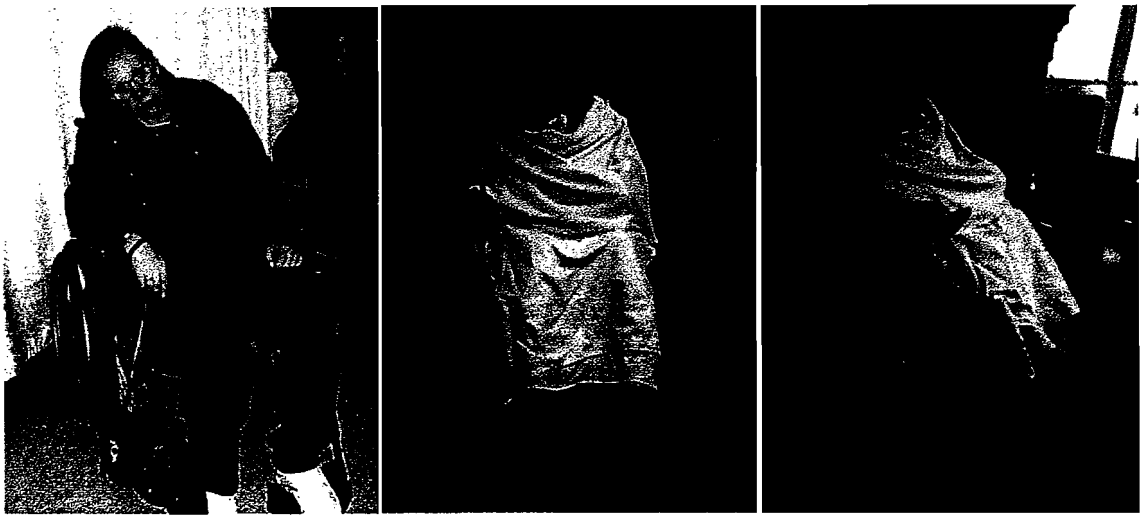
Today we are asking the members of the Health Finance Committee to decide that it is time to appropriately care for Hoosiers with brain injuries. Appropriate care must be provided in order that the brain injured person receives the medical care and related services to support recovery and the sustainability to live at their highest level of functioning. These folks deserve loving integration into the community in a safe and appropriate place to live and receive the necessary care. That would not be in a geriatric care facility. The level of care required cannot be found there.

Please appoint a study commission made up of legislators, appropriate state agency staff, people with brain injuries and family members to thoroughly study the need for services. This commission should look at the disparity of available services throughout the state and develop a comprehensive plan to address the obvious needs of all individuals with various levels of brain injury in a holistic, comprehensive and fiscally sound manner.

Respectfully,

David H. Elmore

Whiteland, Indiana



Joe Holt was a very sociable guy who loved to be a waiter. He liked meeting new people all day and impressing them with his skill of remembering everyone's order correctly and not writing it down. But in the span of a few hours on November 18, 2004 my 25 year old son, Joe, went from a healthy, functioning young adult with a full life to someone fighting for his life in the Neuro Critical Care Unit of Methodist Hospital. A previously undiscovered brain tumor had caused massive bleeding. Despite excellent care, two surgeries and several weeks in the hospital Joe still remained in a coma. We were handed a list of nursing homes to call and were told to get busy and find one. This was extremely difficult because Joe was still just 25, and in the coma with both a tracheotomy tube and a gastric feeding tube. The discharge planner at the hospital told me to put Joe in a nursing home, go see him for a few minutes a week and to get on with my life.

Over the next two years, Joe would be in five nursing homes and receive radiation therapy for his still malignant tumor. The first nursing facility refused to give Joe passive range of motion therapy twice a day, disallowed adult diapers for him. The staff didn't know how to properly care for his breathing or gastric tubes or his teeth and bleeding gums. The second nursing facility helped Joe to come out of his coma and to begin therapy. However, when Joe left this nursing facility to go to Hook Rehab for intensive services, the therapists told us not to come back. After receiving a month of more intense therapy at Hook, Joe was admitted into a third nursing facility. Joe struggled with therapy that was inappropriate and did not address his weaknesses. His speech therapy was very effective but in physical therapy he was put in parallel bars and expected to walk although they had not done anything to help him regain leg strength or his balance. Occupational therapists never came to his room to help him to learn how to use the toilet or to get in and out of bed. His CNA's were not told to do passive range of motion exercises in the evening on his right foot and they were not told to put on the orthotic device every night to keep his foot from turning in-both ordered in his files. There seemed to be little communication between the therapists and the nursing and direct care staff. None of the staff knew what to expect of this young adult with brain injury and as a result treated him the same as their older patients. They did not challenge him to be independent or to become stronger.

Joe was temporarily transferred to a Bloomington nursing facility while getting proton beam radiation therapy for his brain tumor. He received good speech, physical, and occupational therapy there, but was sent back to Indianapolis when his radiation therapy was finished.

Because he showed so much improvement from being in Bloomington the nursing home director and therapy supervisor in Indianapolis refused to continue his therapy. In their words "he is good enough to live in a nursing home and we don't have to provide him with any more therapy; however if you want to pay privately for more therapy we will provide it".

We filed a complaint with the state and contacted the ombudsman who agreed with us that more therapy would allow Joe to improve. The nursing home still refused to give him therapy and dared us to find some place that would.

With the help of friends, we found another nursing home that promised to increase Joe's strength. They did that and also worked with him with his ADLs, something none of the other nursing homes had done. Joe became much stronger, but needed even more therapy. This time the

therapists at the nursing facility said they said they were not equipped to give him the intensive therapy he needed, so we brought him home to get outpatient therapy which we hoped would be more effective. We were lucky to get Joe on an A & D waiver at that time.

We knew that Joe needed more therapy than could be provided in the outpatient setting and had applied for him to go to the Carbondale Center for Comprehensive Services (CCS) to receive the care he needed. We applied the summer of 2006 and Joe was accepted by CCS on August 20 that year. However the state denied Joe permission to go to the Carbondale Center because he wasn't violent. We knew Joe needed that level of therapy and we sued the state for access to CCS and won.

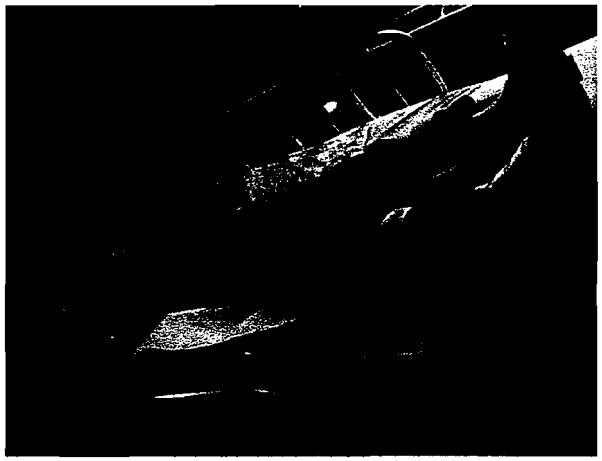
Joe received services in Carbondale for two years and was residing in a studio apartment with supports by the time he left. He was determined to stay at least at the same level of independence when he returned to Indiana. In other words, he did not want to live with his parents again or go into a group home. I had started searching for apartments for Joe about 6 months after he went to Carbondale. Only by a lucky chance meeting was I able to locate a subsidized, safe apartment with a roll-in shower. Joe now lives in a building for low income seniors and gets around in his manual wheelchair. He receives around two hours of attendant care a day.

Joe's life is very lonely now, his Indianapolis friends have abandoned him. He keeps in contact with old friends on the Internet, he sees doctors, therapists (when he is allowed therapy) and his parents. There are no programs available that will help him reconnect to the community so he spends his days watching movies and TV and making an agenda about what he and the aide need to do for the time they are together. He is very lonely and is currently showing some alarming signs of his isolation.

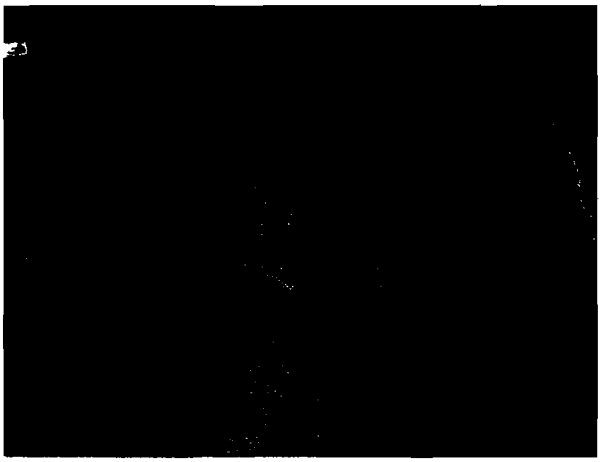
I am a strong advocate for Joe. I didn't listen to the discharge planner's suggestion of placing him in a nursing facility and getting on with my life. I didn't agree or accept the nursing home director's proclamation that Joe was good enough to live in a nursing home and would not get better. I didn't accept the state's denial of Joe going to the Center for Comprehensive Services. And in case you haven't guessed I am not giving up now as Joe struggles to get a life back in the community.

Joe Holt
October 2004

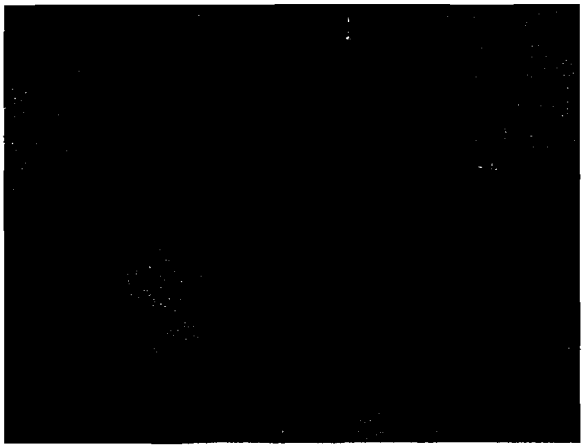
June Holt, Indianapolis
juneholt@comcast.net



February 2005



Radiation therapy- Jan. 2006



CCS in Carbondale - 2007

July 2010 - Joe Holt in his own apartment

Summary

First, let me just emphasize that an injury to the brain that has occurred after birth is an "acquired brain injury" (ABI). The most common incidence of brain injury is Traumatic Brain Injury (TBI), which is an insult to the brain caused by an external physical force such as a fall, a car crash, an assault as in shaken baby syndrome or a sports concussion.

Brain injury is both a disease causative and a disease accelerant and can result in a wide range of functional changes affecting thinking, memory, sensation, emotions, language, vision, hearing, taste, behavior, balance and motor skills. It can also cause epilepsy, increase risk for conditions such as Alzheimer's disease, Parkinson's disease and other brain disorders. The impact of mild, moderate, or severe. brain injury on the individual and families can be devastating and can last a lifetime.

Today you have heard from parent advocates and self-advocates who have found ways to connect to supportive people. You can only imagine what happens to people with brain injury who don't have an advocate - especially an advocate that has the wonderful supportive network that we have. We don't want anyone to have to go through what we have had to do just to get the therapy and services that are needed.

All too often in Indiana once a brain injured person leaves the acute care hospital, they often drop off the radar of providers. Many survivors end up spending years in nursing homes receiving treatment that was intended for our aging population or, if they have had a mild injury, they end up on the streets or in prison or in a prolonged state of limbo, wanting to get their lives back. We don't really know where many of these people are because we have never kept track! These survivors need to be counted and to be given a chance in life.

Our children, spouses and friends don't ask for these injuries. Our soldiers know that brain injury is the most likely injury they will receive in Iraq. These young men and women will not be in the service forever, but the effects of their brain injuries probably will last for the rest of their lives. Brain injury is a chronic condition and Indiana needs to find ways to provide the services that will be needed by brain injury survivors and their families over their lifetimes.

Today we are asking the members of the Health Care Finance Commission to decide that it is time Hoosiers with brain injuries and their families get the medical care, therapies and other services and supports they need to recover to and sustain their highest functional level. We need to find ways to integrate people with brain injury back into the community. They need to find new friends, something useful to do and a safe and appropriate place to live and to know support is there when they need it.

Please appoint a two-year study committee made up of legislators, appropriate state agency staff, people with brain injury and their family members to thoroughly study the types and levels of brain injury services available to Hoosiers. This committee should look at the disparity of available services throughout the state and develop a comprehensive plan to address the needs of all individuals with all levels of brain injury in a holistic, comprehensive and fiscally sound manner.

Other States

Brain Injury Services: What neighboring states are doing.

Ohio

- In 1990, Ohio legislation created the Ohio Head Injury Advisory Council (now known as the Brain Injury Advisory Committee) as the state-level, intergovernmental planning and coordinating body. The mission of the new organization was complementary to the mission of the Brain Injury Association of Ohio—to improve services to persons with brain injury through development of a comprehensive, coordinated delivery system and through prevention efforts.
- Ohio's first statewide TBI needs/resources assessment was completed in 1992
- Ohio has a legally mandated trauma registry, which is not used for follow-up or service assistance. Confidentiality issues reportedly pose challenges to the state's use of patient-level data. The state relies on CDC information about TBI and does not have a CDC-funded surveillance program.
- With assistance from the Ohio State University **TBI Model System of Care** funded by NIDRR, Ohio has developed a comprehensive information and referral database of services available statewide. The TBI Model System has provided data and information analysis in support of TBI services delivery in the state.
- The ongoing partnership between Ohio's Brain Injury Advisory Committee and the Brain Injury Association of Ohio led to development of "The Ohio Plan: Building Ramps to the Human Service System for People with Brain Injury"—with a vision for a comprehensive model service coordination continuum and a strategy to further develop the model continuum. The system's three components are as follows: (1) help line and information clearinghouse; (2) community support network; and (3) individualized resource facilitation services.
- Ohio uses the community support network model outlined in "The Ohio Plan" to coordinate services for persons with TBI and their families in the four service areas where community support networks have been established
- There was no single point of entry. Service coordination in Ohio is reportedly "haphazard," depending on which agency provides service, what benefits are provided, which door one comes through. Generic Medicaid waivers are available for individuals with TBI who meet eligibility requirements.

Brain Injury Services: What neighboring states are doing.

Illinois

- Illinois' statewide TBI advisory board, located within the Illinois Department of Human Services, was established by statute in 1994. Its members include 28% agency staff; 28% consumers/family; 44% others.. The board meets quarterly and is engaged in collaboration, education, funding, decision, information, referral, planning, and development of a statewide TBI action plan for both TBI and spinal cord injury survivors.
- Illinois has a trauma registry and a TBI registry. A general statute mandates reporting to the Department of Public Health, but trauma centers are most likely to comply. The Department of Public Health provides data, without identifiers, to the statewide TBI advisory board to use for planning. There is no formal follow-up with families/consumers.
- The Rehabilitation Institute of Chicago (RIC) was designated by the National Institute of Disability and Rehabilitation Research (NIDRR) as a *Traumatic Brain Injury Model System (TBIMS) in 2008*. The model system is designed to establish a coordinated system of care for people with TBI, including pre-hospital care, emergency care, acute care, long-term acute care, intensive rehabilitation, and community care. All of this is provided by a team of health professionals working to maximize the social integration, health, function, employment and independent living of individuals with disabilities related to TBI.
- The Midwest Brain Injury Clubhouse is located in Chicago and helps brain injury victims regain living skills. Participants in the program work with staff to complete daily work in the following units: business, employment, community integration, and health and wellness. In addition to brain injury victims, the Clubhouse works with stroke victims. For some participants, the Clubhouse is the last step before employment or independent living.
- Post Acute neurorehabilitation at Center for Comprehensive Services in Carbondale has many participants from Indiana and surrounding states.

Brain Injury Services: What neighboring states are doing.

Kentucky

- Kentucky's statewide TBI advisory board, located in the Cabinet for Health Services, was established BY statute in 1998 in conjunction with the passage of Kentucky's trust fund legislation. The board's nine members include: 22% agency staff; 33% consumers/Family; 45% others (secretary of cabinet of health services, state epidemiologist, Brain Injury Association of Kentucky, neurosurgeon, neuropsychologist, rehabilitation specialist, social worker, three consumers/family). It has an ad hoc committee to address issues broader than trust fund management and meets as needed but not less frequently than quarterly. The TBI Board is mandated to implement a registry of individuals who incur brain injuries.
- The Traumatic Brain Injury Trust Fund was created by the Kentucky General Assembly in 1998. The trust fund was established to provide flexible funding and support to those with brain injuries and also provides funding for the TBI registry, and administrative costs. The Brain Injury Trust Fund and Benefit Management Program is a unique service for individuals—both children and adults—with brain injury.
- A legislative task force was established in Kentucky 2002 to address need for long-term residential care, decriminalization of brain injury, and long-term case management. Legislation expanded trust fund capabilities by including court costs.
- Kentucky was among the first states in the nation to undertake a prevalence study of brain injury by surveying its citizens. The findings from this study published in 2004 suggest that brain injury is more prevalent than expected. http://mhmr.ky.gov/mhsas/HTML/PDFs/TBI%20Prevalence%20Study.pdf
- Kentucky has two Medicaid waivers for brain injury services
  1. The Acquired Brain Injury (ABI) Waiver program provides intensive services and supports to adults with acquired brain injuries working to re-enter community life. Services are provided exclusively in community settings.
  2. The Acquired Brain Injury Long Term Care Waiver program provides an alternative to institutional care for individuals that have reached a plateau in their rehabilitation level and require maintenance services to avoid institutionalization and to live safely in the community.

Brain Injury Services: What neighboring states are doing.

Michigan

- Michigan's statewide TBI advisory board, located in the Department of Community Health, was established in 1999. Its 54 members are appointed by the lead state agency for TBI. They include 33% agency staff; 13% consumers/family; 54% others. The board has five committees that meet monthly, and the full board meets twice per year. The board has produced brochures for consumers and professionals, and a resource guide, and a website.
- Michigan is developing strategies to maximize the effective and efficient use of public funds, promote public-private partnerships, improve service coordination, and ensure TBI services and supports are comprehensive and support individually determined outcomes to the extent possible.
- In Michigan, about 30% of traumatic brain injuries are caused by car crashes. Michigan has the most comprehensive no-fault automobile insurance system in the nation. The services provided to persons with TBI through automobile insurance companies are typically very good and comprehensive
- Michigan conducted its first statewide TBI needs and resources assessment in 1999
- 2004: The Michigan Department of Community Health (MDCH) released the findings of a five-year project focusing on how to best address the needs of the 200,000 Michigan citizens that are living with a disability due to Traumatic Brain Injury (TBI). The TBI Project and its findings in the report called, "Addressing Michigan's Public Service Gaps for Persons with Traumatic Brain Injury," is the first time that such extensive data investigations had ever been carried out by any state. This work has informed all subsequent TBI efforts in Michigan, including: training and outreach, screening and identification.http://michigan.gov/documents/TBI_Report_2004_107941_7.pdf
- Southeastern Michigan Traumatic Brain Injury System (SEMTBIS) is a federally funded TBI "model system" (TBIMS) of care for individuals who sustain a traumatic brain injury and is a joint effort between Rehabilitation Institute of Michigan, Wayne State University's School of Medicine, and local acute care hospitals. The primary purpose of the SEMTBIS is to expand and enhance Michigan's comprehensive, multidisciplinary model system of care, largely through involvement in innovative research activities aimed to improve outcomes for persons with TBI and their families

Brain Injury Services: What other states are doing.

Colorado

- Colorado created a Medicaid TBI/acquired brain injury (ABI) waiver in 1995 with two levels of care: (1) rehabilitation-level care; and (2) nursing facility-level care.
- The Rocky Mountain Regional Brain Injury System (RMRBIS), centered at Craig Hospital, was designated as a TBI Model System in 1998. RMRBIS includes all three Level I trauma centers, a Level II trauma center, and three long-term acute care facilities in the Denver Metro area, to provide a comprehensive interdisciplinary specialty system of TBI care for Colorado and the surrounding area. RMRBIS has set ambitious outcome-oriented goals to advance knowledge of (1) interventions to improve attention after TBI, and (2) interventions to improve health and wellness after TBI.
  http://www.craighospital.org/research/Abstracts/TBIMS.asp
- 1989 Colorado is one of the original four states that developed The Traumatic Brain Injury (TBI) Surveillance System through CDC.
- 2000 Executive Order on TBI established a work group to coordinate activities of state agencies, provide support to Advisory Board on BI, gather and analyze data regarding needs and resources for persons with TBI, develop inventory of current services, facilitate requests for future funding to support needs of TBI population.
- In 2002, Colorado established a TBI trust fund and a 13-member trust fund board. Colorado's TBI trust fund legislation imposes surcharges for certain traffic convictions, and requires that 5 percent of funds be used to educate TBI survivors, parents, educators, and nonmedical professionals in identifying TBI and assisting persons to seek proper medical care; 65 percent be used for services; and 30 percent be used for research related to the treatment and understanding of TBI. The TBI trust fund provides an estimated $1.5 million annually.
- 2005 Traumatic Brain Injury Medical Treatment Guidelines established by rule by Colorado Department of Labor and Employment (Recommended as treatment model by 2008 national Brain Injury Consensus Conference in their Barriers and Recommendations Report).
- 2008 Governor's Executive Order for TBI Work Group to develop a coordinated plan and response to address the needs of Coloradans who have experienced a TBI. This EO changed the mission and scope of the 2002 EO.
- Executive Order on Traumatic Brain Injury Final Report presented to Governor Ritter on December 1, 2009.

Needs studies: other states

National Barriers Recommendations

Addressing Michigan's Public Service Gaps for Persons with Traumatic Brain Injury

September 2004

Report of the MDCH TBI Project

EXECUTIVE SUMMARY

A brain injury is any injury that results in brain cell death and loss of function. A *traumatic* brain injury (TBI) is an injury to the head caused by blunt or penetrating trauma or from acceleration-deceleration forces, such as from a fall, car crash, or being shaken (Thurman et al., 1994). TBI may or may not be combined with loss of consciousness, an open wound, or skull fracture. TBI is complex and unpredictable in its outcomes. Both mild and severe TBI can result in lifelong impairments – requiring long term care services.

Within the public sector, the State of Michigan has almost no specialized services for individuals with TBI. Rather, individuals with TBI may be served through local agencies and state and federal programs that focus on physical health, behavioral health, and other social services – each with their own referral processes, scope of services, eligibility rules, and payment sources. This can be confusing for survivors, caregivers, family members, and even agency workers to navigate or otherwise assist individuals to obtain needed services.

In order to better understand these diverse and complex systems, improve access by sharing what was learned, and improve public services for individuals with TBI, the Michigan Department of Community Health (MDCH) applied for and received a TBI Planning Grant in 1998 and a TBI Implementation Grant in 2000 from the federal Health Resources and Services Administration – Maternal and Child Health Bureau. For the past five years, the grants have funded a study of the state's TBI needs and how services could be improved. The state projects also developed and tested training materials, analyzed data, provided outreach, and set up ways to get people needed services.

With use of these funds, **Michigan** has become **the recognized leader** in data linkage and analysis regarding incidence and cost of TBI (Connors, 2004). The **non-partisan, multiple-agency, consumer-involved, data-driven efforts** of this project have culminated in the compilation of this report.

This report, *Addressing Michigan's Public Service Gaps for Persons with Traumatic Brain Injury*, contains data on:

- Incidence and risk factors of TBI;
- Medicaid Fee for Service, Medicaid Health Plan, Home Help, and Community Mental Health service use;
- Provider feedback on access to public services by individuals with TBI;
- Case studies of individuals with TBI; and
- Evaluation of piloted efforts to improve service delivery.

Most importantly, policy recommendations are made to address service gaps for this population.

FINDINGS

A. *Every year about 10,600 serious traumatic brain injuries occur to Michigan residents.*

Of this number, TBI contributes to almost 1,600 deaths and more than 9,000 TBI-related hospitalizations that do not result in death. Reliable data are not available to count the number of traumatic brain injuries that are not treated in hospitals. Not everyone who experiences a TBI will suffer long-term harm, but many will. The Centers for Disease Control and Prevention estimate that 2% of Americans are living with a disability due to TBI – approximately 200,000 Michigan residents.

B. *Annually, Michigan Medicaid covers nearly 1,500 TBI-related hospitalizations.*

Overall, 67,000 people received treatment services for TBI (including an annual average of 1,500 hospitalizations, other clinical care, and nursing home care among others) through the Michigan Medicaid Fee for Service or a Medicaid Health Plan during the four year period October 1, 1998 – September 30, 2002. Of these people, about 3,500 individuals also received Home Help personal care services, and over 12,000 received services from the Community Mental Health Services Programs during the same timeframe.

C. *Michigan Medicaid Fee for Service component pays at least $11 million dollars a year for TBI-related services.*

The study identified this amount based on services provided during the fiscal years 1999-2002. Actual costs to the State from TBI are much greater because those clients whose care was covered by the Michigan Medicaid Fee for Service program account for only one third of all identified cases of TBI – the rest are enrolled in a (managed care) Medicaid Health Plan. This $11 million in costs only covers services that are specifically identified as resulting from the diagnosis of TBI. Actual direct treatment services related to TBI are believed to be even greater and, if counted, would add significantly to the costs identified. In addition to Medicaid Fee for Service, $9 million was paid for Home Help personal care services for individuals with TBI during FY2002.

D. *There are gaps in public services for individuals with TBI.*

Over the course of the project, key features of a comprehensive service system for individuals with TBI have been identified as:

- ✓ Service providers trained and knowledgeable about brain injury
- ✓ A screening method to identify people suffering from TBI-related injury so they do not remain misdiagnosed or undiagnosed
- ✓ A rehabilitation program that helps people with TBI recover lost abilities to the greatest extent possible, and that helps them develop a way of dealing with lost abilities

- ✓ Coordination and planning of services to help people with TBI identify their service needs, develop a person-centered care plan, and access and coordinate needed public services
- ✓ Appropriate residential placement so those with severe disabilities are not forced into nursing homes
- ✓ Community living supports so that those with less severe disabilities can live and work independently
- ✓ Assistive technology to support function and independence – especially cognitive aids such as timers, tape recorders, and planners
- ✓ Personal care to provide supervision, reminding, or hands-on assistance in meeting basic needs (cooking, eating, and personal hygiene among others)
- ✓ Vocational rehabilitation to assist with finding and maintaining employment over the long term
- ✓ Counseling and behavioral management to treat occasional symptoms that may reoccur

Coordination of services, appropriate residential placement, community living supports, counseling, and behavioral modification services are all **available to some populations with disabilities** in Michigan. These populations may include people who qualify for services from Community Mental Health Services Programs and individuals able to access Michigan's Medicaid Home and Community Based Waiver for Elderly and Disabled. **Many individuals with TBI do not have access to these programs** because they do not meet the legal requirements of having a developmental disability or serious mental illness (populations served by Community Mental Health Services Programs). In addition, there are only 800-1000 yearly openings statewide in Michigan's Medicaid Home and Community Based Waiver for Elderly and Disabled. The limited number of openings does not make room to include many people with TBI.

Interviews with **individuals with TBI, their family members, and public service providers** revealed that, from **their perspective**:

- Case Management – which would provide appropriate referrals, help individuals bridge all the public service programs, and assist them to follow through with the required paperwork – would "vastly improve" their lives.
- There is a great need for education about TBI among both public agency staff and consumers.
- Accessing public services that do exist is difficult for people with TBI because of restrictive eligibility criteria for Medicaid and Community Mental Health Services Programs.

E. People who have survived TBI tend to be too young to be placed in a nursing home for the rest of their lives.

Analysis of the demographic characteristics of TBI survivors in Michigan finds more than 60% of people who have been hospitalized for TBI are male. More than 50% of Michigan residents hospitalized for TBI are under age 45. People treated and released for TBI from emergency departments are even younger, with over 40% being children under age 15. An unknown

percentage of individuals with TBI apparently so "mild" that they were not hospitalized, will nevertheless suffer long-term impairments.

RECOMMENDATIONS

In light of the findings contained in this report, a panel of experts on Michigan's public programs and TBI issues was assembled during the Spring of 2004 to propose recommendations to state policy makers and legislators that could alleviate these problems and fill service gaps for individuals with TBI. Overall, the recommendations address long-term, medium-term and short-term policy goals to support the structure of an integrated rehabilitative system of care.

Recommendation # 1: Michigan's long term care system should have enough flexibility to provide appropriate services to those who need them (including people with cognitive deficits), and have a single point of entry into the system.

Recommendation # 2: In order to address the needs of individuals with moderate to severe TBI-related impairments, *in the medium term,* Michigan should consider creating a TBI specific Home and Community Based Medicaid Waiver as 25 other states have done.

Recommendation # 3: The Governor or the MDCH needs to appoint a TBI Services and Prevention Council to monitor and advise regarding the implementation of services for persons with TBI and the promotion of prevention efforts, which would lessen the incidence and cost of TBI in Michigan.

Recommendation # 4: The MDCH should designate one full-time equivalent position to oversee the implementation of the report and staff the activities of the TBI Services and Prevention Council.

Recommendation #5: The MDCH should provide continued support for ongoing collection, analysis, and reporting of injury and service use data; and for the development and measurement of service outcomes for individuals with TBI.

Recommendation # 6: It is essential that the State of Michigan and local communities continue to support and promote prevention efforts. Areas and ways to address TBI prevention include:

a. Maintenance of Michigan's motorcycle helmet law;
b. Education of students, parents, coaches, physical education teachers, and playground monitors in public schools, local recreation programs, and health clubs about concussion and other sports-related TBI; and
c. Support for injury prevention efforts, especially as related to transportation, violence, and falls.

Recommendation # 7: Departments, organizations, and agencies must adopt effective screening procedures to identify clients who may have TBI-related impairments. These include, among others: FIA, CMHSPs, Substance Abuse AARs, public schools, MRS, MI Choice Program, and the Michigan justice system.

Recommendation # 8: Michigan public human service providers, as well as staff in other public systems (such as the justice system), must be educated about TBI and the issues surrounding TBI. Materials for this training were developed and evaluated by the TBI Project.

Recommendation # 9: Local interagency teams of public service providers should be created and authorized to take referrals of individuals with TBI and identify and advocate for appropriate local services.

Recommendation #10: Medicaid reimbursement rates for neuropsychological examinations should be increased.

Recommendation # 11: The State of Michigan should establish a licensing category for AFC providers that have obtained accreditation and/or certification to care for people with TBI.

Recommendation # 12: The MDCH should review reimbursement policies related to AFC facilities licensed to provide TBI services to support services needed, and/or allow additional reimbursed services to be offered in such facilities.

Recommendation # 13: Home Help Services accessed through FIA should be provided to those who need supervision to accomplish activities of daily living, in addition to those who need "hands-on" assistance.

Recommendation # 14: Medicaid should consider funding cognitive aids as durable medical equipment when warranted in terms of cost effectiveness and medical necessity; *in addition,* the definition of "Medical Necessity" should be expanded to include consideration of abilities and independence so that individuals can remain in the community and have full access and independence.

Recommendation # 15: The Physical Disability Services (PDS) Fund needs to include the provision of assistive technology for cognitive disabilities as well as physical disabilities.

Recommendation # 16: Transportation issues are of great importance in many areas of Michigan and must be addressed.

a. Michigan's Medicaid Program should consider increasing Medicaid reimbursement for transportation to medical appointments; and
b. Access to transportation by individuals unable to drive due to TBI requires further study.

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Colorado Department of Human Services
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Executive Order on Traumatic Brain Injury Final Report

Presented to:
Governor Bill Ritter, Jr.
December 1, 2009

Prepared by:
The Colorado Department of Human Services

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Colorado Traumatic Brain Injury Trust Fund
Education • Services • Research

Executive Order on Traumatic Brain Injury
Report to the Governor

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Executive Order on Traumatic Brain Injury
Report to the Governor

I. Executive Summary

Traumatic Brain Injury is a significant public health concern nationally and in Colorado. As is outlined throughout this report, when brain injury is not identified, treated and addressed, it has a long-term and devastating impact on our society. For example: among prison inmates estimates of TBI range from 42%-87%, individuals with TBI are 80% more likely to abuse drugs/alcohol, TBI is associated with high levels of depression and anxiety, individuals with TBI attempt suicide 4 times more often than those with no injury.

The work of the Executive Order TBI Work Group is a critical first step to addressing the needs of Colorado citizens with TBI and their family members. However, a report is just that, a report, and it is paramount that there is an on-going commitment within the state government system to follow-through with these recommendations by continuing to build on the existing strong public and private partnerships that helped develop this report.

Over a period of 8 months, the Executive Order Work Group worked closely with brain injury stakeholders to identify critical elements for improving services to person with TBI and their families. The following is a list of recommendations from the Work Group. These recommendations are made in order of priority using a "Strategic Demand Metrics Model" that ranked the findings by 3 criteria:

- Feasibility
- Strategic Fit
- Benefit/Risk

Recommendations:

A. Continue with the efforts initiated by the Executive Order Work Group on Traumatic Brain Injury

A1. Create a statewide taskforce involving state agencies that will coordinate closely with the Brain Injury Collaborative and other brain injury stakeholders to oversee the implementation of the recommendations contained in this report.

A2. Provide additional funding to the Brain Injury Association of Colorado and allow the TBI Program to use existing funding to hire additional FTE so they can be adequately staffed to address many of the recommendations made in this report.

A3. Develop a state Ombudsman Program for TBI.

B. Improve data collection, analysis and utilization of data related to incidence and prevalence of brain injury.

B1. Develop and implement a mechanism for collecting incidence and prevalence data across all public and private systems.

B2. Develop recommendations for collecting data related to health disparities and TBI.

B3. Evaluate and enhance the current Traumatic Brain Injury Surveillance System at the Colorado Department of Public Health and Environment.
B4. Develop a Brain Injury Registry.

C. Target, implement, and expand community screening and assessment of brain injury.

C1. Enhance existing school district nurses' health screening forms to include specific questions related to potential TBI.
C2. Explore the feasibility of mandating general practitioners and emergency department personnel to conduct screening for brain injury.
C3. Work collaboratively with scientific and clinical experts to develop strategies to protect student athletes from brain injury.

D. Reduce duplication and streamline administration processes to improve service delivery outcomes for individuals with brain injury.

D1. Establish a "Medical Services Passport" that will facilitate coordination and communication among the individuals' multiple providers.
D2. Develop a "follow-along" and "care coordination" model that tracks individuals from point of injury and across systems facilitating the individuals' ability to access care.

E. Improve consumer access to accurate and current information.

E1. Develop and implement a network of website based information/resources clearing house for TBI.
E2. Produce an annual "State of TBI" report.
E3. Develop a comprehensive prevention and public education campaign on brain injury.

F. Develop a consumer-centered/consumer empowerment approach to services delivery.

F1. Increase individuals and their family members knowledge about how to affect and develop policy to address the needs of individuals with TBI.
F2. Enhance public and private sector collaboration with individual and family leaders.
F3. Increase access to Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) for individuals with brain injury who are eligible for these benefits.

G. Expand treatment, rehabilitation and supportive service options for individuals with brain injury and their families.

G1. Increase access to community behavioral health Medicaid services.
G2. Improve access to and funding for inpatient rehabilitation, outpatient rehabilitation and community home-based care and supportive services.
G3. Increase access to and funding for residential support programs.
G4. Increase access to and funding for vocational rehabilitation services.
G5. Increase access to and funding for Durable Medical Equipment.

H. Enhance service delivery quality to improve life outcomes for individuals with brain injury.

H1. Expand fall prevention training efforts through the Colorado Department of Human Services, Statewide Unit on Aging (SUA), Area Agencies on Aging (AAA).

H2. Provide comprehensive training to appropriate entities regarding the unique needs of military personnel and veterans with TBI and possible PTSD.

H3. Provide on-going community education to a variety of audiences including individuals with brain injury, family members, clinicians, researchers and other individuals concerned with brain injury.

H4. Establish a requirement for all state employees who provide services to individuals with brain injury, including colleges and universities, to have an introductory training on brain injury.

H5. Increase training and education for Behavioral Health Organizations (BHO) and Community Mental Health Centers (CMHC).

H6. Increase pre-service training for graduate students that will be working in service fields that relate to TBI.

H7. Establish a 1.0 FTE for the Colorado Department of Education for a Brain Injury Education Coordinator.

I. Maximize use of existing state and private resources.

I1. Evaluate SB08-153's impact on both service providers and individuals with brain injury and address problems that specifically relate to the Brain Injury Medicaid Waiver.

I2. Increase surcharge collection for the TBI Trust Fund Program by counties and municipalities to 100%.

I3. Increase access to and effectiveness of the existing Brain Injury Medicaid Waiver (BIMW) program.

I4. Develop and implement a minimum catastrophic injury insurance benefit to reduce the cost-shifting of private insurance to public safety-net programs.

In closing, it is important to recognize that Colorado has a strong foundation and existing infrastructure as it relates to brain injury. The findings and recommendations contained in this report build on and enhance this foundation. Colorado has the opportunity to be a national leader in advocating for and responding to the critical needs of its Colorado individuals and their families who struggle daily with the challenges of TBI.

BARRIERS
and
RECOMMENDATIONS

Addressing the Challenge of Brain Injury in America

2008

A report provided by the
Brain Injury Consensus Conference

Executive Summary

Introduction

Brain injury has created serious challenges for both the Department of Defense and the Department of Veterans Affairs; these challenges exist because brain injury has been, and continues to be, a critical healthcare problem in America.

Survivors, family members, and professionals all meet with a number of barriers that impede best practices in brain injury treatment and create debilitating hardships.

This report addresses those barriers, and calls for unified efforts between civilian and military systems, agencies, and organizations. Today, more than 5.3 million American civilians face challenges resulting from a brain injury. Additionally, 19.5 % of US servicemembers who have returned from Afghanistan and Iraq report experiencing a traumatic brain injury during deployment.[1]

As recently as 2006, an Institute of Medicine report stated:

> "...many people with TBI experience persistent, lifelong disabilities. For these individuals, and their caregivers, finding needed services is, far too often, an overwhelming logistical, financial, and psychological challenge. Individuals with TBI-related disabilities, their family members, and caregivers report substantial problems in getting basic services, including housing, vocational services, neurobehavioral services, transportation, and respite for caregivers. Yet efforts to address these issues are stymied by inadequate data systems, insufficient resources, and lack of coordination. TBI services are rarely coordinated across programs except in some service sites. Furthermore, in most states, there is no single entry point into TBI systems of care."

Brain injury is also a leading cause of death and disability among Americans. Data indicates that approximately 1.6 million Americans sustain a brain injury each year, and 125,000 are permanently disabled.[2,3] Economically, the total impact of direct and indirect medical and other costs in 1995 dollars is reported to exceed $56 billion.[4] Despite the prominence of affects of brain injury in the United States, it remains one of the least understood and recognized healthcare issues in our nation.

History

On November 2, 2007, more than one hundred of the nation's most respected authorities on brain injury convened in Washington D.C. to highlight accomplishments in brain injury treatment and to provide recommendations where barriers to care exist. Called the Brain Injury Consensus Conference, the two-day workgroup produced the groundwork for **Barriers and Recommendations: Addressing the Challenge of Brain Injury in America.**

Participants included members from:

- **Department of Defense** (DOD),
- **Department of Veterans Affairs** (VA)
- **Defense and Veterans Brain Injury Center** (DVBIC)
- **Brain Injury Association of America** (BIAA)
- **North American Brain Injury Society** (NABIS)
- **National Association of State Head Injury Administrators** (NASHIA)
- **American Neuropsychiatric Association** (ANPA)
- **Over 30 other civilian public and private organizations**

This report represents the results of an authoritative, cross-systems assessment on the state of brain injury in America. It addresses the treatment of all survivors across the continuum of care, from the point of injury through lifelong needs. It also includes the input of a number of other brain injury professionals who were unable to attend the conference.

This report is a free, publicly available document intended for multiple applications. It can be used as an advocacy tool, an informational resource, and a call to action. It was created to draw attention to the challenges that face Americans with brain injury, for the ultimate purpose of creating better identification of brain injury, access to care and overall bettering of their lives.

The civilian sector, the military, and the VA have made considerable strides in dealing with brain injury, and their focus and energies are to be applauded. However, brain injury in America remains a larger problem than any one entity can manage alone; it is only through a renewed spirit of collaboration that the following barriers can be managed effectively.

Barriers & Recommendations

BARRIER ONE

Screening protocols for brain injury are not consistent across military, civilian, and public systems, and each system poses the risk for various gaps in the identification and assessment of brain injury. Currently, no initiatives have been put forward to remedy this disparity in injury screening.

Recommendation

The screening of brain injury to date is based on a detailed account of the injury event and the resultant alteration in consciousness. To accurately assess brain injury, this screening should offer a standardized, thorough, historical account of the injury event. This is particularly important because the individual involved may have altered perception, and lack insight into the injury sustained. A neurocognitive assessment such as the Standardized Assessment of Concussion is helpful in determining the extent of injury at the point of injury, but limited thereafter.

We recommend the further development of screening tools to be used to screen for TBI in diverse populations. Individuals who screen positive should then undergo further diagnostic testing including: neuroimaging studies, neuropsychological evaluation and neurophysiologic studies.

Furthermore, for populations who are occupationally at increased risk, having a regular baseline cognitive test(s) is of benefit for comparison if risk of injury is present or sustained. Finally, we recommend an evaluation for assistive technologies and compensatory aids and strategies.

BARRIER TWO

The current classification of brain injury as Mild, Moderate, and Severe are inadequate to describe various and complex sequelae resulting from a brain injury.

Recommendation

There is much confusion as to the extent of the actual injury severity. Various cognitive impairments can improve or diminish over a period of time. Although gradual improvements can follow the injury event, impairments can manifest even after other symptoms of brain injury have resolved. Confusion is introduced by the fact that years later, debilitating life-long residual effects may exist, yet the results of that injury may be mistakenly diagnosed based on initial trauma. Repetitive concussions are dangerous and result in cumulative brain injury. The classification of traumatic brain injury should sufficiently demonstrate residual functionality at various periods of time beyond the initial injury, and incorporate the understanding of brain injury as a disease process.[5]

BARRIER THREE

Persons accessing mental health services, special education services or imprisoned may have undiagnosed brain injury and the identification/screening for such would help identify effective treatment or placement alternatives. "Unidentified TBI is a major unrecognized cause of social failure: in educational, vocational and economic arenas. Complex barriers often prevent people with mild TBI from: (a) self-identifying as having a brain injury that is seen as the cause of the disabling symptoms they experience, (b) gaining access to help and (c) addressing long-term, TBI-related problems that affect their quality of life." (Gordon & Brown, 2008).

Recommendation

All mental health organizations that offer screening services should also screen for brain injury.

BARRIER FOUR

While a variety of best practices and evidence-based guidelines exist for the treatment of brain injury, there remain no comprehensive national guidelines for best practices in brain injury treatment.

Recommendation

Currently, the guidelines for best practices in brain injury treatment vary widely. It is recommended that a national guideline for best practices in brain injury treatment be created in order to ensure consistent, quality treatment across all systems.[6] We acknowledge the excellent work toward this goal achieved by the Brain Trauma Foundation (BTF), in which an independent analysis of their guidelines on TBI outcomes and cost savings by the Centers for Disease Control and Prevention (CDC) found that that "if the BTF guidelines were used more routinely, there would be a 50% decrease in deaths, improved quality of life, and a savings of $288 million a year in medical and rehabilitation costs."[7] We also call for the identification, development and refinement of additional best practices in brain injury disease management.

Barriers & Recommendations

BARRIER FIVE

Persons with brain injury often have difficulty accessing the necessary type of services needed due to finances, geography or a failure to provide best practices.

Recommendation

We recommend the development of system-wide access to treatment and support protocols to ensure the right treatment at the right time. This includes entitlement to post-acute active rehabilitation incorporating best practices including cognitive rehabilitation, independent living skills training, vocational rehabilitation and leisure therapy. This also includes access to graduated levels of support in the community, in-home, or 24-hr. supported living, allowing for efficient episodes of treatment across the lifespan in order to ensure retention of skills and enhanced quality of life. Until comprehensive guidelines in brain injury disease management are available, we recommend adherence to the Brain Injury Medical Treatment Guidelines of Colorado.[8]

Treatment and supports are needed to address the complexity of individuals with brain injury including substance issues, Post Traumatic Stress Disorder, psychiatric and significant behavioral issues.

Development of geographically disperse rehabilitation and support options are necessary to address the needs of persons in rural settings. Collaboration with civilian and public partners may be needed for servicemen and women to access timely, appropriate levels of care closer to home.

Benefits packages provided by TRICARE, the VA and Medicaid must be reviewed in order to ensure optimum uniform coverage including providing same payment for same services, access to levels of care including post-acute and cognitive rehabilitation and extension of active duty benefits to reimburse necessary after-hospital treatment.

With respect to cognitive rehabilitation, the effectiveness of cognitive rehabilitation has unfortunately proven difficult to study due to several factors, including the heterogeneity of subjects, interventions and outcomes studied, as well as the difficulty involved in attempting to control for spontaneous recovery.

Clinical consensus, along with widespread professional opinion, must be taken into account, in addition to the research evidence attesting to the efficacy of cognitive rehabilitation.[9]

Civilian and military coverage plans must be sufficient to rehabilitate patients and return them to productivity. Moreover, cognitive therapy is an essential component of the rehabilitation process for persons with brain injury and should also be a covered therapy.

BARRIER SIX

Advances in brain injury care are implemented too slowly between systems. Currently, any current cross-system coordination efforts do not include strategies for effectively supporting person with brain injury over the lifespan. Additionally, case managers/care coordinators are commonly unfamiliar with protocols and practices outside their respective system, causing unnecessary complexity for the survivor who moves between systems. No formal body exists which coordinates an effective communication between systems.

Recommendation

As the military continues to make advances in the area of brain injury treatment, a vehicle for sharing of information must occur between systems. The advances learned from the resultant military experience from the effects of blast, particularly primary blast, from helmet sensors to balance tables, from screening with standardized assessment tools at point of injury to post deployment health assessment (PDHA), must be shared with other systems in order to allow for more effective brain injury trauma care for all Americans.

Veteran's Administration and Department of Defense hospital data are not included in the states' trauma system data. We recommend coordination and communication between Department of Defense, Veteran's Administration, and civilian agencies, allowing the civilian system to accurately anticipate the impact of wounded veterans as they return to their communities. Seamless coordination should not only occur between military systems, but between military, public, and private systems as well.

Military and civilian case managers must have opportunities to learn each other's systems of care, funding mechanisms, treatment programs, community resources, and communicate with one another. We encourage the DoD, the VA, and the public/private sector to jointly engage in educational and training seminars that allows each entity to benefit from the other's successes and to learn from their challenges.

Continued on next page

Barriers & Recommendations

We also recommend the formation of a Federal Brain Injury Council, established in statue for the purpose of communication and system coordination. Members may include representatives from Federal agencies, advocacy organizations, professional associations/societies, and others.

The Council may be an effective mechanism to foster successful collaborations such as those currently in place between the Centers for Disease Control and the Social Security Administration as well as formal Memoranda of Understanding as are in place between DoD and VHA for the Office of Seamless Transition and for spinal cord injury care and neuro-optometric rehabilitation. The proposed Federal Brain Injury Council will use a variety of mechanisms to facilitate and foster ongoing communication, collaboration, and system coordination among its members. Since the Commission on Accreditation of Rehabilitation Facilities (CARF) is actively engaged with many of the members of the proposed Council, the standards that address the use of feedback from stakeholders for program development, strategic planning, resource planning and performance improvement can be used as innovative practice tools for members to foster these relationships.

In the interim, it is suggested that civilian sector advisors be added to the Senior Oversight Committee for DoD/VA Wounded, Ill and Injured. Further, it is recommended that VHA conduct a formal gap analysis, publicize its needs, as appropriate, and outreach to private sector to obtain assistance in meeting those needs.

BARRIER SEVEN

Brain injury care does not receive research funding on parity with other disease processes.

Recommendation

In 2007, the Federal AIDS budget was $22.8 billion dollars. Parkinson's disease received $250 million dollars. The HRSA Traumatic Brain Injury Program was allotted $8.5 million dollars in 2007, and in 2008 President Bush proposed eliminating the funding. We recommend that brain injury treatment receive funding on parity with other disease processes

BARRIER EIGHT

Following brain injury, family members and case managers (care coordinators) are not effectively incorporated into treatment, particularly in the acute phase of care. The family often becomes the primary support unit. Families are typically ill-equipped to respond to the complexity of issues a person with brain injury may experience.

Recommendation

Encouraging family members to participate in educational programs and follow-up appointments is important to ensure an accurate account of the patient.

Case Managers are helpful in tracking and supporting those requiring follow up care. We recommend that all brain injury care providers provide educational and case management services from the moment of injury. When home placement is advised, family members should be trained in maintaining quality care at home.

BARRIER NINE

There are few or no support systems that consistently monitor care and patient satisfaction throughout the continuum of care.

Recommendation

Programs should be a collaborative effort; as much as possible, the program should be directed by the person with the brain injury, but there must also be an adequate support system that monitors, advocates, and intervenes on that person's behalf as necessary.

Moreover, mental health supports are also needed, with personnel trained in and knowledgeable about the effects of brain injuries. This level of support should include a continuum of care from a brief counseling session, to an ongoing, in-depth counseling program, to an intensive crisis intervention by a mobile crisis response team. Police departments, the criminal justice system, and emergency health care providers must be trained to prevent the inappropriate placement of an individual with brain injury in psychiatric hospitals or jail.

BARRIER TEN

Across the lifespan, brain injury programs do not address all aspects of treatment. Instead, only specific symptoms receive care.

Recommendation

Brain injury programs must address every area of the person's life, including physical, financial, emotional, intellectual, vocational, recreational, and spiritual. The effect of holistic treatment is synergistic, with small efforts in many areas combining to have a large impact on overall success. We recommend adherence to the United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities, as supported by the World Health Organization.[10] These rules govern areas that span Medical Care, Rehabilitation, Support Services, Accessibility, Education, Employment, Income Maintenance and Social Security, Family Life and Personal Integrity, Culture, Recreation and Sport, and Religion.[11]

Barriers & Recommendations

BARRIER ELEVEN

Respite care services are difficult for most family members and caregivers to access, leading to caregiver burnout, compassion fatigue, and overall lack of quality of care.

Recommendation

Respite care should be a regular and accessible service for family members and caregivers.

For mentors and life coaches, a delicate balance is required to provide necessary daily structure to ensure health and safety, while simultaneously fostering independence.

BARRIER TWELVE

Over the lifespan, offers of independent living and life-skills training are arbitrary, and sometimes unsupported.

Recommendation

Independent living and life skills training must be offered on a regular basis. As the person with a brain injury works to re-enter the community and rebuild his or her life, he or she will need to be trained in independent living and life skills.[12]

BARRIER THIRTEEN

Treatment plans for brain injury do not include strategies for dealing with aging-related issues, nor do they anticipate that brain injury is disease-causative and disease-accelerative.

Recommendation

Aging issues must be addressed by case managers/care coordinators in the treatment plan. As the person's condition changes, he or she may need additional care including physical, occupational, speech, or recreational therapies, cognitive remediation, psychiatric interventions, or pre-vocational services. We recommend new treatment plans that allow for brain injury disease management.

BARRIER FOURTEEN

Long-term, supervised housing and other residential programs for persons with brain injury are regularly denied services under most funding systems.

Recommendation

Access to affordable housing with associated services, physical access, and support must be financially attainable. Individuals may need long-term, supervised residential programs with related support care sensitive to their specific needs. Others may require a day-treatment program, where they can participate in supervised, meaningful activities. In conjunction with such programs, we recommend the provision of life care planning services such as financial resource management, legal arrangements for durable power of attorney and healthcare, wills, family and/or personal estate planning, health insurance purchase and availability, life insurance purchase and availability, and family member life insurance as a financial planning tool.

Moreover, we recommend a coordinated approach to state and federal assistance programs that are available for housing, food stamps, maternal assistance programs, child nutrition programs, Meals on Wheels, independent living programs, caregiver resources programs, public transportation assistance options, Social Security, aid to dependent families assistance, public utility relief programs, Medicare and Medicaid eligibility and pharmaceutical assistance programs.

BARRIER FIFTEEN

Transportation issues plague survivors of brain injury the duration of their lives.

Recommendation

While some individuals will be completely independent in their transportation needs, others will require assistance with accessing public transportation. Still others will be unable to access or deal with public transportation. Life care planners, case managers, and long-term care providers are encouraged to advocate within the community for supportive transportation services.

BARRIER SIXTEEN

Across all systems, case management services are not consistent. In military and VA settings, case management and care coordination services may be complicated, confusing survivors and family members; in the private sector they are either difficult to access or unavailable.

Continued on next page

(Barrier 16 Cont'd) Recommendation

We encourage all case managers, care coordinators, and case management organizations who are experienced, trained and certified in disease management of brain injury to participate in collaborative initiatives to form guidelines that ensure care that offers a particular focus on the many personal needs of survivors of brain injury.

Where services are absent, we call on state healthcare officials to conduct an assessment of needs report detailing the challenges that face their respective population of survivors. We encourage the National Association of State Head Injury Administrators to facilitate dialogue and actions that promote the use of case management services where needed, and programs which help individuals access the service.

BARRIER SEVENTEEN

Despite the complexity of brain injury, there is no national certification or training for brain injury case management. Few organizations outside direct care providers encourage personnel to receive certification as a brain injury specialist (CBIS).

Recommendation

We encourage the Case Management Society of America, the Commission for Case Management Certification, and the American Academy of Certified Brain Injury Specialists to collaborate and create an effective credential that educates and empowers case managers involved in the treatment of brain injury.

Furthermore, we recommend that institutions such as mental health centers, community colleges, veterans centers, the criminal justice system, and social service systems all designate individuals who can serve in the capacity of a certified brain injury specialist.

BARRIER EIGHTEEN

For brain injury survivors under 21, case managers are underutilized or uninvolved in the creation and development of Individualized Education Plans (IEPs).

Recommendation

In the case of individuals with TBI under the age of 21, case managers should provide input to school districts to develop Individualized Education Plans (IEP) specific to brain injury issues and educational goals.[13]

The 1975 Federal Public Law 94-142 (Disabilities Education Act- IDEA) maintains that states and school districts must develop and implement annual Individual Educational Plans (IEP) on all individuals with disabilities. Community case managers are an asset to the patient's school district in this process.

BARRIER NINETEEN

Survivors of brain injury do not typically receive special accommodations for their cognitive deficits in state and federal courts.

Recommendation

Self-advocacy and self-representation in court are basic needs that can be thwarted by cognitive deficits. Most courts currently accommodate language and physical disabilities with the necessary supports. We recommend additional cognitive deficit accommodation by the court system, particularly in matters involving the social agency interactions and medical decision-making transactions.

BARRIER TWENTY

Throughout all systems, there is a well-documented personnel shortage of healthcare professionals that provide valuable services to survivors of brain injury.[14]

Recommendation

We recommend that university health science programs incorporate brain injury treatment into their curricula and actively recruit healthcare professionals for the purpose of specialization in brain injury. We also suggest that community-based organizations, professional societies, and schools of higher education provide continuing education opportunities on the topic of brain injury.

Barriers & Recommendations

CONCLUSION

The Department of Defense, the Department of Veterans Affairs, and numerous organizations in the public and private sector have made tremendous strides in the treatment and care of brain injury, and they have demonstrated outstanding abilities to meet their responsibilities.

By addressing the barriers to brain injury care, we hope to encourage these different systems to renew their efforts to form collaborations, and to address gaps in service where they exist.

With respect to TBI survivors from Operation Iraqi Freedom and Operation Enduring Freedom, members of the media have been an extremely positive influence in raising public awareness and understanding of TBI and in garnering altruistic feelings for survivors, especially service members, and their and families.

The efforts of military, veteran and civilian advocacy organizations are currently synergized into a political will for TBI care that is unmatched in U.S. history. It is incumbent upon the leaders in civilian, military and veterans' systems to work cooperatively to build on strengths and minimize weaknesses to improve the quality of research, treatment and life-long living for all individuals with brain injury.

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Indiana Reports

Traumatic Brain Injury in Indiana
Needs Assessment Update for Indiana State Department of Health:
A Public Health Approach

Defining Traumatic Brain Injury

Traumatic brain injury (TBI) is defined as a disruption in brain functioning caused by external force, infectious disease, brain tumor, cerebral disruption, surgery, toxic exposure, and other neurological disorder that is not the result of some form of natural atrophy or breakdown.[1] This definition varies somewhat from state to state for the purpose of stratification of patients for benefits and recordkeeping purposes. The state of Indiana defines TBI as "an injury to the brain from an external force including closed and open head injuries, toxic injuries, chemical reactions, anoxia, near drownings, and focal brain injuries. This excludes vascular injuries, e.g. cerebral vascular accidents (strokes), aneurysms, alcoholism, Alzheimer's disease, or the infirmities of aging."[2]

Epidemiology

Every 21 seconds, someone in the US sustains a TBI.[3] This is a massive public health problem, with yearly incidence of 1.5 million in the US. Of these 50,000 die, 235,000 are hospitalized, and 1.1 million are treated and released in emergency departments. The number of TBI that do not present to medical attention is unknown, but is thought to be high.[4] There are an estimated 5.3 million Americans living with long term sequelae of TBI that require help with activities of daily living (ADLs). According to CDC estimates, approximately 35% of hospitalized TBI survivors have sequelae from their event.[5] The estimated cost (direct medical and indirect costs such as loss of productivity) of TBI totaled an estimated $56.3 billion in the US in 1995 alone.[6] In Indiana, the problem is harder to quantify because of the lack of a Statewide Trauma Registry to record incidence of TBI and cause. This is currently being rectified by the Trauma Systems Task Force, but until it is up and running we have limited data. The CDC estimates that in 1998 there were 3,702 non-fatal hospitalized cases, 25,527 cases that were treated and released by emergency departments, and 1,708 cases of TBI-related disability.[7] The prior needs assessment in 2000 indicated an incidence rate of 150 per 100,000 people per year (8,818 admissions to hospitals for TBI in 1997, as reported by the Indiana Hospital and Health

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[7] National Association of State Head Injury Administrators. Federal Traumatic Brain Injury Program State Grant Fact Sheet, Indiana. Updated 3/06.

Association (IHHA)). According to this report, 54% are 44yo or younger and the largest group of injury is males aged 19 to 34, making up 16% of all hospital admissions for TBI.[1]

TBI also has the highest death rate of all causes of injury, and accounts for roughly 1/3 of all injury deaths (unintentional + intentional) in Indiana and the nation. The fact that unintentional injury is the leading cause of death in both Indiana and the nation in the 1-34 age group, and that intentional injury fills out the top three in the 15-34 age group, highlights the vast scope of the problem in public health. Unintentional injury is the #5 killer of all ages in the US, and if combined with suicides and homicides, injury from all causes is the #4 killer.[7] The implications for prevention, medical care, and monitoring of this problem are astronomical. According to the CDC's State Injury Profile for Indiana in 2001, the death rate for TBI-related injuries in Indiana is 20.9 per 100,000 (1996-1998). Taking data from 1989-1998, the death toll for TBI (including MVA, firearms, falls, and other causes) was 1,087 per year, at a rate of 18.9 per 100,000, in excess of the US rate of 18.5 per 100,000. According to this report, four counties in Indiana (Lake, Pulaski, Vermillion, and Parke) have mortality rates at greater than or equal to 75% of the national average.[8]

Due to advances in injury prevention and emergency care, some promising trends have arisen in both the incidence and the outcome of traumatic brain injury. From 1980 to 1994, the TBI-associated death rate in the US decreased 20%, from 24.7 per 100,000 to 19.8 per 100,000. This was a reflection of a 38% decline in transportation -related (TBI) deaths, but an 11% increase in firearm-related (TBI) deaths. It is likely that the result of this development is that more severe and moderate cases are surviving through rehabilitation. The annual incidence rate of TBI hospitalizations has been declining since 1975, when it peaked at 234 per 100,000 population.[4] This is a positive movement that may indicate that injury prevention strategies, especially in regards to the nation's roadways, have started to make an impact.

The leading causes of TBI in the US are falls (28%), MVA (20%), struck by/against (19%) and assaults (11%). Males are about 1.5 times as likely as females to sustain a TBI. The two age groups at highest risk are 0-4 and 15-19 year olds. The highest death rates by race are in African Americans.[3] In Indiana, according to the "snapshot" taken by the latest needs assessment (which was heavy with moderate and severe TBI patients), the most common causes were MVA (49%) followed by falls (10%), disease/tumor/ stroke/anoxia, and other vehicle/pedestrian.[1]

Definition and Severity of Traumatic Brain Injury

The spectrum of this disease ranges from mild to severe and is determined by the length of loss of consciousness and loss of memory following the event. The Glasgow Coma Scale (GCS) is also used for characterization in the first 48 hours following injury. The Head Injury Interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine defines mild TBI as "a traumatically induced physiologic

[8] CDC State Injury Profile for Indiana 1989-1998. Published 2001.

disruption of brain function, as manifested by one of the following: any period of loss of consciousness (LOC), any loss of memory for events immediately before or after the accident, any alteration in mental state at the time of the accident, and focal neurologic deficits, which may or may not be transient." In addition, mild TBI is characterized by GCS score greater than 12, no abnormalities on CT scan, no operative lesions, and length of hospital stay less than 48 hours. Moderate TBI is defined by any of the following: length of stay of at least 48 hours, GCS score of 9-12 or higher, operative intracranial lesion, and/or abnormal CT scan findings. Severe TBI is indicated when the GCS score is below 9 within 48 hours of the injury.[9] The distinction between levels of severity in TBI is critical because the sequelae and subsequent needs of these patients status post injury varies greatly and is associated with the initial severity of injury.

Mechanisms at Work in Traumatic Brain Injury: Current Understanding

The NIH released its last Consensus Statement on Rehabilitation of Persons with Traumatic Brain Injury in 1998, and this document well outlines the medical knowledge of TBI and its rehabilitation at that time. The pathophysiology of traumatic brain injury has not been completely worked out, but some components of injury have been described. Chemical changes to calcium and other electrolytes, mechanisms of the cellular response to injury, and destructive molecular byproducts like oxygen free radicals and nitric oxide go some way to explain what happens after a brain injury. Beta amyloid has been seen to accumulate in some neurons as in Alzhemier's disease. Excitatory neurotransmitters, including glutamate and aspartate, are present in tremendous levels after brain injury and culminate in the death of neurons. Alterations in other neurotransmitters (acetylcholine, dopamine, and serotonin) have detrimental effects on cognition and behavior. The full interplay and implications of these disrupted mechanisms has not to this point been pieced together. Apoptosis (programmed cell death) does not occur in normal adult brains, but has been seen to take place in damaged brains in an unknown pattern. Diffuse axonal injury is common in deceleration injuries and indicates a shearing force that usually causes edema and swelling of the brain in addition of disruption of axons. Clinically this results in loss of consciousness and often a persistent vegetative state, and would play a mechanistic role in severe TBI.[10] Neuroplasticity (the ability of neurons to grow and repair themselves) is limited for unknown reasons in vivo, but numerous promising experiments have discovered key growth factors and growth mediators that may unlock this mystery. Other work is being done in relation to the small capillaries that supply the injured brain with oxygen and nutrition and how they may play a role in damage, regeneration, and recovery.[10]

Even given the limited knowledge of the process of brain injury and regeneration, we know that the implications of that complex process translate to a very complex and probably lengthy process in clinical rehabilitation for TBI patients. Cognitive recovery proceeds in overlapping stages, with more marked improvements in particular skills

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[9] Dawodu ST. Traumatic Brain Injury: Definition, Epidemiology, Pathophysiology. eMedicine Subspecialties. http://www.emedicine.com/pmr/topic212.htm. Last updated: July 15, 2005

[10] Wasserman JR. Diffuse Axonal Injury. eMedicine Subspecialties. http://www.emedicine.com/radio/topic216.htm Last updated: Feb 24, 2004

occurring at different times. This knowledge indicates that successful treatment protocols will have to be comprehensive and systematic in order to have their best effects. Treatment should follow science; to understand the appropriate treatments for TBI, more and better research must be done to understand the underlying mechanisms.

Issues in Rehabilitation and Long Term Care

The clinical consequences of TBI are rarely limited to a single set of symptoms, area of disability, or clearly delineated impairments. Due to large variation in severity, location, and type of injury, any neurological (including psychological, cognitive, behavioral, and social) impairment is possible with TBI. Possible areas of compromise along the neural axis involve sensory, motor, and autonomic functioning. Common long term neurological sequelae include movement disorders, seizures, headaches, ambient visual defects, olfactory and other sensory loss, and sleep disorders. Non-neurological complications include pulmonary, metabolic, nutritional, gastrointestinal, musculoskeletal, and dermatologic problems.[11] Unfortunately, for TBI patients, the medical challenges of their condition are only the beginning.

Multiple other factors can hamper the wellness of TBI patients; these falling in the categories of cognitive, behavioral, social, and developmental. Cognitive sequelae are among the most insidious and debilitating of the results of TBI. Commonly memory impairment, attention and concentration difficulties, language use, visual perception, and functional problems are seen. Most devastating is the loss of frontal lobe functions including executive functions such as problem-solving, abstract reasoning, insight, judgment, planning, motivation, information processing, and organization that is all too common in TBI patients. These deficits make up some of the needs that are most imperative but most often inadequately treated. Behavioral deficits also lead to increased need for care and counseling. Aggression (both physical and verbal), agitation, learning difficulties, minimal self-awareness, altered sexual functioning, impulsivity, and social disinhibition can feature prominently in these patients. Mood disorders are especially common, with depression, anxiety, personality changes, and reduced ability to control emotions topping the list. Children also can have prominent educational sequelae from TBI, which is important to recognize given the fact that they make up one of the most high risk groups. Developmental delay, inability to concentrate, social delay/arrest, and other factors put an enormous amount of strain on both the child and his/her parents, and the future of the child's care. The social consequences of the deficits noted above are predictable if not always easily able to remedy. All levels of TBI are at higher risk for suicide, divorce, chronic unemployment, economic strain/ruin, family strain, and substance abuse.[10] This long list of issues underscores the importance and urgency for medical, cognitive, social, educational, vocational, and psychological therapy for life long wellness in TBI individuals.

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[11] Rehabilitation of Persons with Traumatic Brain Injury. NIH Consensus Statement Online 1998 Oct 26-28; 16(1): 1-41.

Treatments Utilized in Traumatic Brain Injury and Supporting Evidence

Now that the definition, scope, pathophysiology, and clinical consequences of TBI have been identified, it is conducive to talk about treatment. Given the unique myriad of targets for therapy in TBI, it makes sense that multiple parties within multiple specialties would be involved in an approach to successful treatment. There has not, however, been extensive, rigorous research to support this statement, although uncontrolled trials and a single nonrandomized clinical trial (NCT) have supported it. The consensus report concludes that more research is needed but recommends "rehabilitation services, matched to the needs of persons with TBI, and community-based non-medical services are required to optimize outcomes over the course of recovery." Individual components of therapy do, however, have good support. These therapies fall into two groups, restorative (improving a specific function) and compensatory (adapting to the presence of a deficit). Pharmacological agents for affective and behavioral disturbances do have support, but caution is advised for careful monitoring because TBI patients have a greater risk of adverse events on these medications. Cognitive exercises, used to improve specific neuropsychological processes (e.g. attention, memory, executive skills), have been supported by randomized controlled trials (RCT) and case reports (CR). Compensatory devices, used to improve cognitive function and compensate for specific deficits, have been supported in the research. Psychotherapy, used to treat depression and self-esteem issues, has not been studied systematically in TBI but has wide support in similar disorders. Behavior modification, used for personality, social and behavioral changes, has limited support in descriptive studies (DS) and a single prospective clinical trial (PCT). Vocational rehabilitation, for reintegration purposes, is indicated by observational studies. Special education for children with developmental and other issues has not been well studied. Adult education, nutritional support, music therapy, art therapy, recreation therapy, acupuncture, and alternative medicine are all commonly used without trials to support their efficacy. Clinical evidence supports family intervention, but no trials.[11]

Two messages can be taken from this consensus regarding cognitive and behavioral rehabilitation strategies and their scientific support. Firstly, much more research is needed to properly evaluate these modalities. Second, it becomes obvious that specialized, personalized, interdisciplinary, and comprehensive treatment programs involving not only medical but also non-medical modalities must be evaluated and carried out in all patients with TBI and persistently re-evaluated for efficacy. With changing abilities and changing deficiencies, these patients are not, as they might appear, "stable" in their rehabilitation. It reasons that the withholding of supported modalities could also play a role in the destabilization of these patients.

Implications for TBI Care in Indiana: A Public Health Approach

In analyzing the status of total care for TBI in the State of Indiana, a systematic approach must be taken in terms of its status as a public health problem. An exceptional overview of the approach of the CDC's National Center for Injury Prevention and Control (NCIPC) to TBI as a public health problem was published in 2005, and it is worth repeating here in

an attempt to be deliberate. It outlined four interrelated steps to affecting change in the approach to any large health problem, and tied them into TBI.[3]

1) Surveillance
   Ongoing and systematic collection of data and the analysis, interpretation, and use of those data. Important elements of this data would include number of events, severity of event, cause of event, cost of event, follow up of event, etc.
2) Identifying risk and protective factors
   These associations will arise out of reliable data and create targets for intervention.
3) Developing and evaluating interventions
   Use of the collected surveillance and risk/protective information to create plausible solutions. Small scale implementation would be done to test these ideas.
4) Disseminating information to improve TBI outcomes
   Wide implementation of strategies that were successful on a local scale. The cycle is completed by monitoring of the changes by new surveillance data.

A successful approach to the problem of TBI in Indiana by the Indiana State Department of Health would have to include all of these elements. Up until very recently, a continuous data surveillance system for TBI (and other trauma) was only a dream in Indiana. There have been efforts to create a "snapshot" picture of the problem (see 2000 Needs Assessment and CDC epidemiological reports[1,7,8]) but they have been sporadic and their data not directly comparable. What is really needed is a statewide Trauma Systems Registry to track TBI incidence through ED admissions, hospital admissions and discharges, and death certificates. In addition to this, data on the number of people living in Indiana with TBI, their severity, their deficits, the services that they have received or not received, in similar format to the Needs Assessment but continually collected, would be ideal to properly and regularly monitor the real scope of this problem in Indiana. A piece of this, the Trauma Registry, is in the planning stages and looks to be available for implementation by May 2007, at the earliest.[12] This portion would have to separate out TBI patients specifically to yield useful data, and if it did so, would be a great tool to collect epidemiological data that could be targeted at prevention efforts. In addition to incidence data, numbers following patients all the way through acute rehabilitation efforts into outpatient and home-based/ECF based care are needed. This would require drawing together individuals from many different state and local health and non-health agencies to gather the salient data, but it is really the only way to rise above the anecdotal, spotty treatment and allocation of resources for TBI that is currently the norm in Indiana.

Simultaneously and concurrently to efforts to ramp up raw data collection to a more rigorous level there should be periodic efforts to poll and question representative members of the four major parties in the problem of long-term TBI treatment. These I define as 1) TBI patients, 2) families of TBI patients that play a role in care, 3) providers of TBI patients (including but not limited to doctors, nurses, therapists, counselors, and non-medical service providers), and 4) advocates for TBI patients including BIAI,

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[12] Indiana State Department of Health Advisory Task Force on Trauma Systems/Emergency Preparedness. Indiana Trauma Registry Development Timeline. Planning meeting May 5, 2006.

PATBI, and related organizations. This should be done in all areas of the state to obtain a valid estimate of the met and unmet needs of TBI patients, not just in Indianapolis but also in places like Jasper, Berne, and even more rural towns. The process for an update to the 2000 Needs Assessment is underway thanks to work by Jonathan Kraezig of Vocational Rehabilitation Services, Lindsay Meyer of BIAI, and other individuals to obtain funding for an Indiana Traumatic Brain Injury Demonstration Grant.[13] This project has four major goals, these being 1) conducting a statewide assessment of needs and resources, 2) developing a statewide system of supports coordinated by Indiana Vocational Rehabilitation Services, 3) developing and implementing statewide education and referral initiatives, and 4) the development of a vital and active advisory council. The first goal is pertinent in the current discussion. During the first year of funding, the grant will purportedly cover a new statewide needs assessment. They will use demographic data from the Indiana Division of Aging's ongoing study and the same polling tool used in the 2000 needs assessment contracted with Luther Consulting to achieve quick, efficient, and analyzable results. The Illinois Needs Assessment Measure, constructed by Allen Hinerman, PhD of Northwestern University, in addition to the Family Needs Questionnaire, created by Jeffrey Kreuitzer, PhD of Virginia Commonwealth University were the specific tools that was used in 2000 and will be utilized once again for the current assessment. As in the previous assessment, focus groups will be held around the state with the 14 BIAI support groups that currently meet. They will also be contacting providers at all levels and locations for their input both at the time of the survey and continued input from selected providers as part of the Advisory Council. These elements will create the burden of proof with which to weigh the value and validity of current and future intervention implementation in the second year of funding.[13]

Survey of Expert Opinion: Methodology

To help this effort, and given the vastness of the problem (great) compared to the time and funding of my work (little and none), and to help translate the forthcoming work of the new TBI needs assessment for use by the Indiana State Department of Health, I have created an independent subjective questionnaire intended for providers and advocates of TBI. As a future physiatrist, I have had the opportunity to get to know several of the leading TBI providers in the city of Indianapolis and I would like to use my contacts and their knowledge and experience working with patients and the system to give context to the results of the needs assessment for use by the ISDH. While the proposal outlines a very practical and useful tool for the best deliverance of resources to patients with TBI, this being admittedly the most fragmented portion of the puzzle here in Indiana, it does not deal as much with injury prevention efforts, continuous TBI data epidemiological data collection, and medical and public education issues that tend to fall more in the realm of the public health and the Indiana State Department of Health versus that of the service provision teams. It is to get at the heart of these public health needs that this report is directed, and to give an overall public health opinion to the problem of TBI.

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[13] Kraezig J, Meyer LA, additional BIAI board members. Indiana Traumatic Brain Injury Demonstration Grant. Project period April 1, 2006 – March 31, 2009.

The questionnaire given to these providers by personal interview is presented below. The subject matter of each question was taken from perceived needs outlined in 2000 needs assessment. In the town hall meetings, these concerns were of six major categories, namely 1) funding of services, 2) availability of services, 3) case management, 4) coordination of services and the need for a single point of entry for government services, 5) limited access to information about TBI for survivors and families, and 6) lack of appropriate special education and children's rehabilitation services in the school system. The strategic plan at that time outlined six major targets for action, which are 1) establishment of a single point of entry for government provided services, 2) increasing public awareness, 3) education (children), 4) increasing funding and number served by the TBI Medicaid Waiver, 5) changing the Medicaid policy to allow more in-state funding of cognitive and behavioral programs, and 6) prevention.[1] All of these needs were covered in my questions on one level or another. Additional questions referred to medical research, public health research, and the treatment of TBI in other states. Full content is included below.

Figure 1: Questionnaire for TBI Providers, TBI Needs Assessment Update, ISDH, May 2006

- What is your specific role in caring for TBI patients?
- For how long have you been doing this work? At what centers?
- Have you worked in other states in this field? If so, what are some things that they did differently that were better for the patients?
- What changes have you seen in the field during your career?
- Do you feel the situation is better or worse for TBI patients than when you started? The same? Explain.
- What do you feel is the best resource for your TBI patients in obtaining knowledge on the services that they need?
- What service do you think would be of most help to you as a provider in caring for TBI patients?
- How well do you think that the state of Indiana is doing in the care of these patients versus other states?
- What, if anything, do you see as the role of the Indiana State Department of Health in facilitating care for these patients?
- Have you been involved in advocacy for TBI patients in the past or currently?
- Would you like to be involved in ongoing work in public health with the Indiana State Department of Health to improve knowledge and care of this disease (e.g. Advisory Task Force on Trauma Systems, etc.)?
- Are there additional issues in the care of TBI patients that I have not covered?
- Are there any additional comments that you have on the status of care of TBI patients in the State of Indiana?

Figure 2: Survey for TBI providers, TBI Needs Assessment Update, ISDH, May 2006

Regarding ongoing challenges in the care of TBI patients, where is *additional* progress needed? Scale of 1-5 with 5 being most important.

- Improving public understanding
- Improving understanding in health professionals
- Increasing availability of case managers
- Improving efficiency of service delivery
- Increasing the number of inpatient facilities for adults with TBI
- Increasing the number of outpatient facilities for adults with TBI
- Increasing the number of independent living facilities for adults with TBI
- Increasing the number of inpatient facilities for children with TBI
- Increasing the number of outpatient facilities for children with TBI
- Increasing school support and school programs for children with TBI
- Medical research into this topic
- Advocacy for these patients
- Improving continuity of care
- Funding of services

Page 1

Figure 3: Survey for TBI providers, TBI Needs Assessment Update, ISDH, May 2006

Which services most need *additional* funding? Scale of 1-5, with 5 being most important

- Inpatient rehabilitation facilities
- Medical costs to TBI patients (Medicaid/Medicare/other)
- Physical therapy
- Occupational therapy
- Speech therapy
- Vocational rehabilitation
- Independent living facilities
- Extended care facilities
- Home health care/skilled nursing
- Transportation
- Case management
- Counseling (financial, educational, vocational)
- Respite for families caring for TBI patients
- Peer socialization
- Public health research
- Medical research
- Any additional comments or items that have not been addressed? Page 2

Survey of Expert Opinion: Results

These data can be divided into two sets: observational and comparable (numerical). The observational questions describe the provider's personal experience of the current status of TBI care in the state and what our future directions should be. The numerical data can be taken to represent a snapshot consensus of rehabilitation-centered providers on the current needs of TBI patients in the state. Both are equally important in supporting the validity of the recommendations put forth by this report. Limitations of this study include small size (n=6), use of survey that has no scientifically documented support, bias towards physicians, and lack of inclusion of TBI individuals or families. It is not intended to supersede the upcoming needs assessment being undertaken by VRS and BIAI, but support and possibly direct their questioning. It is my hope that this information can be added to a wealth of data procured in the current needs assessment to create a complete picture of the state of TBI care in Indiana. Most importantly, it will help to shape the Indiana State Department of Health's public health approach to this issue.

There were only six participants in this study, but each brings a great deal of knowledge and experience to the topic from various perspectives. The full data set is available in Table 1. Regarding the treatment of TBI, the opinions were mixed. Better neuro-ICU care and more resources, support groups, attempt by schools and special education, and provider education were quoted as reasons to claim improvement. Pharmacological treatment and insight into subtypes of frontal lobe deficits has improved, as has behavioral support and prevention efforts. Lack of continuity, limited funding, weak therapy, poorer care outside of Indy (especially outpatient) and suboptimal length of acute rehabilitation (secondary to funding) were reasons to call the general state of care the same or worse. Vocational rehabilitation funding and services were criticized by nearly everyone. The single best help that was mentioned by nearly everyone is better

access to services. Also noted in this category is better education of providers, better Medicaid definitions for funding TBI follow-up, and better data. Most respondents graded the state's performance lower than the average, e.g. "Far behind in management and in philosophy," and "the issue is not at the forefront." This, sadly, is not a surprise to any provider of TBI in the state, hence the urgency of the efforts that have been put forth.

One of the key points that is elucidated by this report is the role of the Indiana State Department of Health in helping out the TBI effort. A job that was universally agreed upon is the establishment and continuation of prevention efforts headed by the ISDH. These are currently led by Dr. Charlene Graves, the Medical Director of Injury Prevention at the ISDH. All respondents stressed that the implementation of a trauma registry with TBI data would best be done by the ISDH. Many also noted the need for tracking outcomes as part of this data collection role. Some respondents felt that the ISDH could play a role in physician education, case management, and advocating long-term services. Several are interested in advocacy through the Trauma Task Force (the body implementing the trauma registry) or in other ways; most providers are already involved in ongoing advocacy currently.

Novel ideas brought up in these discussions can be of use in this early stage of brainstorming and planning to improve the state's TBI resources. One respondent has had experience with a residential care system that allowed more independence on the part of the patient and less medical knowledge and surveillance on the part of the providers; especially for TBI patients with agitation/behavioral issues but few other sequelae. It is thought that this would decrease the dependency on ECF placement and reduce the direct cost to the waiver program, thus freeing up money to improve services. Two respondents stressed the need to an increase in the quality of education for all TBI providers, specifically touting the program established by the American Academy for the Certification of Brain Injury Specialists (AACBIS). This program offers two tiers of certification: the certified brain injury specialist (CBIS) for individuals with 1-2 years of experience in the field, and the certified brain injury trainer (CBIT) for professionals with many years of experience in all areas. At other places in the country this has been seen to have an impact in the quality of care for TBI. One provider highlights a need for more early involvement of care by physiatrists to improve long-term outcomes (i.e. in the ICU). She adds that unifying all state trauma centers should be unified with common protocols toward acute TBI management. One advocate stresses the need for research, both clinical (in state of the art treatment modalities) and epidemiological (e.g. in the correctional system). Another introduces the idea of a trust fund that funds services specifically for TBI patients.

Finally, the directors of BIAI and PATBI were able to offer common complaints of patients to their respective organizations. These are presented in Table 2.

Table 2: Organization specific complaints by TBI individuals or families

Helpline complaints to BIAI	Complaints to PATBI
1) financial stresses	1) lack of residential options
2) special education	2) lack of adequate vocational training
3) vocational rehabilitation	3) restrictions in Indiana Medicaid
4) caregivers not understanding their role	4) insurance issues
5) stress management	5) lack of transportation

The numerical data is presented in figures 4 and 5 in a bar graph format. These further highlight what are seen as problem areas by the providers and advocates that were interviewed.

Survey of Expert Opinion: Discussion

Now with expert opinion in addition to the epidemiological, public health, and medical consensus presented earlier, the needs of Indiana's TBI population can be well elucidated. The primary targets identified by this analysis that need additional progress include 1)vocational rehabilitation, 2)continuity of care, 3)funding. The next four important tied in my analysis, those being adult outpatient rehabilitation facilities, independent living centers, school support, and support groups. The top five targets identified that need additional funding are 1)vocational rehabilitation, 2)transportation, 3)independent living centers, 4)case management, and 5)Indiana Medicaid. The general consensus is that the state is not doing as good a job as it could do in general. One provider put it well when he said that the state "does not have a good direction." These providers are looking to the Indiana State Department of Health for guidance, data collection and analysis, education, and prevention efforts. For the relative cost – to the lives of TBI patients and to health care system – the low level of prominence of traumatic brain injury is grossly inadequate.

The general fragmentation of the system is apparent from the respondents' comments. The root cause appears to be related to funding and lack of organization and leadership for the problem of TBI. The needs that are highlighted above are really only the beginning to organizing and streamlining a successful approach to TBI care and improved outcomes.

Outline of Current Efforts in Indiana

It is expedient to depart from the strict guidelines of the public health model at this point for two compelling reasons in designing and implementing interventions for TBI patients. The first is a starting structure is needed to remedy the current fragmentation of the system. This structure is necessary to affect change in care strategy and must be amenable to revision. Secondly, Indiana does not exist in a vacuum. There are well supported and documented solutions that have been implemented on a local and national level by agencies such as CDC's National Center for Injury Prevention and Control and organizations like the Brain Injury Association of America. So, while the model should be returned to

often for optimization of the TBI care system and evaluation process of new interventions, it would be responsible to turn our immediate efforts to building an action plan and advisory council at the earliest possible opportunity.

This is exactly what Vocational Rehabilitation wishes to do with their new TBI demonstration grant. Using the clinical and practical expertise of people in their rehabilitation network and those in the yet-to-be-formed Advisory Council, they will work to implement initial solutions to the state's obvious organizational problems by consensus. The Director of the Division of Disability and Rehabilitative Services, Peter Bisbecos, has designated Indiana Vocational Rehabilitation Services (VRS) as the lead agency and organizational home of TBI services and coordination effort. This may be in response to the defeat of a legislative measure in 2001 to establish BIAI as the point-of-entry of service for brain injured individuals.[14] However, it is a natural choice for practical reasons because of their wide base around the state and large number of connections to providers at all levels of TBI care. The second goal of the demonstration grant is "to develop a statewide system of TBI supports coordinated by Indiana VRS," thus placing them in position to be the point-of-entry of service.[13] This is logical because it uses existing structures to produce real improvements in networking at a minimal cost. It is unlikely that VRS will need help from the Department of Health for this goal.

The next step is the development and dissemination of resources for the better handling of TBI care on a state level. To this end, the BIAI and IPAS publish a Resource Directory biyearly.[15] This is a great help to those individuals that can acquire a copy, but ensuring that every TBI patient and provider has this information and that it is up to date requires more manpower. The penultimate two goals for the upcoming TBI grant are "to develop and implement statewide education initiatives" and "to develop and implement information and referrals sources." Given the vast network that VRS commands, this should be relatively easy to accomplish, once appropriate needs are identified in the needs assessment. These two goals constitute the majority of the agenda for year two of the grant. The rate limiting step for these goals will be the national and international development of credible and rigorous medical and public health research, which will most likely not be forthcoming during the life of the grant. This unavoidable aspect reinforces the need for continuous evaluation, update, and renewal of intervention recommendations. It also highlights the crucial nature of the grant's final goal, that "to develop a vital and active Advisory Council."[13] Without a doubt, this will be the body that guides the evaluation process not only during the course of the grant but for the many years after, as well as obtaining a permanent source of funding. These practical concerns cannot be avoided for the continued success of this effort in the long-term.

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[14] Nordholm C. Traumatic Brain Injury Overview for the Indiana State Department of Health. Compiled June 22, 2001.

[15] Meyer LA and Beecher S. Brain Injury Association of Indiana Resource Directory 2005-2006.

National Breakthroughs in the Management of TBI

The final consideration of this report will be looking at advances in national and other states in the delivery of TBI care, obviously highlighting the ones that have worked! These changes have progressed at varying rates across the nation following the passage of H.R. 248, the Traumatic Brain Injury Act of 1996, becoming P.L. 104-66. This law authorized expanded funding for prevention, surveillance, research, and state grant programs to improve service delivery and access for individuals with traumatic brain injury, which were defined as "an acquired injury to the brain, not including congenital or degenerative disorders, nor birth trauma." Regarding state activities, the law authorized the US Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA) to make grants to states for purpose of carrying out demonstration projects to improve access to health and other services. Three elements are required for funding. The first is an advisory board organized by the state designated agency and consisting of representatives from appropriate state agencies, public and nonprofit private health related organizations, other disability advisory groups, members of an organization representing individuals with TBI, injury control programs, and a substantial number of individuals with TBI and/or their family members. Secondly, states are required to match Federal dollars at a rate no less than $1 for every $2 provided from Federal level. Lastly, the DHHS is to coordinate activities with other public service agencies. A key part of the bill also increased funding for basic and clinical science research from the NIH and public health research from the CDC, as well as study of therapeutic interventions and outcomes by the DHHS.[15]

The power of the country to confront the problem of TBI was improved further by the passage of H.R. 4365, the Traumatic Brain Injury Amendments of 2000, into P.L. 106-310. These amendments concerned TBI treatment in children as Title XIII of the Children's Health Act of 2000, as well as extending the authorization of the TBI Act of 1996 from three to five years. Changes relating specifically to the state approach to the problem of TBI include authorization of the CDC to conduct expanded state surveillance, education, and prevention programs for TBI, including the institution of a state TBI registry with demographic information, causal information, administrative information, and clinical information of the injury (severity, outcomes, types of treatments received, types of services used). The law further expanded funding for both basic science and clinical research into TBI by the NIH and advocacy services for individuals with TBI.[16] These laws and the funding associated with them have revolutionized the federal recognition of TBI as a major health problem. However, the response of the states to this challenge has been uneven, at best.

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[16] Vaughn SL. History of the TBI Act: Fact Sheet from the TBI Technical Assistance Center at NASHIA. Available online at http://www.nashia.org/doc/history_of_tbi_act.doc. October 6, 2004.

Experience in Selected States

Due to uneven progress, local agencies, such as the Indiana State Department of Health and Indiana Vocational Rehabilitation Services may be able to use some of the documented successes and mistakes of other states in improving the recognition, funding, and delivery of services to TBI individuals within our state borders. Several states whose programs have been touted at various levels will be presented here (see Table 3). Of most importance in this consideration is Minnesota's Resource Facilitation, a system of information and referral that is recognized by the BIAA as a model system. This has been recommended for use by other states and has been included in the Indiana TBI Demonstration Grant of 2006.[13] This is a multi-agency partnership that will provide follow-along assistance to TBI persons statewide that are leaving the hospital after brain injury, as well as continually monitoring services usage and patient needs. Minnesota also has a very large number (compared to states of similar size) who are covered by Brain Injury Waiver for care costs. Michigan has a state-of-the-art integrated data collection system that includes all trauma, TBI, and follow-up data (for all types of trauma) that gives unparalleled epidemiological information. They also have a no fault insurance program that covers most costs for treatment for all types of trauma, including TBI. This frees up general revenue money to pursue Federal research dollars, which they recently used to update and overhaul their information and coordination system. Illinois also has great Brain Injury Waiver coverage and extensive case management to help TBI persons enter the system for care. Ohio, Colorado, and Washington have Model TBI systems initiated at the university level (OSU, UC, and UW) through an acute rehabilitation center (Dodd, Craig, University Hospital). In addition, Ohio has a non-profit TBI fund which covers costs for many BI persons, and some care studies. Colorado has made inroads into integration of information and referrals through the Colorado Information Resource Coordination Linkage and Education initiative (CIRCLE) and its Care Coordination program. In addition, Colorado and Pennsylvania both tout trust funds for the care of TBI that are funded by fines selected traffic offenses and alcohol-related driving offenses. Pennsylvania has recently received funding to revamp its information and referral clearinghouse. Washington has a strong community-based program and shares with Michigan the novel single point of entry to services. All of these states have an advisory committee (usually with extensive TBI patient and family involvement) and a trauma registry. Some of them have separate TBI registries and surveillance systems for follow up care. In comparison to these cutting-edge states, Indiana's system is relatively underdeveloped, with no extant trauma registry, no active advisory committee, fragmented service delivery, and minimal funding for services although all of these points are targets for remedy with the new Needs Assessment.[17]

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[17] National Association of State Head Injury Administrators. State Programs Pages. Guides to State Government Brain Injury Policies, Funding, and Services. Federal Traumatic Brain Injury Program State Grant Fact Sheets. Available online at http://www.nashia.org/programs/states/index.html. Accessed May 16, 2006.

Recommendations to the Indiana State Department of Health

Data Collection and Outcomes Monitoring

1) Implement a trauma registry and ensure the inclusion of pertinent TBI-related data to incorporate TBI registry. Absolutely vital for any continuous monitoring of the problem and ability to affect changes in care.
2) Include rehabilitation providers on Trauma Task Force. Will be especially valuable in streamlining trauma centers around the state in their approach to TBI care and getting physiatrists involved early to improve outcomes.
3) Further investigation for data points to be included in trauma/TBI registry. Ensure the best data is being collected for monitoring.
4) Work to create an outcomes registry like Resource Facilitation (Minnesota Model). This would help to improve the areas that Indiana is most lacking in TBI care, especially in outpatient follow-up.
5) Appoint a director to manage these two registries. This is necessary to make sure that someone is responsible for a continuous interest in the data outcomes.
6) Be involved in the TBI Advisory Council, have a permanent member on this council. To affect change through the data, this is the best way to inform all the important parties.
7) Distribute this data to the TBI Advisory Council, VRS, and a network of providers to aid in novel interventions. Step four of the public health approach. The results of the interventions can be evaluated by the TBI registry and especially the outcomes measurements.

Funding, Information, Advocacy

8) Advise funding of TBI services in annual budget. Failure to do this will doom any other efforts in the long run.
9) Support creation of trust fund through traffic fines. This may be of great help to fund things like case management, etc.
10) Support expansion of Indiana Medicaid TBI waiver. To make sure that all deserving persons can get the care that they need, here in Indiana.
11) Advocate for information disbursement to all TBI patients at time of injury, better long-term services. This is key as an adjunct to aggressive case management that will need to be accomplished to improve outcomes.
12) Support VRS bid as single point of entry. As the "action" arm of the coalition, VRS is a logical choice for this. They also have the most to improve upon (according to most providers) and perhaps less fragmentation will improve their performance and hopefully funding.
13) Continue to support the efforts of BIAI and PATBI. Foremost advocates in the state and great source of information for patients and families.
14) Support education efforts of providers of TBI care. Work with IUSM, local hospitals BIAI to facilitate better education, especially to the services available and how to promote them to patients.

Research and Prevention

15) Form coalition with IU PM&R residency program and providers to enable clinical research of modalities. University leadership is key in the approach to several states' success in TBI (e.g. Michigan, Colorado, Washington).
16) Continue and broaden prevention efforts. This is already a major function of the ISDH and needs to be continued and perhaps broadened specifically in TBI prevention.

Brian Knapp, MD
Intern, ISDH
May 30, 2006

Indiana State Department of Health
Injury Prevention Program
Data prepared by Jodi Hackworth and Joan Marciniak
December 12, 2007

Data Report on Traumatic Brain Injury

DATA HIGHLIGHTS

- The leading causes of TBI in the United States and in Indiana are falls, motor vehicle crashes, struck by/against events, and assaults. The estimated direct and indirect costs of TBI in the United States in 2000 were $60 billion.[1]

- In the United States, 1.4 million people sustain a TBI each year. Of the 1.4 million people, 50,000 die, 235,000 are hospitalized, and 1.1 million are treated and released from an emergency department (ED) each year.[2]

- The CDC has estimated that at least 5.3 million Americans, approximately 2% of the U.S. population, currently have long-term or lifelong need for help to perform activities of daily living as a result of a TBI.[3]

Indiana Data for 2003-2005:

Mortality Data

- There were 3,500 TBI deaths in Indiana. More males (2,557) died than females (943), with males dying at a rate almost three times greater than females. Although the number of deaths among whites (3,107) was higher than in blacks (368), the age-adjusted death rate shows that blacks died more often than whites in relation to their population.

- Males and females over 65 years of age had the highest TBI death rates. While whites over 65 years of age had the highest death rate, in blacks the highest death rate was in those ages 25-34 years.

- White males over 65 years of age (64.8 per 100,000) and black males 25-34 years of age (64.5 per 100,000) had almost identical TBI death rates.

Indiana Emergency Department Data

- Of the 1,662,783 outpatient/emergency department (ED) visits with a primary diagnosis for injury or poisoning, 63,936 were visits related to TBI, which represented 4% of all outpatient/ED visits. Of those receiving treatment at the outpatient/ED, 57% (36,663)

were male, and 43% (27,270) were female. The age-adjusted rates for visits to the outpatient/ED were similar for whites and blacks.

- The age group with the highest age-adjusted rate of outpatient/ED visits due to TBIs was 0 to 4 year olds with a rate of 1,671.12 per 100,000, followed by individuals 15 to 19 years of age with 680.74 per 100,000.

- The total charges for TBI that were treated in an outpatient/ED were $119 million. The majority of the patients had commercial insurance (34%) or Medicare/Medicaid (28%).

Indiana Hospital Inpatient Data

- There were 161,198 inpatient hospitalizations with a primary diagnosis of injury or poisoning. Of these, 13,762 were for TBI, which represents 9% of all hospital admissions patients who had a primary diagnosis of injury or poisoning.

- Of those admitted to the hospital for TBI, 62.5% were male and 37.5% were female. When comparing rates, males were 1.8 times more likely to be admitted to the hospital following a TBI than females. The age-adjusted rate for hospital admissions was higher in blacks compared to whites.

- The age group with the highest age-specific rate of hospital admissions due to TBIs was the 85+ year olds. The lowest age-specific rate of hospital admissions due to TBIs was the 1-4 year old population. The age-specific rates began increasing with the 65+ year olds.

- For 2003-2005, the total charges due to TBI patients who were admitted to the hospital were $422 million. The majority of the patients had Medicare/Medicaid (36%) or commercial insurance (30%). The average length of stay for a TBI patient was 6.79 days (Range 1- 152 days) and the median length of stay was four days.

Traumatic Brain Injury

2003-2005

Introduction

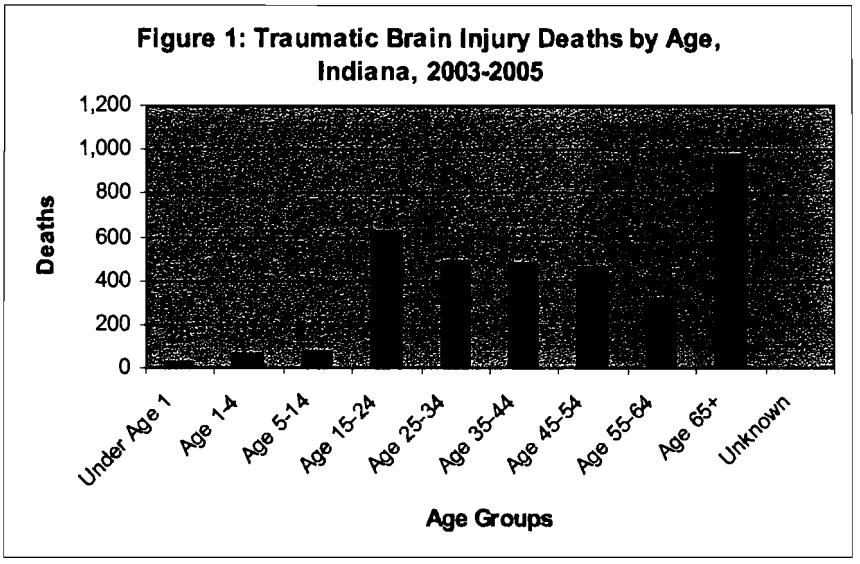
A traumatic brain injury (TBI) is defined as a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain. Not all blows or jolts to the head result in TBI. The severity of TBI may range from "mild" to "severe" and can result in short or long-term problems with independent functioning. The leading causes of TBI are falls, motor vehicle crashes, struck by/against events, and assaults. The estimated direct and indirect costs of TBI in the United States in 2000 were $60 billion.[1]

According to data from the Centers of Disease Control (CDC), 1.4 million people sustain a TBI each year in the United States. Of the 1.4 million people, 50,000 die, 235,000 are hospitalized, and 1.1 million are treated and released from an emergency department (ED) each year. In the United States, males are about 1.5 times as likely as females to sustain a TBI. Blacks have the highest rate of death from TBI compared to all other races. The age groups at highest risk for TBI are 0-4 year olds and 15 to 19 year olds.[2] The CDC has estimated that at least 5.3 million Americans, approximately 2% of the U.S. population, currently have long-term or lifelong need for help to perform activities of daily living as a result of a TBI.[3]

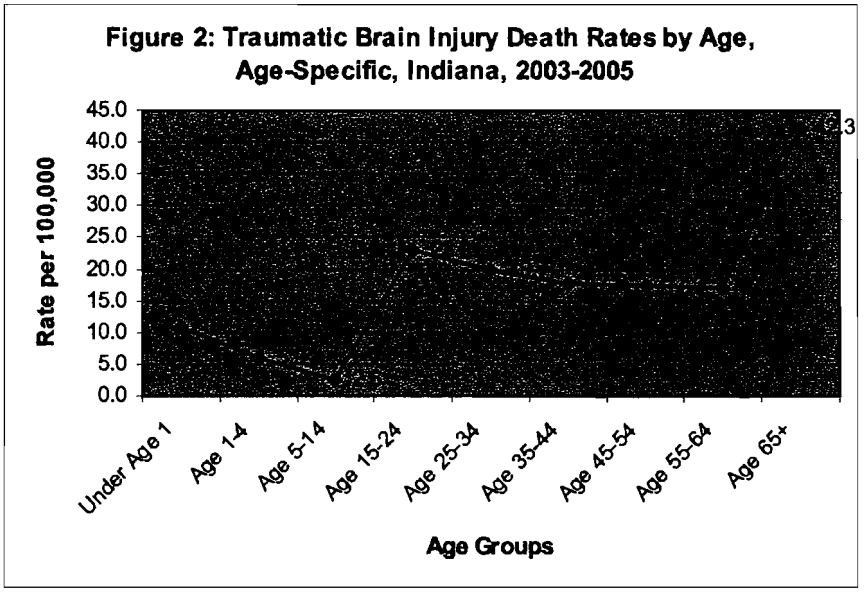
Mortality

Between 2003 and 2005, there were 3,500 TBI deaths in Indiana. More males (2,557) died than females (943), with males dying at a rate almost three times greater than females (27.8 per 100,000 for males, 9.9 per 100,000 for females). Although the number of deaths among whites (3,107) was higher than in blacks (368), the age-adjusted death rate shows that blacks (22.5 per 100,000) died more often than whites (18.7 per 100,000) in relation to their proportion in the population. Figure 1 shows the number of deaths per age category. When comparing death rates, Indiana residents over 65 years of age died most often from TBI injuries (42.3 per 100,000) followed by those ages 15-24 years (22.9 per 100,000) (Figure 2). When combining age and sex, males and females over 65 years of age had the highest rates (62.9 per 100,000 for males, 28.0 per 100,000 for females) (Table 1).[4]

When looking at race and age, whites over 65 years of age (43.6 per 100,000) had the highest rate; however for blacks the highest rate was in those ages 25-34 years (36.5 per 100,000) (Table 2). Blacks ages 15-24 years followed closely with a death rate of 34.8 per 100,000. When considering all race, sex, and age categories, white males over 65 years of age (64.8 per 100,000) and black males 25-34 years of age (64.5 per 100,000) had the highest rates with the death rates being almost identical (Table 3a). For females, whites over 65 years of age had the highest rate (28.8 per 100,000) followed by whites ages 15-24 years (11.7 per 100,000) (Table 3b). Rates for black females by age were unstable due to the low numbers of deaths in each category.[4]



Source: Indiana State Department of Health, Mortality Data, 2003-2005



Source: Indiana State Department of Health, Mortality Data, 2003-2005

Table 1: Traumatic Brain Injury Deaths and Rates by Sex and Age, Indiana, 2003-2005

	Male Number	Male Age-adjusted Rate	Female Number	Female Age-adjusted Rate
Under Age 1	15	U	13	U
Age 1-4	36	6.8	26	5.1
Age 5-14	48	3.5	22	1.7
Age 15-24	474	34.3	145	11.0
Age 25-34	393	31.2	96	7.9
Age 35-44	376	27.6	102	7.5
Age 45-54	373	28.3	86	6.4
Age 55-64	244	27.4	71	7.5
Age 65+	596	62.9	382	28.0
Unknown	3	--	0	--
Total	2,558	27.8	943	9.9

U=numerator is less than 20 and the rate is unstable.
Source: Indiana State Department of Health, Mortality Data, 2003-2005

Table 2: Traumatic Brain Injury Deaths and Rates by Race and Age, Indiana, 2003-2005

	White Number	White Age-adjusted Rate	Black Number	Black Age-adjusted Rate	Other Number	Other Age-adjusted Rate
Under Age 1	26	11.9	2	U	0	U
Age 1-4	54	6.1	6	U	1	U
Age 5-14	60	2.6	9	U	1	U
Age 15-24	522	22.2	94	34.8	3	U
Age 25-34	397	18.4	87	36.5	5	U
Age 35-44	417	17.2	54	23.5	7	U
Age 45-54	406	16.9	51	25.0	2	U
Age 55-64	285	16.8	28	23.8	2	U
Age 65+	939	43.6	37	27.4	2	U
Unknown	1	--	0	--	2	--
Total	3,107	18.7	368	22.5	25	5.2

U=numerator is less than 20 and the rate is unstable.
Source: Indiana State Department of Health, Mortality Data, 2003-2005

Table 3a: Traumatic Brain Injury Deaths and Rates by Race and Age, Males, Indiana, 2003-2005

	Males			
	White Number	**White** Age-adjusted Rate	**Black** Number	**Black** Age-adjusted Rate
Under Age 1	13	U	2	U
Age 1-4	32	7.1	2	U
Age 5-14	39	3.3	8	U
Age 15-24	387	32.2	85	62.5
Age 25-34	317	28.7	74	64.5
Age 35-44	328	26.9	42	38.5
Age 45-54	331	27.6	40	42.5
Age 55-64	219	26.6	23	43.0
Age 65+	573	64.8	21	39.5
Unknown	1	--	0	--
Total	2,240	27.4	297	37.9

U=numerator is less than 20 and the rate is unstable.
Source: Indiana State Department of Health, Mortality Data, 2003-2005

Table 3b: Traumatic Brain Injury Deaths and Rates by Race and Age, Females, Indiana, 2003-2005

	Females			
	White Number	**White** Age-adjusted Rate	**Black** Number	**Black** Age-adjusted Rate
Under Age 1	13	U	0	U
Age 1-4	22	5.1	4	U
Age 5-14	21	1.9	1	U
Age 15-24	135	11.7	9	U
Age 25-34	80	7.6	13	U
Age 35-44	89	7.4	12	U
Age 45-54	75	6.2	11	U
Age 55-64	66	7.6	5	U
Age 65+	366	28.8	19	U
Unknown	0	--	0	--
Total	867	10.3	74	8.7

U=numerator is less than 20 and the rate is unstable.
Source: Indiana State Department of Health, Mortality Data, 2003-2005

Morbidity

Hospital discharge data was queried using SAS, version 9.0 for TBI-related codes in any diagnosis field. Due to some patients having multiple TBI diagnosis, the data summarizes the first TBI code presented for each patient. TBI codes include: 800(.0-.9), 801 (.0-.9), 803(.0-.9), 804(.0-.9), 850(.0-.9), 851(.0-.9), 852(.0-.5), 853(.0-.1), 854(.0-.1), 950(.0-.3), 959.01, and 995.55.

Hospital discharge data give an indication of the number of TBI injuries in Indiana although the data have limitations. The hospital data base does not contain a patient-specific unique identifier, meaning that it does not distinguish whether one person had five visits or whether five people visited once. Therefore, statistics only reflect visits and not specific numbers of people. Also race/ethnicity data is not very accurate because race/ethnicity is at the discretion of the person reporting the data and may not reflect how the individuals would define themselves.

A major limitation of the hospital discharge data is that Indiana law does not mandate e-coding of hospital records. Only 55% of hospital records are e-coded. Also, Indiana law only requires hospital discharge data submission by acute care hospitals. Therefore, a few psychiatric and behavioral health hospitals do not submit data. All acute care hospitals are submitting inpatient data. However, one of the three Level 1 Trauma center hospitals has not submitted outpatient/emergency department data yet. As a result, **the total number of TBI incidents for the outpatient/emergency department data is an underestimation of the actual number of traumatic brain injuries and should be used with caution.**

Emergency Department Data

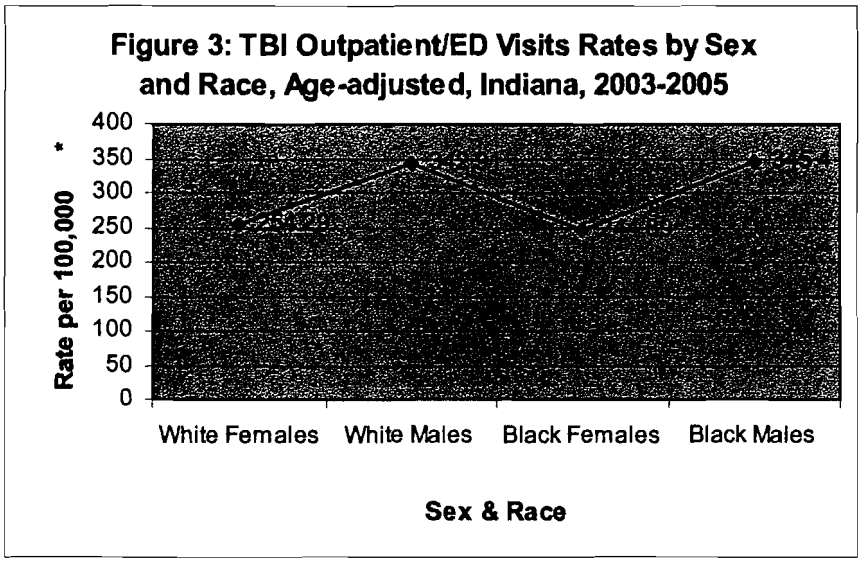
During 2003-2005, there were 1,662,783 outpatient/emergency department (ED) visits with a primary diagnosis for injury or poisoning (ICD-9-CM) codes 800-999. Of the 1,662,783 outpatient/ED visits, 63,936 were visits related to TBI and represented 4% of all outpatient/ED visits.[5]

Of those receiving treatment at the outpatient/ED, 57% (36,663) were male, and 43% (27,270) were female (three people's gender was unknown). When comparing rates, males had a higher rate of outpatient/ED visits than females (393.51 per 100,000 compared to 287.50 per 100,000). The majority (49,351/63,936) of the admissions to the outpatient/ED were white Indiana residents. Blacks made up 7.9% (5,074/63,936) and those in the minority/other category were 14.9% (9,511/63,936) of visits. The age-adjusted rates for visits to the outpatient/ED were similar for whites and blacks (300.50 per 100,000 versus 295.41 per 100,000). White males accounted for 43.9% (28,036/63,936) of all visits to the outpatient/ED, white females for 33.3% (21,313/63,936), black males for 4.6% (2,947/63,936), and 3.3% for black females. However, when comparing rates black males had the second highest age-adjusted rate (345.40 per 100,000) despite the lower number of injuries (Figure 3).[5]

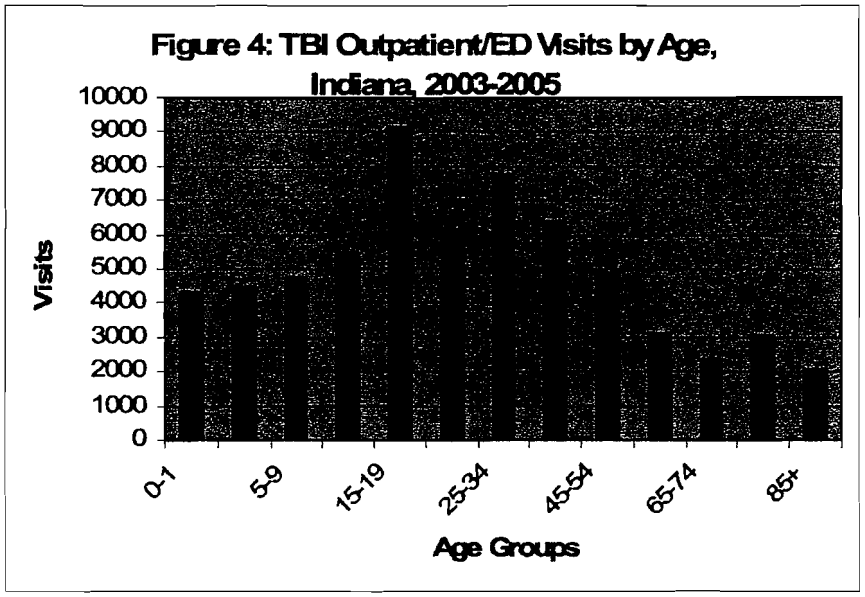
During 2003-2005, the age group with the highest age-adjusted rate of visits to the outpatient/ED due to TBIs was the 0 to 4 year olds with a rate of 1,671.12 per 100,000 followed by individuals 15 to 19 years of age with 680.74 per 100,000. The lowest age-adjusted rate of visits to the outpatient/ED due to TBIs was for those 55 to 64 years of age. Figure 4 shows the actual number of hospital outpatient/ED for each age group while Figure 5 shows the age-adjusted rate for each age group.[5]

The median total charge for patients seen in the outpatient/ED for TBI injury was $1,410.00 (Range $0-$70,658) as compared to the mean total charge for all ages of $1,875.00 (Range $0 - $70,658) (4). For 2003-2005, the total charges for TBI that were treated in an outpatient/ED

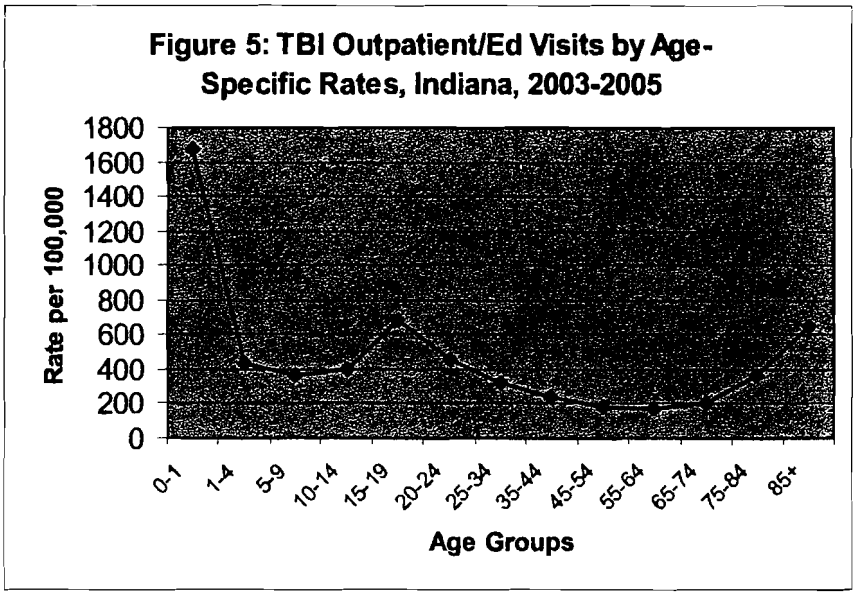
were $119 million. The majority of the patients had commercial insurance (34%, 21,819/63,936) or Medicare/Medicaid (28%, 17,992/63,936) (Figure 6).[5]



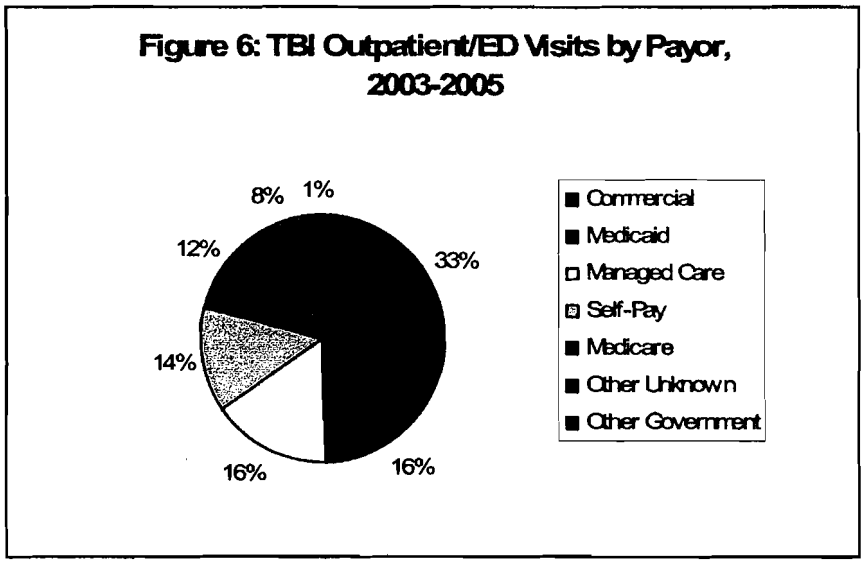
Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005

Inpatient Hospital Data

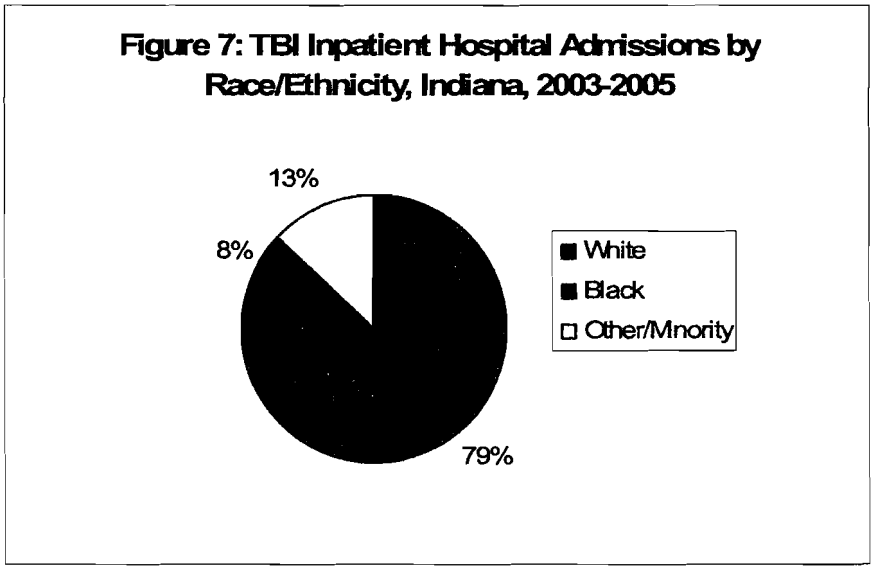
From 2003-2005, there were 161,198 inpatient hospitalizations with a primary diagnosis of injury or poisoning. Of these, 13,762 were TBI which represent 9% of all hospital admissions for patients who had a primary diagnosis of injury or poisoning.[5]

Of those admitted to the hospital 62.5% (8,599/13,762) were male and 37.5% (5,162/13,762) were female (one person's gender was unknown). When comparing rates, males were 1.8 times

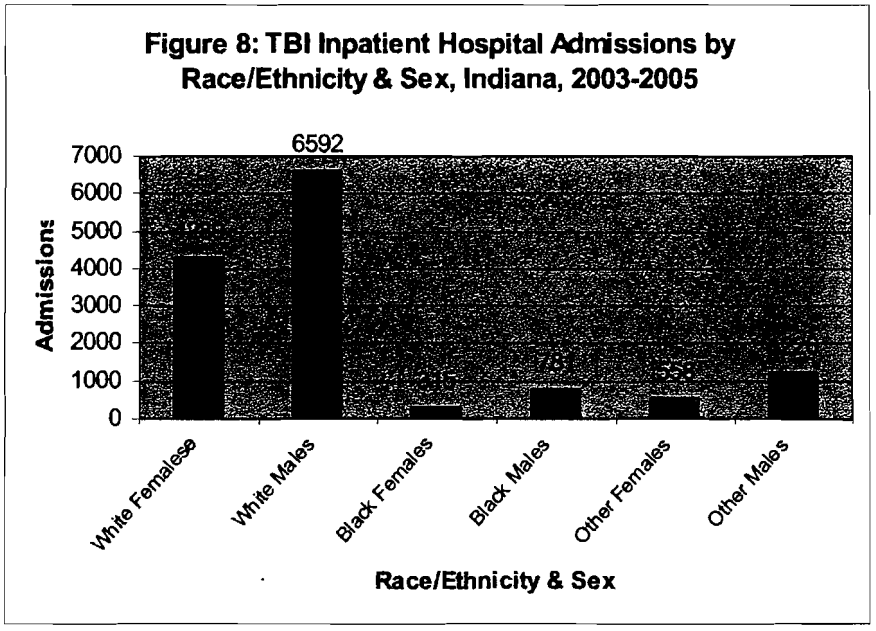
more likely to be admitted to the hospital following a TBI than females. The majority (79%, (10,882/13,762) of the hospital admissions were white Indiana residents (Figure 7). However, the age-adjusted rate for hospital admissions was higher in blacks compared to whites (70.56 per 100,000 versus 65.00 per 100,000). White males accounted for 61% (6,592/10,881) of all hospital admissions by white residents (Figure 8). However, black males had a higher age-adjusted rate (105.75 per 100,000) compared to white males (82.16 per 100,000). White females though had a higher adjusted rate of hospital admission compared to black females (47.73 per 100,000 and 39.17 per 100,000).[5]

During 2003-2005, the age group with the highest age-specific rate of hospital admissions due to TBIs was the 85+ year olds (396 per 100,000). The lowest age-specific rate of hospital admissions due to TBIs was the 1-4 year old population. The age-specific rates began increasing with the 65+ year olds. However, the 0-1 year olds and 15-19 year olds had rates over 100 (131 per 100,000 and 100 per 100,000). Figure 9 shows the actual number of hospital admissions for each age group while Figure 10 shows the age-adjusted rate for each age group.[5]

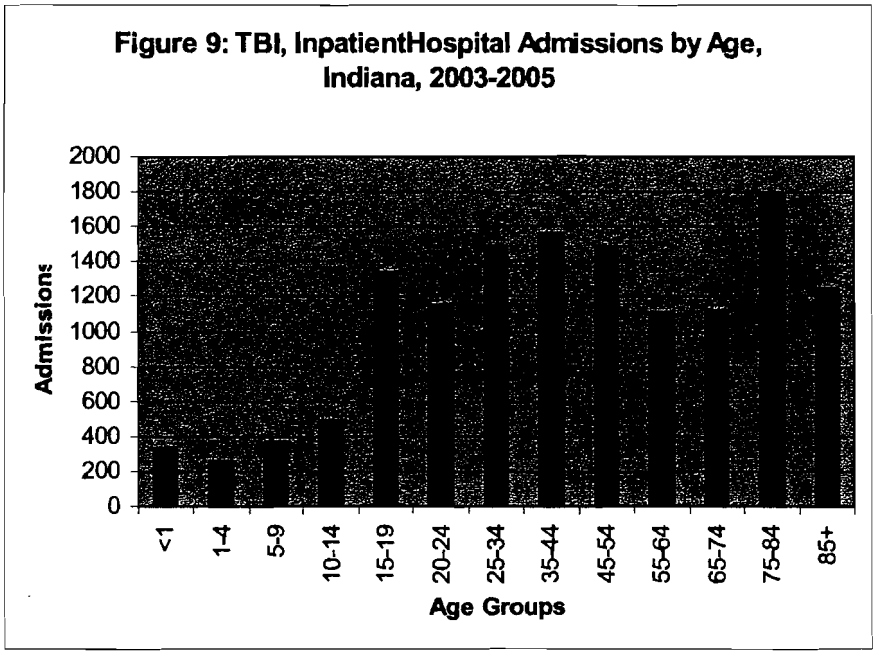
The median total charge for patients admitted to the hospital for TBI was $30,803 (Range $63.00-$780,345) as compared to the mean total charge for all ages of $15,037 (Range $63.00-$780,345) (4). For 2003-2005, the total charges due to TBI patients who were admitted to the hospital were $422 million. The majority of the patients had Medicare/Medicaid (36%, 4,979/13,762) or commercial insurance (30%, 4,014/13,762) (Figure 11). The average length of stay for a TBI patient was 6.79 days (Range 1- 152 days) and the median length of stay was four days.[5]



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005



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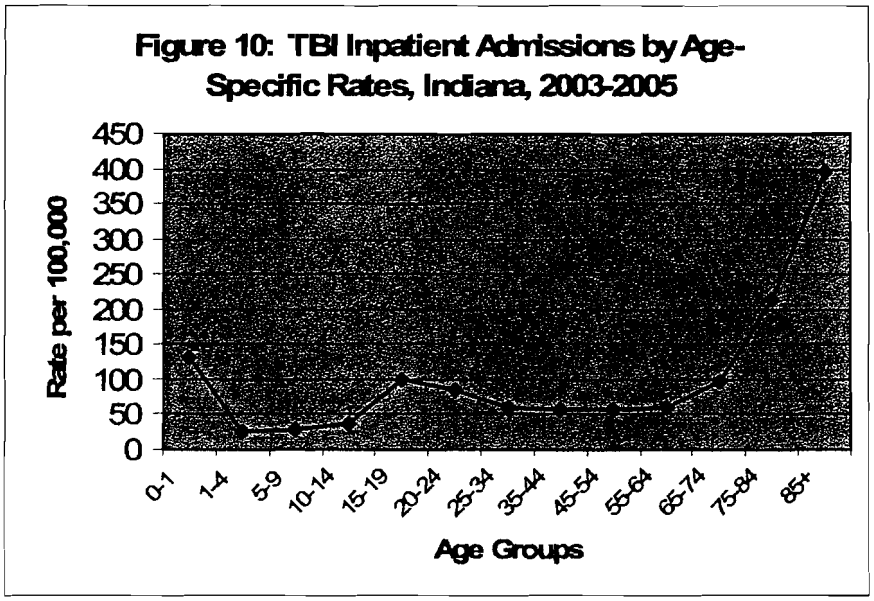

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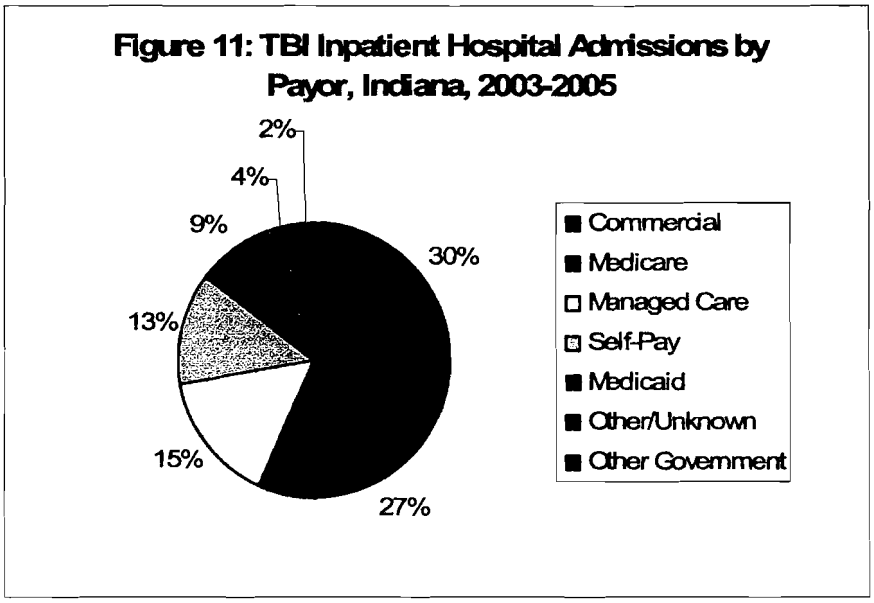

Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005

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Indiana Family and Social Services Administration
Brain Injury Association of Indiana
2007 Indiana State-Wide Traumatic Brain Injury Needs and Resources Assessment
Final Report

May 2008

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Executive Summary

The Indiana Statewide Needs and Resources Assessment for Traumatic Brain Injury (TBI) was conducted during the spring and fall of 2007. The primary source of data was a survey of TBI survivors which was completed by 378 individuals. Secondary sources of information included a literature review, a web-based survey of service providers completed by 58 individuals, focus groups conducted in various regions of the state with TBI survivors, and focus groups conducted with special populations, including caregivers of TBI survivors who are residents in long-term care facilities, special education teachers and caregivers of survivors who are under 18, and state agency staff.

Approximately 70% of survey respondents were male; 30% female. The majority were in the 20-49 age bracket. The majority reported they sustained their TBI as a result of a car crash, and reside in a house or apartment.

Significant findings from the needs assessment include:

- The most prevailing issue that surfaced was the lack of awareness around TBI. This included how to recognize TBI in medical or non-medical settings, how to locate and utilize available resources for survivors and families, and general public awareness of TBI.

- The top five services that survey respondents indicated they needed, but did not receive were: Behavioral Supports, Support Groups, Assistive Technology, Cognitive Training and Recreational Opportunities.

    - Of these, Recreational Opportunities/ Therapeutic Recreation had the least number of providers across the state suggesting that this area may be one of the largest unmet needs for TBI survivors.

- Respondents indicated that they had difficulty with the transition from inpatient/ hospital based care to return to home and work. They did not know how to find resources or negotiate the various government programs and reported not being aware of numerous resources and often felt "dumped" once they were no longer met criteria for receiving services.

- Survey and focus group data strongly indicate that Indiana is in need of options, such as a group home or other supervised living facility, that can provide housing and assistance specifically oriented to TBI survivors.

- Increasing awareness of TBI among various professional groups as well as the general public, providing or facilitating medical education, and finding a "champion" who could be the public face of TBI in Indiana were viewed as potential goals for the Brain Injury Association of Indiana.

Traumatic Brain Injury: Comprehensive Services for Post-Acute Care and Rehabilitation

Request Context

How can Indiana's Traumatic Brain Injury (TBI) population be better served in state rather than out of state? What recommendations can MMAC provide for a system of care for TBI patients to be served in Indiana rather than Illinois (Carbondale)? Focus on patients that are in need of longer-term rehabilitation, i.e., post TBI (e.g. patients with moderate-severe TBI deficits with behavioral dyscontrol). Emphasize evidence-based practices (EBPs), and where not available, best practices/practice guidelines, or expert opinion. A subsequent report will address cost-effectiveness issues related to this topic.

TBI Definition

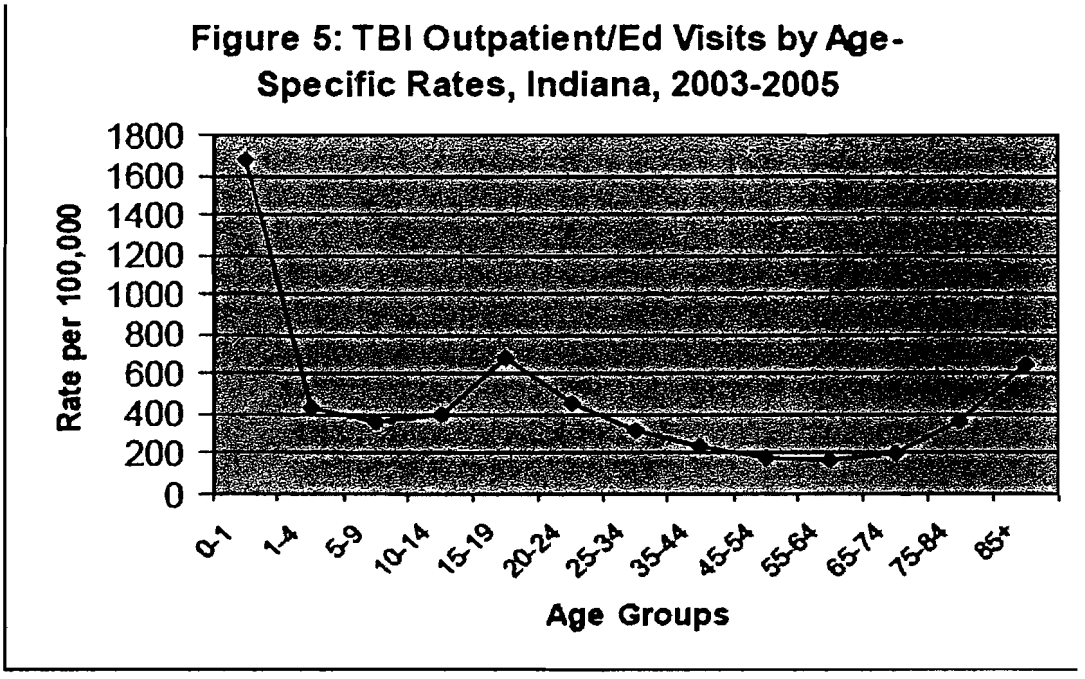
TBI is defined as damage to brain tissue caused by an external mechanical force, as evidenced by medically documented loss of consciousness or post-traumatic amnesia (PTA) due to brain trauma, or by objective neurological findings that can be reasonably attributed to TBI on physical examination or mental status examination [1]. Clinical indices of moderate-severe TBI injury include the following: PTA>24 hrs, loss of consciousness>30 minutes, Glasgow Coma Scale score[2] in the ER<13 (assess eye responses, best verbal response, best motor response [3, 4]), or the presence of intracranial neuroimaging abnormalities.

Scope of Problem/Public Health Impact

Trauma is the leading cause of death in people under 45 years of age, and TBI is the leading cause of death and disability due to trauma, with an estimated cost to society of $60 billion per annum [5] . In the civilian community the incidence of TBI is 1.4 million cases per annum, while 5.3 million or approximately 2% of Americans currently live with disabilities as a result of TBI. It is estimated that 50,000 patients per annum die from TBI sequelae, while 20% of new cases fall into the moderate-severe TBI injury severity range, and therefore at high risk for long term cognitive and functional impairment due to their injury [5]. In a national longitudinal study (conducted over a 15-year period) of over 8,000 patients with moderate-severe TBI, approximately 35% of patients required some supervision at 1- and 2 years post-injury [1] . In this cohort, maximal functional improvement occurred between 18-24 months post injury. Males are twice as likely as females to have a TBI event, and common TBI causes are vehicular, violence (gun-related and other types of physical violence), sports, and falls. Rates of TBI have declined somewhat over the last 2 decades in part due to public health safety measures (e.g. helmet, seatbelt, and DWI laws).

Public Health Impact in Indiana

Based on an ISDH report [6] covering the period of 2003-2005, there were 3,500 TBI deaths in Indiana, or approximately 1,750 deaths per annum. Of 1,662,783 outpatient/emergency department (ED) visits with a primary diagnosis for injury or poisoning, 63,936 were visits (not unique cases) related to TBI, which represented 4% of all outpatient/ED visits. The total charges for TBI that were treated in an outpatient/ED were $119 million. The majority of the patients had commercial insurance (34%), or Medicare/Medicaid (28%) (16% had Medicaid). There were 161,198 inpatient hospitalizations with a primary diagnosis of injury or poisoning. Of these, 13,762 were for TBI, which represents 9% of all hospital admissions patients who had a primary diagnosis of injury or poisoning. For 2003-2005, the total charges due to TBI patients who were admitted to the hospital were $422 million. The majority of the patients had Medicare/Medicaid (36%) (9% had Medicaid) or commercial insurance (30%). The average length of stay for a TBI patient was 6.79 days. (Range 1- 152 days) and the median length of stay was four days. The first TBI ICD-9 code identified for each case was used as their "primary diagnosis" and TBI codes surveyed included: 800(.0-.9), 801 (.0-.9), 803(.0-.9), 804(.0-.9), 850(.0-.9), 851(.0-.9), 852(.0-.5), 853(.0-.1), 854(.0-.1), 950(.0-.3), 959.01, and 995.55. Thus, paralleling the national figures, TBI has a substantial public health impact in Indiana, is a major cause of mortality in the young and elderly (see figure below), and morbidity, based on OP/ER/and acute inpatient care patterns and costs. The report did not cover an analysis of longer-term utilizations and costs, relevant to sub-acute rehabilitation settings.



Source: Indiana State Department of Health, Hospital Discharge Data, 2003-2005

Lack of Evidence-Based Practices for Sub-acute TBI Rehabilitation

Despite this high level of need, there are few treatment interventions (pharmacologic or psychosocial) for the neurocognitive and neuropsychiatric sequelae of TBI that have a solid scientific foundation. Closed head injuries due to direct and indirect (contra-coup) impacts may produce a range of neuropsychiatric symptoms, making findings across clinical studies difficult to compare. The most common type of CNS cellular injury in this context is a pattern of diffuse axonal injury that may even be difficult to detect by modern structural imaging methods. Common TBI clinical presentations include dysexecutive states with personality change and irritability (orbito-frontal cortical damage), diminished cognitive flexibility and ability to abstract (dorsolateral prefrontal cortex dysfunction), mutism/apathy (anterior cingulated/medial prefrontal cortex damage), and post-traumatic confusion (temporal lobe and hippocampal damage)[7]. Efforts to link intensity of acute rehabilitation services following TBI to clinical outcomes in n=491 patient across 3 sites in the NIDRR cohort study, revealed a positive relationship between intensity of rehabilitation and motor functioning, but not cognitive functioning at discharge [8]. However, there are no data of this scope and kind, addressing the effectiveness of sub-acute , residential, rehabilitation interventions.

In addition to the clinical and treatment issues mentioned above, significant longer-term challenges face TBI patients as they attempt to readjust to family and community life. The importance of addressing family needs and general well-being in the rehabilitation of individuals with TBI has become increasingly recognized. Specifically, the caregiver role has been linked to increased stress and has been found to have a pervasive impact on family functioning. Thus, if family needs, in addition to the needs of the person with TBI, are not addressed by healthcare providers, there can be significant delays in the rehabilitation process. Clinical experts have recommended that cognitive-behavioral interventions (CBT) aimed at teaching effective stress management, coping strategies, and problem-solving skills should be provided to promote recovery [9, 10]. Furthermore, community-based employment interventions have reported return to work rates of 50-81 % in moderate-severe TBI patients at 1 year post injury [11, 12], in contrast to the best rates of 30-40% return to employment in this patient group, without specific vocational interventions [13].

Traumatic Brain Injury: Comprehensive Services for Post-Acute Care and Rehabilitation

Standard Functional Assessment Tools

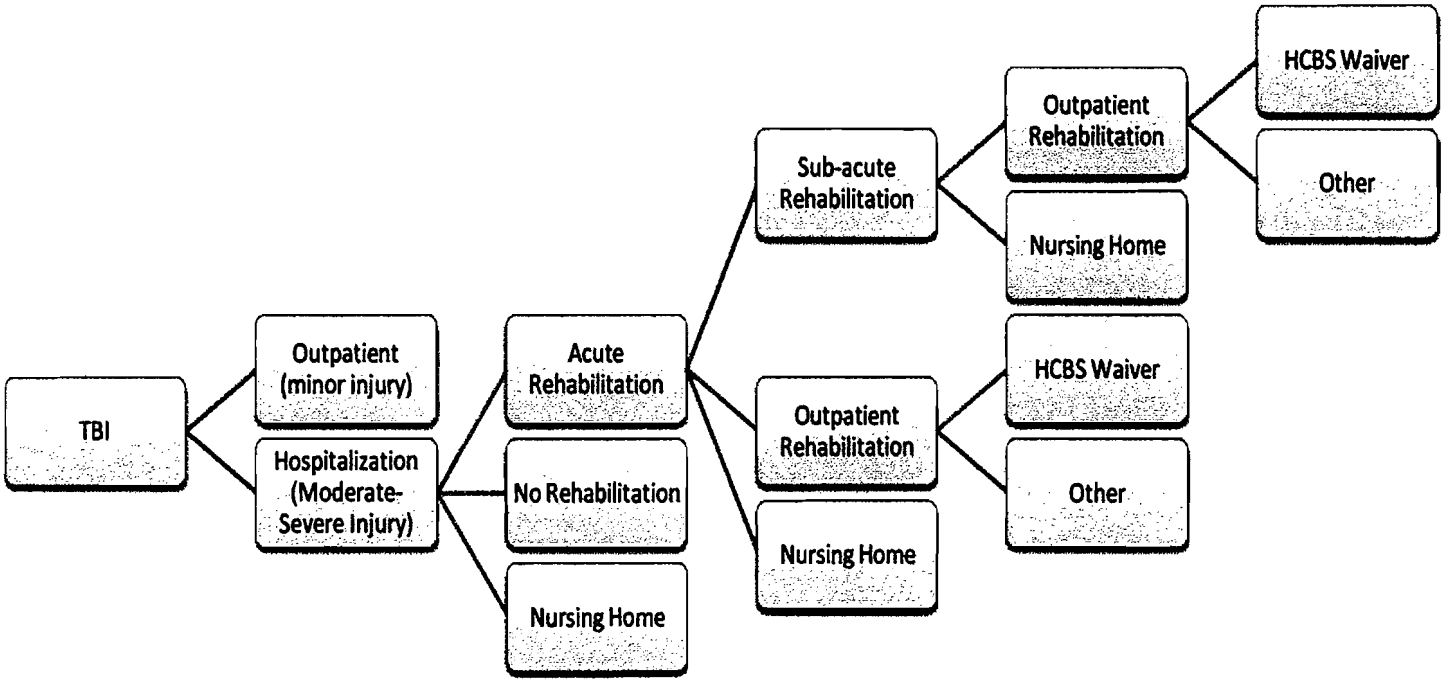
The Functional Independent Measure (FIM [14]) is a scale that rates an individual's independence level with activities of daily living. Areas of activities of daily living include self-care, bowel and bladder management, locomotion, transfers, communication, and social cognition. FIM scores range from 1-complete dependence to 7-complete independence. The Disability Rating Scale (DRS [15]) measures an individual's general functional change over the course of recovery and rates an individual's level of disability from None to Extreme (8 item scale). This scale considers cognitive and physical function; impairment; disability; and handicap to present a global depiction of the individual's disability. The DRS can track an individual's progress from "coma to community." The DRS and FIM can be viewed at the website: http://www.tbims.org/combi/list.html. Other commonly used functional improvement scales include the Glasgow Outcomes Scale-Extended version (GOS-E [2]), preferred by neurologists, the Supervision Rating scale (SRS [16]), and the Galveston Orientation and Amnesia Test (GOAT [17]) scale.

Predictors of Long-term Outcome following TBI

Beyond injury severity, poorer prognostic factors from an individual's premorbid state include lack of education, chaotic family environment, a history of substance abuse or psychiatric difficulties, a previous TBI, and unemployment status [1].

Disposition of Medicaid TBI Patients in Indiana

While the majority of Medicaid-covered patients with a TBI (80%), will have a minor injury, and make a full recovery, a minority will have a moderate to severe injury that merits ER care and hospitalization. The figure below outlines a care decision model to understand the longitudinal care process of patients in this latter group. Sub-acute rehabilitation in this model is the Carbondale, IL facility. Waiver/Home and Community-Based Services are delivered if patients qualify for a TBI waiver (long wait lists) or for the Aged & Disabled waiver (22 years old or older). The other potential waiver option is the Developmentally Disabled (DD) waiver for those under 22 years of age.



Traumatic Brain Injury: Comprehensive Services for Post-Acute Care and Rehabilitation

Current Indiana OMPP Policy

Patients with persistent moderate-severe TBI-related impairments and behavioral dyscontrol may be eligible to receive residential, longer-term rehabilitation services out-of state through Mentor ABI's Center for Comprehensive Services, based in Carbondale, IL (one of a network of 10 similar facilities throughout the country). Eligibility determinations are performed by OMPP utilizing the following inclusion criteria: a) Cognitive functioning level/Rancho Los Amigos Scale [18] score of ≥ V (confused but not agitated at baseline; I-X rank scale, www.neuroskills.com), b) reasonable expectation of improvement with therapy, c) free of acute psychiatric illness/substance abuse, d) medically stable, and e) unable to be placed and cared for appropriately in an in-state facility. Approximate per diem costs for these services are $500/day. This is in contrast to estimates of acute hospital care costs of $8000/day (mean LOS = 20 days), and acute rehabilitation hospital care of $2200/day [1] (mean LOS=25 days).

Carbondale Utilization Overview

Care activity estimates from OMPP staff suggest that, in recent months, approximately 30 patient claims per month have come from Carbondale. An initial claims analysis by MMAC surveying a 2-year period (1/1/06 - 12/31/08), found that there were 109 unique patients who had Indiana Medicaid claims from the Carbondale facility. Of these, 107 patients had an ICD-9 diagnosis code of 854.0 (intracranial injury without an open wound), while 27/109 had a 907.0 code (late effect of intracranial injury). All 109 had procedure code H2013 (Psych Health Facility Services, per diem). Further, 77/109 did not have a level of care (LOC) status (presumably many patients claims were filed after discharge), while 21 had a nursing home LOC, 6 were identified as Aging/Disabled Waiver clients, and 5 were TBI waiver clients.

Coordination of Rehabilitation Services and Providers

Rehabilitation services require coordination among multiple health service providers: primary care physicians, psychologists, physiatrists, neuropsychologists, nursing staff, and occupational, speech and recreational therapists. There are several models describing the types of care coordination that can be provided at rehabilitation facilities: these care coordination teams can be interdisciplinary, multi-disciplinary, and trans-disciplinary [19-21]. Multi-disciplinary teams contain people that work for a common goal but that do not necessarily work together (i.e., members work on their own portions and then pass it along or combine their work; the physician is the team leader). Interdisciplinary teams have members that work together collaboratively more so than multidisciplinary teams, but members still remain only in their own discipline to work towards the goal; the patient is the focus of the team. Transdisciplinary (aka "cross-functional") team members not only work together, but they also transcend their own disciplines and are cross-trained; although there is usually a single leader, all members are consulted for input fairly equally. Often, in the first two types of teams (multi- and inter-), there is a single healthcare provider who is the "leader" and ultimate decision-maker, with the patient having increased "say" in decisions and increased collaboration across members as the team style progresses from multi to inter and finally to transdisciplinary. It is argued that, as the patient has more "say" in determining his/her course of treatment, they take a more active role in managing their own conditions, and therefore, tend to experience improved outcomes over patients who do not take as active a role in their treatment [19-21]. Kumar (2000) [21] argues that, due to decreases in average length of stay in rehabilitation facilities, coupled with its task-oriented focus (e.g., assisting the patient with executing activities of daily living), transdisciplinary models have grown in popularity as an efficient means of assisting the patient with attaining the highest level of functioning possible during their time in rehab. Kumar and Chua et al. (2007) [22] further argue that transdisciplinary teams transcend the notion of care coordination due to their emphasis on care "unification," and that early admittance to a transdisciplinary program can result in improved outcomes and shorter length of stay in comparison to multi- or interdisciplinary programs. Transdisciplinary-style teams have been endorsed by several associations for rehabilitative therapy including, the American Physical Therapy Association, the American Speech-Language-Hearing Association, and the American Occupational Therapy Association [23].

Traumatic Brain Injury: Comprehensive Services for Post-Acute Care and Rehabilitation

Comparison of Rehabilitation Facilities in Indiana, Illinois, Ohio, and Michigan

Rehabilitation facilities in Indiana and neighboring states provide services to patients with TBI, ranging from mild to severe cases. They offer a variety of services and largely develop treatment programs on a case-by-case basis, designed to address the specific needs of each patient (see Table 1). The facilities offer sub-acute care to patients who have already been treated acutely in hospital settings. Most facilities do not offer longer-term care, specializing in sub-acute treatment, generally treating patients whose injury occurred no more than 24 months prior. The key exception to these treatment criteria is the Center for Comprehensive Services (CCS; Carbondale, Illinois) facility, which offers longer-term care and treatment more than 24 months post-injury. However, in terms of breadth of services, all of the facilities researched for this project (see Table 1) and all but one facility offer inpatient acute, outpatient, general neurorehabilitative, and more specific neurobehavioral services (with the exception of the Rehabilitation Institute of Michigan, which does not offer neurorehabilitative services). The key differences tended to reside in a focus on inpatient sub-acute care, offered by both Hook Rehabilitation and the CCS facility in Carbondale, as well as longer-term residential services, which was unique to the CCS facility in Carbondale, IL, as was the service of "transitional living assistance." This is not to say that the other facilities do not offer sub-acute inpatient care at all, but rather that those facilities' inpatient stays are usually restricted to acute care, and sub-acute care tends to result from returning patients, for example. The other key difference seemed to be in the capacity for brain injury rehabilitation with CCS in Carbondale serving 109 Indiana Medicaid patients between 2006 and 2008. Key pieces of data that are lacking in the research regarding these Indiana and neighboring facilities are 1) number of beds, which the Ohio Valley Center for Brain Injury does not report, and 2) per diem reimbursement rates, which tend to vary widely depending upon both patient needs and payer source.

Conclusions

Manifesting itself via a range of different etiologies and severities, Traumatic Brain Injury (TBI) is a condition affecting millions of people nationally, and thousands within the state of Indiana. It one of the leading causes of mortality in individuals < 45 years of age. Patients with a moderate-severe TBI injury are at high risk for long-term neuropsychiatric sequelae, with a high probability of ongoing disability, social dependence, and inability to maintain employment. The young and the elderly (>70 years old) are disproportionately affected.

Patients with chronic complications of TBI appear to have cognitive and functional improvement up until 18-24 months post injury. After this time there is little additional improvement (presumably due to limitations in brain plasticity and axonal regeneration by then), and, over the long-term, patients face the task of adapting to fixed cognitive deficits, and their impact on daily functioning, thus managing the lasting deficits as a chronic condition.

There are no compelling clinical studies demonstrating superior long-term outcomes attributable to sub-acute residential rehabilitation for the moderate-severe TBI patient with behavioral dyscontrol, beyond the benefits of acute medical care (average LOS=20 days) and acute rehabilitation (average LOS=25 days). Care planning is based on careful case-by-case assessment by clinical experts. There are few codified national care guidelines or evidence-based practices to inform decision-making of clinical providers after the acute injury care period. This is in part due to the challenges inherent in designing ethical, adequately-powered, controlled clinical trials in such a clinically heterogeneous and vulnerable patient group. The lack of care guidelines apply to both somatic and psychosocial interventions.

The delivery of sub-acute rehabilitation care to this population is heavily determined by payer source, access to specialty care, and the patient's immediate social network. The agitated patient or patient with poor frustration tolerance may need nursing home placement if their social supports are limited. However, there appear to be few in-state nursing homes that are equipped to care for the TBI population. Mental health services are available for the management of the BI patient with acute agitation, but these generally take the form of brief inpatient, crisis interventions, rather than comprehensive sub-acute rehabilitation.

Clinical experts have emphasized the key role of family/care giver education, support, and psychotherapies for

successful community integration. Some states (MI) have been active in creating and monitoring peer support programs for TBI victims. Others have developed multiple family and patient group therapies (e.g., the BICS protocol) which have been manualized and are currently undergoing effectiveness testing in multisite trials [24]. Vocational interventions are effective for the patient with moderate-severe TBI, and have been linked to high rates of employment at 12 months post-injury.

The issues pertaining to Indiana Medicaid patients who receive treatment in Carbondale, IL, at CCS are complex in nature, as the reasons for admission are unique to each patient's social situation and their particular pattern and type of injury. Indiana Medicaid patient flow through Carbondale approximates 50 unique patients per annum, with the majority of these having sustained a moderate-severe closed head injury. Carbondale's large facility (providing a potential economy of scale), comprehensive battery of service offerings, as well as its reliance upon transdisciplinary teams suggest that, for a subset of Indiana Medicaid recipients with moderate to severe TBI, who have ongoing neurobehavioral rehabilitation needs, this facility offers highly specialized and unique programming within our region.

Recommendations

1) The case for creating a sub-acute TBI residential rehabilitation unit within state will ultimately come down to an analysis of cost/efficiency, as well as other clinical issues such as continuity/integration of care. Since replicating a rehabilitation facility of the scope of Carbondale is likely to be very costly, one option would be to run a pilot program of sub-acute rehabilitation within existing Indiana rehabilitation facilities such as RHI, Kindred or Hook Rehabilitation, in order to determine cost, efficiency, and clinical outcomes for MA recipients with TBI, while continuing to have the option of Carbondale referral when necessary. The notion of in-state facilities offering a spectrum of services, including sub-acute rehabilitation is appealing from the continuity of care standpoint, and ease of quality/program monitoring. In addition, offering these services within-state may more effectively support family and community reintegration in the 'ong run.

2) Relevant to the funding of potential within-state TBI programs of this type is the concept of an auto insurance levy which might apply to all drivers in the state. An example of this type of initiative is the Michigan "auto no fault" program which offers TBI survivors life-time financial support for their care needs. Other funding approaches might include the development of a braided funding stream from the various state agencies that work with the TBI population (e.g. vocation rehabilitation, DMHA, education, and criminal justice/DOC).

3) Since there are no clinical studies demonstrating superior long-term outcomes attributable to sub-acute residential rehabilitation for the moderate-severe TBI patient with behavioral dyscontrol, beyond the benefits of acute medical care and acute rehabilitation (generally spanning the first 2-3 months of post-injury care), MMAC recommends that strong consideration should be given to other less-costly care models that would support TBI patients in their local IN community, e.g., day hospital care, intensive case management/care management, or ACT/outreach team models. These models might be similar to intensive outpatient programs (IOPs) currently available to patients with severe mental illness (SMI) or dual diagnosis problems, which are established evidence based practices in these populations.

4) Outpatient care models for TBI sub-acute rehabilitation are likely to have success if they include interventions that support family and caregiver functioning, provide peer support, and specific vocational interventions. IOP or disease management programs should also take into account the high prevalence of psychiatric (depression/anxiety/psychotic syndromes) and substance abuse comorbidities in recovering TBI patients, and systematically address these areas as a part of comprehensive care.

5) There is evidence from the NIDRR longitudinal study that functional improvements are maximal within 18-24 months of initial injury. Accordingly, one recommendation for current resource management of sub-acute TBI rehabilitation 'ould be to include time from injury as a component of the criterion for MA payment of these services. Additional revisions to MA payment criteria should include a clinical severity threshold based on functional measures currently utilized by the field (e.g. the DRS, GOS-E or FIM).

6) MMAC also recommends/endorses state-level interventions to complement the care of TBI patients across Indiana For example, a 1-800 information line similar to the Smoking Cessation initiative currently in place, could be an additional resource to families in crisis following a TBI injury. Early involvement of families and patients with the Brain Injury Association of Indiana, is likely to complement other residential and outpatient care initiatives, and this resource could be presented via the 1-800 line.

7) MMAC proposes that additional claims/utilization analyses be conducted on data extracted by provider identification, patient diagnosis code, and Medicaid program (e.g., Care Select) to accomplish several goals: 1) describe the patient population at both the Carbondale facility and Indiana facilities offering similar services; 2) discern whether there are systematic differences between those receiving services at the Carbondale facility versus Indiana facilities in terms of diagnosis code, for example, and 3) begin to offer viable suggestions for potentially implementing effective TBI rehabilitation services in Indiana, akin to those offered at Carbondale. A Markov type analysis based on the disposition/care flow figure developed in this report will assist in the comparison of expected vs. observed utilization rates in each care setting, thereby facilitating judgments regarding the appropriateness of care, as well as identification of potential gaps in the care of this patient group.

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Traumatic Brain Injury: Comprehensive Services for Post-Acute Care and Rehabilitation

TABLE 1

	Facility Name	Neuro-rehabilitation Services Offered	Neuro-behavioral Services Offered	Inpt Acute Care	Inpt Sub-acute Care	Outpt	Longer Term Residential	Transitional Living Assistance	Number of Beds or Patients Counts	Medicaid Provider	Team Type	Per Diem Reimbursement Acute Care	Per Diem Reimbursement for Inpt Rehab
Indiana Facilities	Rehabilitation Hospital of Indiana (A)	Yes	Yes	Yes	No	Yes	No	Yes (units onsite)	89 (total)	Yes (?)	Inter disciplinary	Information Not Available	Information Not Available
	Hook Rehabilitation (B)	Yes	Yes	Yes	Yes	Yes	No	Yes (Home Independence Program; 3-4 days/week)	12 for brain injury; 30 for subacute; 42 for acute	Yes	Inter disciplinary	Information Not Available	Information Not Available
	HealthSouth Deaconess Rehabilitation Hospital (Evansville, IN; C)	Yes	Yes	Yes	No	Yes	No	No	80 (total)	Yes	Inter disciplinary	Information Not Available	Information Not Available
Model TBI Facilities	Rehabilitation Institute of Michigan (D)	Yes	No	Yes	No	Yes	No	No	15-20 for brain injury	Yes	Inter disciplinary	Est. $8000	Est. $2000
	Ohio State University Dodd Rehabilitation Hospital: Ohio Valley Center for Brian Injury (E)	Yes	Yes	Yes	No	Yes	No	No	Information Not Available	Yes (?)	Inter disciplinary (?)	Information Not Available	Information Not Available
Carbondale Facility	Mentor ABI Center for Comprehensive Services (Carbondale; F)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	109 Indiana Medicaid Patients at Carbondale from 1/1/06 to 12/31/08	Yes	Trans disciplinary	$550-$567	$350-$438

A http://www.rhin.com/
B http://www.ecommunity.com/hookrehab/
C http://www.deaconess.com/body.cfm?id=130
D Personal communication with Dr. Robin Hanks, PhD, and http://www.rimrehab.org/
E Personal communication with Dr. John Corrigan, PhD, and http://www.ohiovalley.org/ and http://medicalcenter.osu.edu/patientcare/healthcare_services/physical_rehabilitation/services_procedures/Pages/index.aspx#brain
F http://www.mentorabi.com/standard/page.aspx?guid=79e0e063-2487-4993-85b2-625d80359118 , "Instructions for Provider Requests for Out-of-State Traumatically Brain Injured Services" (per OMPP), preliminary data analyses by MMAC

Traumatic Brain Injury:

Systems of Care, Staffing Models, and Funding Models

Background and Context

The Medicaid Medical Advisory Cabinet (MMAC) was asked to follow-up on the Traumatic Brain Injury (TBI) project (original report submitted 6/25/09). The Office of Medicaid Policy and Planning (OMPP) asked that the MMAC to develop further recommendations regarding Medicaid's approach to providing treatment and services to those with TBI. Specifically, OMPP would like to know what steps Medicaid should take to formulate a "system of care" approach to addressing TBI in Indiana, including what a system of care might look like, possible staffing models for implementing any additional services or facilities, as well as models for potential funding options.

This report describes each of these aforementioned components: a system of care, staffing models, and funding models. Forthcoming will be an Indiana Medicaid data-driven comparison of services and expenditures for those with TBI versus those without. This data analysis, for which data is currently being extracted and aggregated, will help to develop a more concrete picture of the current state of TBI in Indiana, as well as a set of recommendations, customized to meet the identified needs of those with TBI in this state. Again, the overarching goal of this TBI project is to identify different means to more successfully and effectively meet the needs of those with TBI in Indiana, especially those currently receiving services out-of-state.

Systems of Care

Introduction

Traumatic Brain Injury in Indiana accounts for over 21,000 outpatient visit and 4,600 hospitalizations per year. The highest visit rates occur in 0-4 year olds and 15-19 year olds. The Median total charges average $1,400 ($0-$71,000) per visit or $40 M/year. About 16% of visits are paid by Medicaid and 14% are "self pay" or uninsured. 17% of TBI are more severe and require hospitalization. The average LOS when hospitalized is 6.8 days (1-152 days) with a median total charge of $31,000 ($63-$780,000) or $140 M/year. 9% of those hospitalized have Medicaid and 13% are self-pay (uninsured) so if unable to work are likely to be enrolled in Medicaid [6]. Of people with TBI, 4% die and 2% end up needing long term help with Activities of Daily Living (such as bathing and feeding) [7]. TBI has high morbidity and mortality rate, it has high burden on families and high cost in human capital and dollars. Given complexity of needs, services and funding streams a "system of care" is needed to address TBI in Indiana.

Demographics and Characteristics of TBI

The demographic and characteristics from a national sample of moderate to severe TBI population in have implications for Medicaid. TBI patients are an average of 39 years old, predominantly male (74%), with high school education or less (64%), disproportionately from minority population (33%) and nearly half (44%) had an elevated blood alcohol level at the time of the accident. The cause of TBI in adults

with moderate to severe TBI was predominantly vehicular, a fifth falls and over 10% due to violence. Hence, the characteristics of the TBI population have implications for the type and structure of long term care needs, vocational needs, and drug and alcohol rehab needs for adults who are likely to be or become Medicaid eligible. See Figure 1.

This paper focuses on those with moderate to severe TBI, defined as those who were admitted to the hospital for at least one day with a primary diagnosis of TBI (See Appendix 1 for CDC definitions of Traumatic Brain Injury Diagnosis ICD-9 CM Codes). For those with mild TBI, patients have minimal symptoms resolving within 6 months and, according to a review by Comper et al. (2005; [8]), most post-concussion symptoms are responsive to vocational rehabilitation, counseling and patient education, cognitive rehabilitation, therapeutic exercises and judicious use of medications. Most deaths from TBI are due to severe injury and multiple traumas and occur within 48 hours [8].

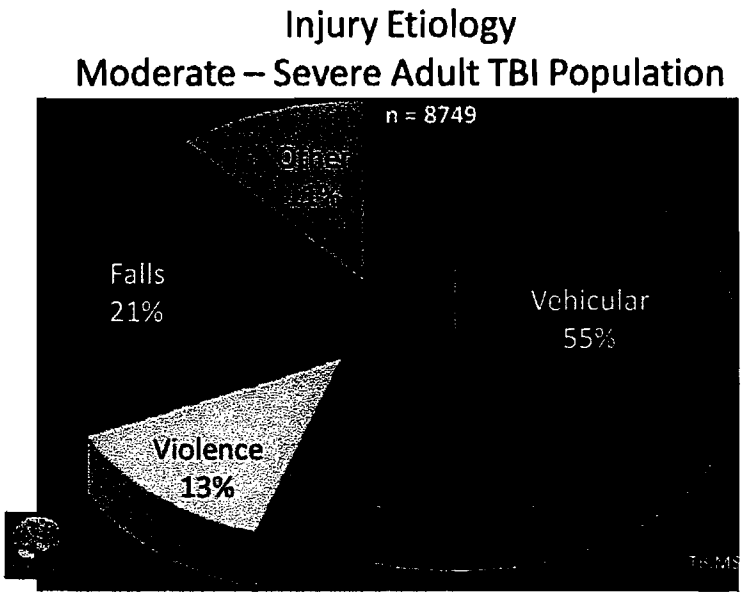


Figure 1: Causes of Injury for Moderate-Severe Traumatic Brain Injury

Need for a System of Care

TBI has high morbidity and mortality rate, it has high burden on families and high cost in human capital and dollars. Two years after moderate to severe brain injury about 2/3 of patients will not need supervision, 7% require overnight supervision, 18% require part-time supervision, 5% require full time, indirect supervision and 4% require full time direct supervision [7]. The simplified schematic to the right (see Figure 2) shows where patients with moderate to severe TBI can be receiving services at any given time. In reality, this is a dynamic process with patients moving between services. The schematic is hypothesized to represent the most prevalent types of services and pathways that those with moderate to severe TBI in Indiana follow.

For issues that have a complexity of needs, services and funding streams a "system of care" is needed. What is a system of care? The following definition (see Figure 3) is adapted for TBI from a definition published in 1986 to address the care for children with emotional disorders:

Traumatic Brain Injury

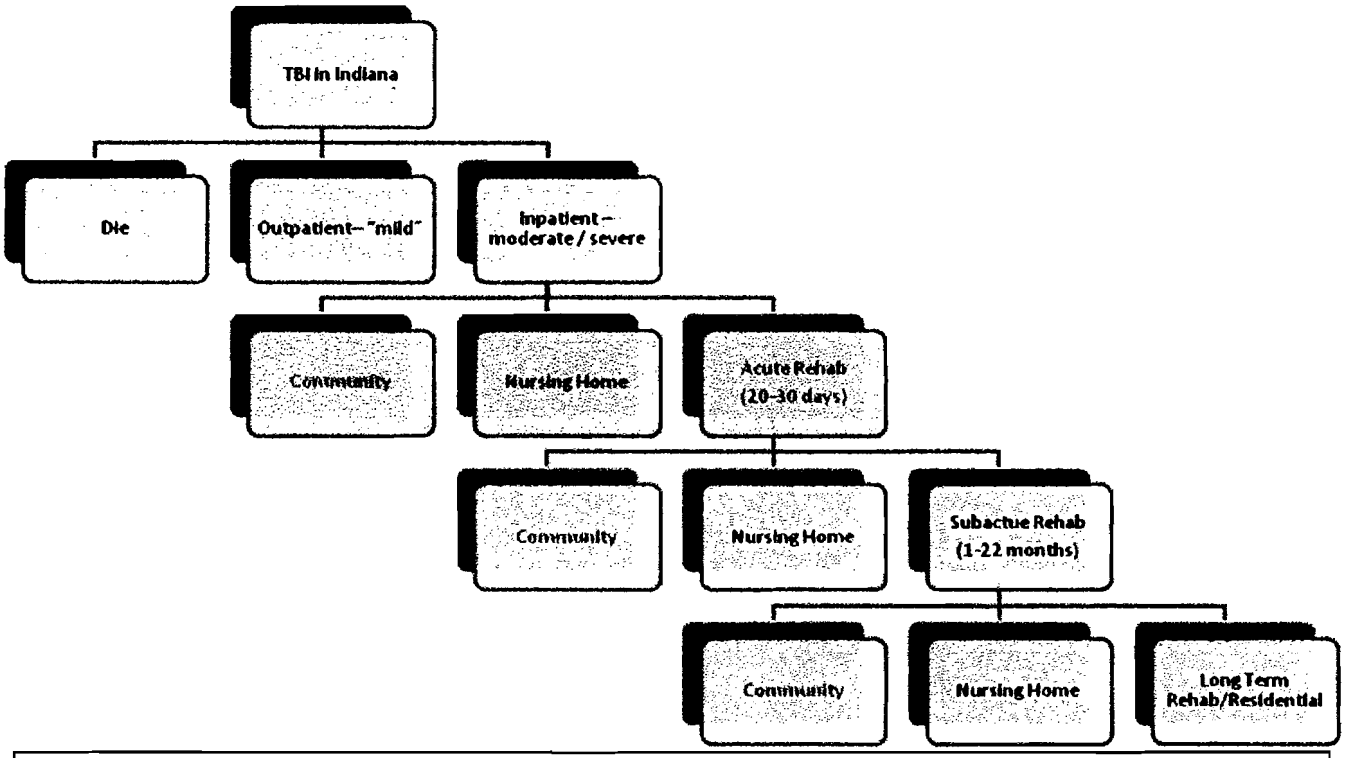


Figure 2: Traumatic Brain Injury Injury Framework and Treatment Locations

System of Care

A comprehensive spectrum of, not only physical and mental health services, but also other necessary services which are organized into a coordinated network to meet the multiple and changing needs of those with [traumatic brain injury] and their families.

The core values of a comprehensive system of care are:

- *Community based*
- *Person centered and family focused*
- *Culturally and linguistically competent*

Guiding principles include:

- *Comprehensive, broad array of services and supports*
- *Individualized*
- *Provided in the least restrictive, appropriate setting*
- *Coordinated both at the system and service delivery levels*
- *Involve families as full partners*
- *Emphasize early identification and intervention*

Figure 3: Definition of System of Care. From: Center for Mental Health Services. (1998). Hallmarks of the system of care approach. In Annual report to congress on the evaluation of the comprehensive community mental health services for children and their families program.[1]

Injury Framework and Strategies

In building a comprehensive system of care, it may be helpful to build on the science of injury prevention. Figure 4 outlines the dimensions of this framework, which will be described in detail below. Primary prevention includes systematic efforts to stop the injury from happening in the first place. Secondary prevention entails treatments to decrease morbidity and mortality around the time of the injury. Tertiary prevention includes methods that decrease long-term consequences and secondary morbidity of injury. Generally, there are four strategies to each level of prevention.

In the 1970s Haddon [2] outlined the complex interaction of factors that determine outcomes in injury at each level of prevention. First there is the HOST or the person at risk for injury – for example, we know that elderly, especially if they have vision problems are at high risk for falls and hence, TBI. Second, there is the AGENT which is the entity, which causes the injury – in TBI the agent is always ENERGY. There are different mechanisms of injury by which energy is transmitted – for example, there can be a shearing force as in shaken baby syndrome or blunt force as in football where one's head may hit another object. Next there is the ENVIRONMENT. The environment is the context in which the interaction between host and agent occurs. This refers to either the physical environment that influences injury occurrence such as having slippery floors or the social, political, economic environment that predisposes to particular types of injury events such as the political will to enact and enforce helmet laws.

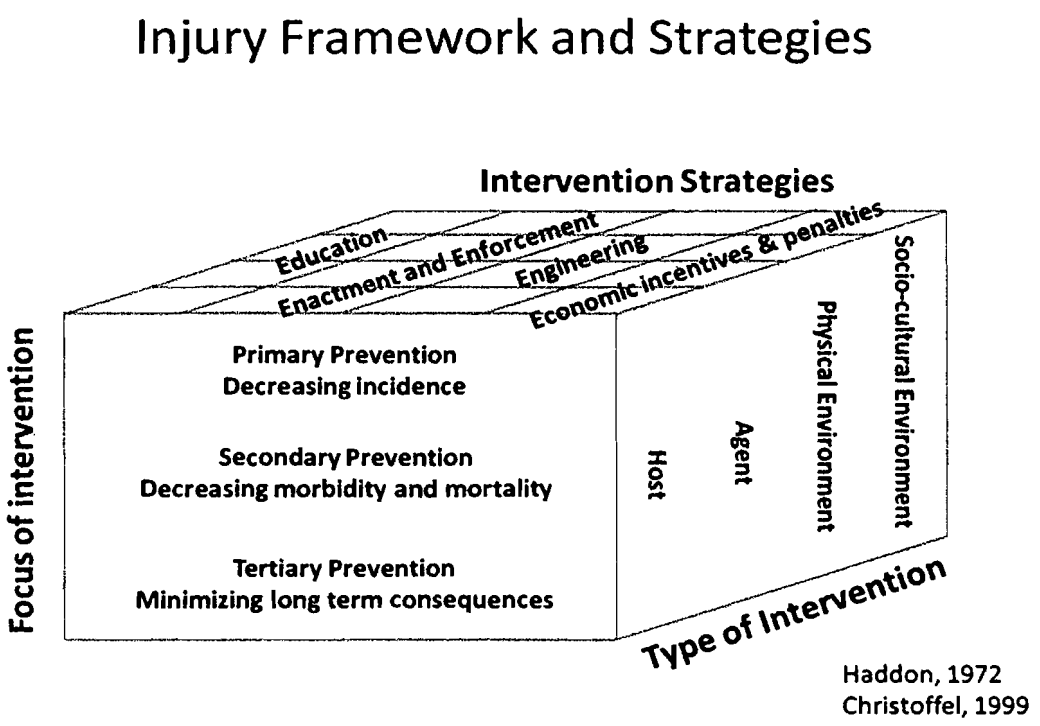


Figure 4: Injury Framework and Strategies for Prevention. [2, 3]

Haddon (1972; [2]) and Christoffel and Gallagher (1999; [3]) have also defined strategies to address injury which are classically known as the 4 E's. The first is **E**ducation, the second **E**nactment and enforcement, the third is **E**ngineering, and the fourth is **E**conomic incentives and penalties.

For example in a comprehensive system of care for TBI Primary Prevention Strategies might include:

Education

- Promoting education at the physician patient encounter – helmets, falls , vision (elderly)
- Community education programs and coalitions focusing on the leading causes of TBI in the community. For example, in one northern town, there was a "walk with your neighbor" campaign to decrease falls on ice in the elderly.

Enactment and Enforcement

- Legislation to ensure seatbelts and car seats, bicycle & motor cycle helmets, texting and cell phone use
- Alcohol and seatbelt checkpoints notifications

Engineering

- Helmets, home safety features for elderly such as railings, removing throw rugs

Economic incentives and penalties

- Discount safety equipment
- Fines for no seatbelt

In a TBI system of care focusing on secondary prevention is extremely important. There is a prominent role of secondary brain damage in the overall morbidity and mortality of TBI patients as the brain reacts to the initial trauma with increased swelling or bleeding which furthers the damage. A recent CDC study found that adoption of the Brain Trauma Foundation Guidelines (which focus on secondary prevention) could result in a substantial reduction (up to 50%) in TBI-related deaths and generate a savings of $288 million in medical and rehabilitation costs and $3.8 billion in societal costs for severely injured TBI patients [9]. In a System of Care examples of Secondary Prevention Strategies include:

Education of public, "first responders", ER, ICU providers

- Recognition of head trauma
- Use of Glasgow Coma Score

Enactment of "best practices"

The Brain Trauma Foundation and American Association of Neurological Surgeons have posted guidelines at www.braintrauma.org. These guidelines are available to registered users of braintrauma.org and include:

- Guidelines for prehospital management of traumatic brain injury
- Management and prognosis of severe traumatic brain injury
- Guidelines for the management of severe traumatic brain injury

Engineering

- Advances in pre-hospital care and transport
- Advances in intracranial monitoring, etc.

Economic incentives and penalties

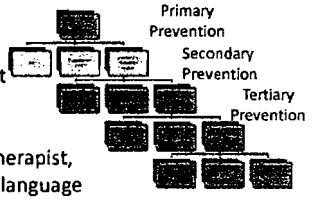
- Payment for use of TBI assessment tool in all trauma

The long term consequences of TBI can be devastating and there is a need for a system of care for tertiary prevention i.e., minimizing the long term consequences and decreasing secondary morbidity.

Using the Glasgow Outcome Scale [10], the TBI Model Systems Program [7] found that 2 years post injury, for adults with moderate to severe TBI 39% good recovery, 34% moderate disability, 27% severe disability and 1% vegetative state. Two years post injury, 2/3 of TBI patients did not have a need for supervision but 1/3 of the adults needed supervision (7% overnight , 18% part-time , 5% full time, indirect, 4% full time, direct). The long term consequences of TBI are myriad and depend in part on the type and location of the injury. TBI patients may have continued physical morbidity with changes in muscle tone, vision, hearing, smell, taste, and speech, reduced endurance, headaches, and seizures. Cognitive morbidities include memory loss; difficulties with concentration, difficulties with judgment, problems in communication, planning; and spatial disorientation. Psychosocial morbidity is frequent with anxiety and depression as patients recognize and frustrated with their deficits, mood swings and emotional lability, denial, impulsiveness and disinhibition, and agitation. These needs, taken into account with the epidemiology (young adults, male, minority) speak to the need for a system of care that supports patients and also families and communities well beyond the initial injury.

The first step in tertiary prevention i.e., in limiting long term consequences and secondary morbidity is often acute rehabilitation. Generally, a patient will spend 7-10 days in the hospital, and then go to acute rehab for about a month. Despite the high level of need to decrease secondary morbidities, there are few treatment interventions (pharmacologic or psychosocial) for the neurocognitive and neuropsychiatric sequelae of TBI that have a solid scientific foundation. In part, because TBI produces a range of neuropsychiatric symptoms, findings across clinical studies are difficult to compare. "Best available evidence" from the TBIMS supports more intensive rehabilitation given as early as possible post-injury to those with moderate to severe TBI (when there is thought to be more plasticity to the brain and opportunity for improvement – some studies demonstrates increased functional gains and more likely to be discharged home). Services should be delivered via a transdisciplinary team (to better address all functional components) and should be individualized (having no set minimum such as all TBI patients must receive a predetermined amount of physical therapy and as tolerated such that those who have the physical tolerance can be highly challenged). The cost-effectiveness of higher intensity therapy however, is unknown [11]. (See also earlier report on TBI rehabilitation completed by the MMAC 6/25/2009.) Because of the broad spectrum of physical, emotional and cognitive morbidities a TBI Rehabilitation Team has a long list of potential members and services that may or may not be needed in each individual case. For additional details, see TBI staffing report. Figures 5a and 5b outline the potential members that could be included in a rehabilitation team (5a) and the services that are often offered in rehabilitation settings (5b).

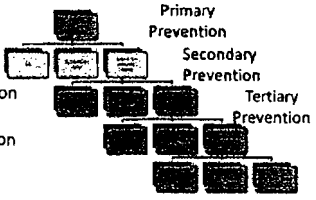
TBI System of Care –
Potential Members of a TBI Rehabilitation Team



- Patient and family or caregivers
- Rehabilitation physician / physiatrist
- Rehabilitation nurse, technicians
- Primary neurosurgeon
- Allied health professionals: physiotherapist, occupational therapist, speech and language pathologist, clinical psychologist, neuropsychologist, social worker
- Paramedical health professionals: dietician, orthotist, and rehabilitation engineer
- Other medical specialists: ophthalmologist, otorhinolaryngologist, orthopaedic surgeon, gastroenterologist and neurologist
- Vocational rehabilitation services and counselors
- Volunteers from support or spiritual groups

Chua, 2007

TBI System of Care
Potential TBI Rehabilitation Services



- Cognitive and behavioral
  - Post-traumatic amnesia assessment
  - Neuropsych assessment and remediation
  - Neuropharmacological management
  - Management of post-traumatic agitation
  - Cognitive rehabilitation therapy
- Physical
  - Spasticity management including motor point/ nerve blocks, Botulinum toxin therapy; Intrathecal Baclofen pump therapy
  - Casting, splinting, orthotics, contracture management
  - Pain management for cervicogenic headaches, trigger point injections
  - Balance and vestibular assessment and rehabilitation
  - Comprehensive dysphagia and speech therapy services
  - Assistive technology using augmentative and alternative communication
- Brain injury discharge advice and family education
  - Social support: discharge planning, caregiver training

Chua, 2007

Figures 5a and 5b. Members of Rehabilitation Teams and Services Commonly Offered in Rehabilitation Settings.[4]

A second step in tertiary prevention may be subacute rehabilitation. Subacute rehab is extended intensive rehabilitation for the more seriously injured person who requires extended therapies in a structured program that has all the elements found in the acute rehabilitation center. Emphasis is generally on cognitive and memory retraining, speech therapy, activities of daily living (ADLs), restructuring lost social behaviors, and continuing physical therapy. Prevocational and vocational training, recreational therapy, and community reentry are important parts of such programs. Patients will generally remain in these programs as long as progress is being made or up to about 22 months post injury.

A third step in a tertiary prevention system of care is long term rehabilitation. Long-term rehabilitation programs provide extended rehabilitation and management services. They provide a structured environment for those with TBI. Theoretically, such programs are not for permanent placements, and usually a person may remain in the program as long as there continues to be some improvement. Anecdotally, however, long-term rehab is a holding ground for those needing highly structured environments for behavioral concerns because other options are not available. Common and difficult behavioral changes after a brain injury include the inability to control emotions, socially inappropriate behavior, difficulty with relationships, lack of response to social cues, mood swings, stress, anxiety, frustration and posttraumatic depression. Behavior management programs are needed for severe maladaptive or aggressive behaviors that limit an individual's participation in most rehabilitation or long term care settings. While typical rehab (and long term care) programs may treat the common behavioral problems following head injury, many cannot handle destructive behavior to self or others.

Another step for those with severe injury who need supervision is long term residential care. Long term care or "nursing homes" may be used for those during the subacute rehab period and more generally for those with longer term needs after injury who need supervision. Nursing homes are generally targeted to the elderly and may not provide the type of extremely structured environment that may be necessary for those with behavioral issues and physical aggression. Some TBI experts also advocate a long term care with a comprehensive rehabilitation program for patients in states of "severely altered

consciousness." These programs include the management of optimal nutrition, monitoring of bladder and bowel function and prevention of secondary complications, management of spasticity, and coma stimulation. Coma stimulation is a technique whereby the senses (vision, hearing, touch, taste, smell) are assessed in response to stimuli. The responses can be facilitated and trained if there is a consistent and meaningful response, however, the clinical effectiveness of the technique has been equivocal. Ongoing studies are still being conducted.

The long term goal after TBI is, arguably, full community integration. Given the epidemiologic characteristics, physical, behavioral and cognitive deficits that may persist, those with TBI may benefit from a variety of community based programs. First, adults with TBI may need further training in household independence and a transitional living unit where patients largely self manage but are under supervision of health and behavioral specialists. High functioning TBI survivors may need vocational assessment and rehabilitation, driving retraining, and computer aided training for visual-spatial or cognitive deficits. Pain management clinics may also be needed for headaches or nerve injuries. When an adult child or spouse returns home with major deficits, issues of caregiver coping and long-term psychological support are important if the TBI patient is to succeed in the community.

Transitional living programs are programs specifically to prepare individuals who are transitioning from an institutional setting (hospital, rehab or long term care) to the community. The programs may be in a variety of settings such as small group homes or "independent living" units on a campus of an institution. The programs teach skills for community interaction, and work on prevocational and vocational training. Programs are structured to meet the needs of the individual and may include cognitive, memory, speech, behavioral therapies, coping skills and job coaching.

Day treatment programs are for nonresidential patients. The day treatment programs emphasis is to upgrade functional skills. Day programs may also offer "adult day-care" services for those unable to benefit from an active treatment program but who are in need of supervision. Independent living programs (ILPs) are community-based services that assist people with severe disabilities living in their own homes to increase independence. ILPs provide a variety of services ranging from teaching ADL skills to resource referral.

Long term needs and health care financing

A major issue in the development of a system of care for tertiary prevention is not only the availability but also the financing of services. See the Funding Models for TBI portion of this report for details.

Langlois, et al (2005; [5]) describe the continuum of care for TBI patients (see Figure 6) with high acute medical needs and longer term psychosocial and functional needs that are not covered by insurance. In a Colorado study conducted by Corrigan 1,802 persons, aged 15 and older, who were hospitalized for TBI in 2000 completed a telephone survey. One year after being discharged from the hospital, 40.2 percent of respondents reported at least one persistent, unmet need. The most frequently experienced needs were cognitive i.e., "improving your memory, solving problems better" (34.1%), psychological i.e., "managing stress, emotional upsets" (27.9%), and functional "managing your money, paying bills" (23.3%).[12]

Options for covering needed services are limited but some programs offer benefits, such as additional cognitive, behavioral and case management services and warrant additional scrutiny. Home and Community Based Waiver services are one option but it is difficult for TBI patients to qualify for the TBI waiver because of the nursing home level of care and strict medical criteria that are required. Another potential option for Medicaid eligible patients is the Medicaid Rehab Option. It may be possible to target a broader population of people, including people with traumatic brain injury, who would benefit from needed MRO services but may not meet the current definition of "serious and persistent mental illness". [13]

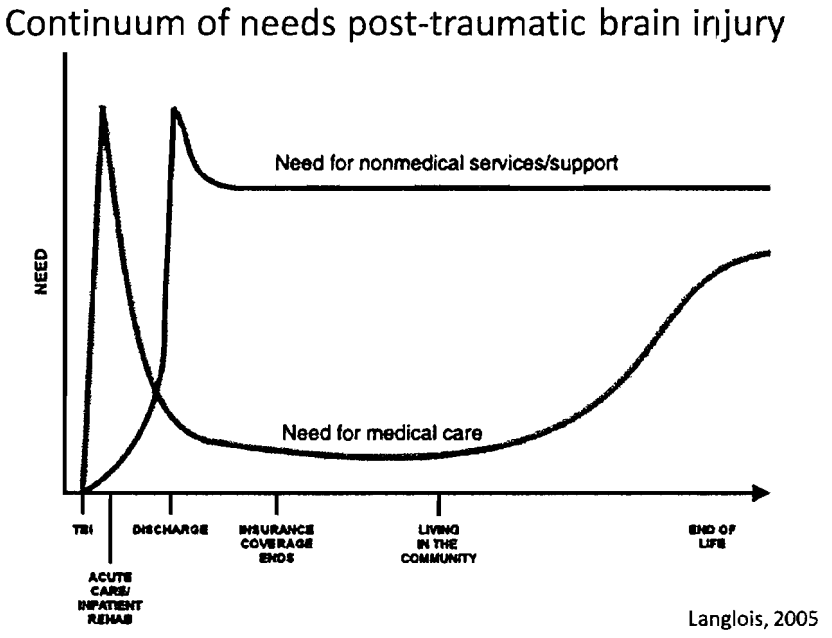


Figure 6: Continuum of Post TBI Needs. From Langlois (2005).[5]

Limitations of report

Although this report attempts to describe a TBI system of care, data specific to Indiana and to Indiana Medicaid are not included. A needs assessment and copy of the HRSA Indiana TBI grant were recently obtained and should shed light on the specific needs in Indiana. Further, data from the Indiana Medicaid claims system will help determine how resources are currently being expended and provide a better understanding of needs of low income Hoosiers and Medicaid coverage and benefits.

Recommendations and Opportunities for OMPP

- Work with HRSA TBI grantees, ISDH and professional organizations to promote primary prevention campaigns and enforcement of motor vehicle restraints, speed limits; consider helmet laws.
- Develop quality measures and incentives for implementing TBI guidelines for first responders and acute care
- Complete data analysis to determine how people with TBI are currently served; an annual analysis to document progress and system changes should be done
- Review and incorporate information from TBI needs assessment and HRSA grant to better flesh out the current state of TBI care in Indiana.
- Explore other means of financing tertiary prevention systems of care
  - Medicaid Rehab Option – explore how these services could be targeted to serve a broader population of people in need, including people with traumatic brain injury.

  - Change the TBI HCBS waiver to model the DD waiver services but allowing for adults to access services.
- Explore alternative community options for long term care of individuals with TBI. For example, a licensing category for Adult Foster Care (AFC) providers that have accreditation and/or certification to care for people with TBI.
- Explore the use of newer cognitive aids and assistive technology (handheld devices, communication aids) as durable medical equipment
- Consider including all Acquired Brain Injury (ABI) in the system of care as the needs of individuals who suffer brain injury from hypoxia, hypoglycemia, etc., overlap with the needs of those with TBI despite differing mechanisms of injury.

Traumatic Brain Injury: Subacute Rehabilitation Staffing Models

General Goals of Longer-Term (Subacute) TBI Rehabilitation

The main goals of longer-term TBI rehabilitation, articulated in an 1999 NIH TBI Consensus Conference, are to enhance the individual's capacity to process and interpret information and to improve social/family, occupational, and community functioning [1].

Desirable TBI Subacute Rehabilitation Care Characteristics

There are a number of consistent themes in the research literature about the key qualities of effective TBI rehabilitation. Desirable approaches to care include; 1) a holistic treatment philosophy (meaning that a variety of general and specific interventions are flexibly combined to address multiple cognitive deficits, and promote psychosocial functioning), 2) multimodal service provision, and 3) a transdisciplinary or multidisciplinary provider team approach [2]. Rehabilitation care planning needs to be individualized, taking into account the level of loss of awareness of skill impairment [3]. Patients should be engaged in the care process through the development of effective patient and provider working alliances [4]. Polytrauma patients have been identified as a higher-risk subgroup of patients needing aggressive, early multimodal services. In recognition of these special needs, TBI care programming in some settings such as the VA Health System, now includes specialized polytrauma rehabilitation units.

Preferred Treatment Modalities

Principle interventions have been categorized and summarized in a recent review article, and are outlined below [5].

Cognitive and Behavioral Interventions: these include psychotropic medication management, management of post-traumatic confusion and agitation [6], cognitive remediation, neuroadaptive skills development [7], serial neuropsychological evaluation (to include general IQ, memory and learning, psychomotor function, processing speed, attention, language functions, and executive functions)[8].

Physical interventions: these include spasticity management, casting/splinting/orthotics, balance rehabilitation, dysphagia and speech therapy

Family education & support: this category includes discharge planning, connection to advocacy groups such as the Brain Injury Association of America (BIAA), caregiver training

The Staffing Team

Transdisciplinary rehabilitation teams (where individual providers have cross-training in care approaches provided by other disciplines) have been endorsed by several associations for rehabilitative therapy including, the American Physical Therapy Association, the American Speech-Language-Hearing Association, and the American Occupational Therapy Association [9], and represent an ideal not often attained in the subacute rehabilitation care setting. More often a multidisciplinary care model prevails, and appears to be the current practice standard. Members of the team are: 1) the patient and family/caregivers, 2) medical rehabilitation specialists (the physiatrist (putative team leader), RNs and

technicians), 3) surgical specialists (primary neurosurgeon, other surgical specialists (orthopedist, ENT, eye specialist), 3) allied health professionals (ST, OT, PT), 4) mental health professionals (neuropsychologist, MSW, psychologist, psychiatrist, substance counselors), 5) vocational professionals (counselors, job coaches), and 6) spiritual counselors. Peer support personnel may be involved at a later stage of rehabilitation, as a part of community engagement and reintegration.

Service Settings & Accreditation

Rehabilitation centers should be accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF) in order to demonstrate a minimum standard of care, and generally offer a wide variety of services. Accreditation requirements can be accessed on-line at www.carf.org. The Department of Health's Joint Commission on Accreditation of Healthcare Organizations (JCAHO) also gives the designation of Brain and Spinal Cord Injury Program (BSCIP) to facilities that meet certain criteria and standards. Facilities with this designation must first be accredited by CARF, and are required to admit at least 40 new brain or spinal cord injury patients per year.

Model Systems Centers are highly specialized hospitals that have programs that are specifically designed for patients with brain and spinal cord injuries. This designation is granted by the National Institute on Disability Research and Rehabilitation (NIDRR) and is only given to those centers proven to be leaders in medical research and patient care. These centers work together to share information, conduct research, and improve the outcomes for patients with both spinal cord injury and brain injury. To date there are 16 TBI Model Systems in the US (see NIDRR Designated Model Centers on page 24 of this document for Model Centers listings and site contacts).

Prognostic Markers and Long Term TBI Recovery

Although there are few well-established predictors of longer-term outcome post TBI, several structural neuroimaging parameters have been linked to prognosis. In one study of Vietnam vet with TBI, whole brain/3rd ventricular volume ratio was strongly associated with cognitive recovery and eventual employment [10]. More recently, brainstem and temporal cortex contusions in patients undergoing early rehabilitation, independently predicted poor rehabilitation outcomes [11]. Other non-structural MR techniques such as MRS or DTI may provide a more refined analysis of injury effects. For example, in one study early post-injury concentrations of N-acetyl aspartate (a marker of neuronal viability) in cerebral cortex predicted later cognitive and functional improvements [12]. Perhaps the best studied clinical indicator of recovery potential is post-traumatic amnesia duration. Awareness of these prognostic factors should guide the timing and intensity of rehabilitation interventions in the TBI population.

Findings in Residential Subacute Rehabilitation

Overview

In her exhaustive review of TBI rehabilitation practices and their evidence base (summarizing studies and information from over 6600 TBI patients via Cochrane Reviews and UK National Health Services data), Turner-Stokes 2008, endorsed intensive and specialist inpatient rehabilitation as "strongly recommended" care approaches for TBI post-acute care [13]. In addition, vocational programs were also a strongly recommended intervention for this patient group. Early rehabilitation and outpatient long-term rehabilitation were both categorized as a "recommended" intervention. Many patients with more severe TBI may not be ready to benefit from early rehabilitation due to their combination of CNS and other physical injuries. In contrast, late and ongoing rehabilitation were "conditionally

recommended" for selected cases. These recommendations are of /perspectives are of particular significance in assessing the benefits in relation to cost of a highly specialized subacute residential rehabilitation facility such as the CCS Carbondale, IL Residential Facility.

Model Programs

One model program developed and studied in Finland is the INSURE program (Sarajuuri JM et al., 2005). This was a 6-week intensive neuropsychological and psychotherapy-oriented rehabilitation protocol designed for the post-acute care of moderate-severe TBI patients in an inpatient rehabilitation setting. Each INSURE group consisted of 5-8 patients. The schedule of activities runs from 8:30 am-4:00 pm each weekday, and consists of both individual and group rehabilitation activities. The staff included 3 neuropsychologist, a neurologist, a rehabilitation nurse, a social worker, 2 speech and language pathologists, an occupational therapist, and a physical therapist. Other features include vocational planning and interventions, and, at week 4, a 2-day INSURE seminar that involves participation from graduates, family, patients, employers and health professionals. An evaluation of INSURE's effectiveness compared 19 graduating patients productivity status to that achieve by 20 matched control patients (age, gender, TBI injury severity), who received usual care. 89% of INSURE patients were productive (defined as working, studying or involved in volunteer activities) at 2 year follow-up vs 55% of comparison patients (p=0.017).

Cost Effectiveness

A recent, 3-year, UK naturalistic study of 4 longer-term residential rehabilitation centers (n=133 patients studied in all) suggested this approach to rehabilitation can be cost-effective, and although most effective for those admitted within 1 year of injury, was still of benefit for patients with longer post-injury times [14]. Of note the mean length of stay in this cohort=26.5 weeks (range; 14-135 weeks), and the mean time until admission to residential rehabilitation was 106 weeks. The patients had severe TBI with a mean±SD coma duration=16±21 days. The daily costs of residential rehabilitation were estimated at 243-319 UK pounds/day. It was estimated that rehabilitation costs were recouped after 2 years. Estimated lifetime care cost savings ranged from 1 million UK pounds, for patients treated within 1 year of injury to 0.5 million pounds, for patients whose injury occurred greater than 2 years prior to rehabilitation. Improvements were noted in a variety of measures of social and community functioning at 18 month follow-up.

Day Hospital Rehabilitation

Intensive day hospital TBI rehabilitation appears to be an effective treatment option for patients with moderate-severe TBI. In a recent, moderate-sized RCT, one research group compared intensive holistic neuropsychological rehabilitation in this setting (n=34 patients) to standard rehabilitation (n=34)[15]. Intensive treatment consisted of 15 hours of individual and group therapy, administered on 3 days each week, for a 16 week period. Standard treatment patients also received rehabilitation in the day hospital setting which consisted of discipline-specific interventions targeted to improve specific deficits. Although both group improved in terms of neuropsychological functioning, the intensive treatment group had superior levels of community adjustment, quality of life, and self-efficacy of symptom management. These effects were maintained at 6 month follow-up. The major of participants had moderate-severe TBI, and over half were more than 12 months post-injury.

Conclusions

There is accumulating evidence that specialized, intensive, subacute residential rehabilitation for moderate-severe TBI patients can be a cost-effective intervention that is optimally effective if administered within the first year of injury.

However, it should be noted that patients with severe TBI may not be ready to participate in comprehensive rehabilitation until a number of months post-injury. Other patients with insufficient awareness of their deficits may require a period of engagement/alliance building prior to moving on to intensive rehabilitation. Timing of rehabilitation should also take into account other clinical factors (such as PTA duration), and the pattern of injury identified by structural neuroimaging methods.

Intensive day treatment programs can be an effective, alternative rehabilitation approach for moderate-severe TBI patients without significant agitation or other acute psychiatric symptoms. As with inpatient rehabilitation, emphasis should be given to vocational planning, and retraining as appropriate to the patient's level of improvement, as, based on the research literature, this is a strongly recommended intervention.

Transdisciplinary staffing models are highly valued for the optimum delivery of subacute, residential rehabilitation care. Holistic approaches to care combining individual and group interventions, are also strongly endorsed by clinical experts, as a means of addressing both specific cognitive deficits, as well as problems with metacognition (self-awareness, self-efficacy, social awareness).

Recommendations for Staffing Models

Subacute, residential rehabilitation care for TBI should be available to in-state patients, but should be limited to a 2-year period as this seems to be when most benefit is obtained. The 2-year time frame should be referable to the time at which the patient is able to engage in rehabilitation vs the time elapsed since injury.

Beyond that time frame, other care settings should be considered for the patient including: nursing home placement, group home placement, community reintegration with day hospital or waiver services.

An in-state longer-term residential program should be intensive, highly-specialized, and transdisciplinary to be most effective.

The current Medicaid practice of a 90-day reassessment of the need for subacute, residential treatment seems appropriate, based on the clinical literature.

Offering a continuum of TBI care within state, including residential rehabilitation and day treatment rehabilitation would help to address a state-wide need identified on a recent survey, in which respondents indicated that they had difficulty with the transition from inpatient/ hospital based care to community based care and the work environment.

Traumatic Brain Injury Funding Models

Services Following TBI Requiring Funding

As discussed in the "Staffing Models" portion of this report, traumatic brain injury patients require a continuum of care, not only immediately following the time of injury, but often for the remainder of their lives [1]. The types of services required by TBI patients are varied and diverse, with each TBI patient requiring a set of services tailored to their individual needs[1]. The table below lists some of the services required by TBI patients following injury and throughout the lifespan. See also the "Patient Care Continuum" schematic in the "Systems of Care" Portion of this report, which delineates between the types of care needed at points immediately post injury as well as through the TBI patient's lifetime.

- Alternative residence
- Assessment/evaluation
- Behavioral services
- Case management
- Cognitive therapy
- Community/family education
- Durable medical equipment
- Emotional support
- Financial assistance
- Housing
- Individual/family counseling
- Legal advice
- Life skills training
- Medical services
- Personal care
- Prescription drugs
- Recreation/socialization
- Rehabilitative therapies
- Respite (families)
- Special education
- Substance abuse treatment
- Supported employment
- Transportation
- Vocational training

SOURCES: GAO, 1998; Heinemann et al., 2002; Corrigan et al., 2004; Sample and Langlois, 2005; Connors, 2005.

The services required by a TBI patient immediately following injury, as well as through the remainder of the patient's lifetime, can be costly, as reported by the Committee on Traumatic Brain Injury of the Institute of Medicine (IOM) in its evaluation of the Health resources and Services Administration (HRSA) Traumatic Brain Injury grant program [1].

States have developed various means of financially assisting TBI patients and their families to afford these needed services. There are several primary types of funding models utilized by states, either individually or in combination. The most common types of funding for TBI-related services, therapies, and treatments are Trust Fund models, Medicaid waivers, and funds collected through legislated auto no-fault policies. Some states rely upon only one of these funding models, whereas other states rely on a combination of these types of models [1].

Trust Fund Models

Several states currently employ Trust Funds to completely fund or to help pay for TBI services, treatments, and therapies [1]. These models typically collect money from fines paid for traffic violations. States employing the trust fund model include Alabama, Colorado, Georgia, New Jersey, and Kentucky.

Alabama's trust fund relies upon a portion of all DUI fines ($100 additional fine for those convicted) [2]. Colorado's trust fund is supported by fines arising from various traffic convictions, such as $15 from each DUI conviction and $10 for speeding convictions [3] . Georgia's trust fund includes both TBI as well as spinal cord injuries (SCIs), and is funded by a 10% surcharge on DUI fines [4]. New Jersey's TBI trust fund is supported via a 50 cent surcharge on all motor vehicle registrations [1], while Kentucky's is funded by a $10.00 additional fine added onto seatbelt violation fines [5]. Generally, these states also have mechanisms for accepting private donations as well.

Most states impose limits on the duration for which a TBI patient can use trust fund resources, or the maximum allowable amount. For example, Kentucky sets an annual maximum benefit threshold at $15,000 per individual utilizing trust fund resources, with $60,000 being the maximum lifetime utilization [6].

The Traumatic Brain Injury Technical Assistance Center released a policy brief with a compendium of pertinent questions that a state should ask when interested in seeking to establish a trust fund [7]. Considerations include: how will the trust fund be supported (e.g., traffic violation fines, impaired driving convictions, etc.), who will oversee the trust fund, will the funding be used strictly to finance treatment and services for those with brain injury, will the fund be partially used to fund research, etc.? See Appendix 3 for a copy of this policy brief.

Indiana Spinal Cord and Brain Injury Fund

In July of 2007, Indiana established a research fund called the "Spinal Cord and Brain Injury Fund." The fund is maintained by financial gifts and appropriations, as well as federal and private grants. The funds were earmarked to create and maintain a state registry for traumatic brain injuries and spinal cord injuries in Indiana for medical surveillance purposes and fund research pertaining to the treatment of brain and spinal cord injuries from the level of the neuron upwards to medical complications to rehabilitation. Anticipated funds are $1.6 million annually. Research funding comprises the bulk of the fund's distribution. [22]

Medicaid Brain Injury Waivers

Numerous states help to pay for the cost of TBI services, therapy, and treatments via Medicaid waivers, which fall under section 1915(c) of the Social Security Act [8]. These waiver services, which allow those who have experienced a brain injury to remain in their own community and receive services that might not otherwise be covered under Medicaid, are offered to those who might instead be admitted to a hospital or nursing home [8]. Indiana, for example, has several types of waivers—"Aged and Disabled" (A&D), "Developmentally Disabled" (DD), and "TBI" (or "acquired brain injury"—ABI) waivers. Although each state has its own codes governing eligibility for these waivers, they are largely similar across the country for states that offer such waiver options, and there is a set of criteria that all waivers must meet to be in accordance with the Social Security Act; among these requirements are explicit identification of services included in the waiver, statement of the number of individuals to be served under the waiver annually, specified "level of care" necessary to be on the waiver, and the waiver must be cost neutral (i.e., no more costly than if the waiver did not exist) [9].

The Kaiser Commission on Medicaid and the Uninsured report that more than a million individuals received "Home and Community Based Services" (HCBS) waiver services at a cost of over 20 billion dollars as of 2004 [10]. Those on waivers for brain injury numbered approximately 11,200 as of 2006,

which has more than doubled from 5,400 in 2002 and lead to an increase from $155 million (2002) to $327 (2006) in terms of expenditures [10]. The Kaiser Commission on Medicaid and the Uninsured further report that, in comparing the costs of the 17 states that it surveyed, over $270 in fiscal savings was realized due to the utilization of Medicaid brain injury waivers (an average savings of $30,000 per person) [10].

Similar to the Kaiser Commission on Medicaid and the Uninsured, the Center for State Health Policy from Rutgers conducted a survey study of state Medicaid waiver programs; however, their study focused primarily upon brain injury waivers [8]. Surveying 23 states that have implemented brain injury waivers, coupled with examining expenditure data pertaining to brain injury for these states, comprised the data for the study. See table below for listing of the states surveyed by Rutgers Center for State Health Policy.

State	Individuals Served in 2006	Year Waiver Established
Colorado	293	1995
Connecticut	344	1997
Florida*	283	1999
Idaho**	19	2001
Illinois	3,601	1999
Indiana	131	2000
Iowa	825	1996
Kansas	269	1991
Kentucky	98	1999
Maryland	23	2003
Massachusetts	90	2001
Minnesota	1,372	1992
Nebraska	26	2000
New Hampshire	140	1992
New Jersey	276	1993
New York	1,953	1995
North Dakota**	29	1994
Pennsylvania	324	2002
South Carolina*	497	1995
Utah	91	1995
Vermont**	59	1994
Wisconsin	334	1995
Wyoming	137	2002
Total	11,214	

Source: Center for State Health Policy, Rutgers University
Note: Mississippi also operates a waiver; requested information was not received.
Kentucky and Vermont based on 2005 data
* Serves individuals with spinal cord injuries as well
** Waiver no longer in operation

The Center for State Health Policy at Rutgers cites two primary reasons why brain injury waivers have been established in the states that offer them. One reason is that brain injury advocates lobby policy makers for such waivers, and establishing waivers fulfills states' need to decrease costly out-of-state patient placement [8]. Rutgers cites Indiana among five other states (New Hampshire, Maryland, Wisconsin, New Jersey, and Vermont) as reporting that Medicaid waivers have decreased out-of-state placements.

As previously mentioned, certain criteria must be met in order to be eligible for a brain injury waiver, both financially and non-financially related. Financially speaking, a brain injury patient must be eligible for Medicaid services in a hospital, nursing home, or Intermediate Care Facilities for the Mentally Retarded (ICF-MR) [11, 12]

Generally, $2,000 is the most a person may have in savings and assets to be Medicaid eligible. Of states with HCBS waivers, 15 use this $2,000 as the threshold for waiver eligibility, while five other states set higher limits (up to $8,000) and three states set lower limits (up to $1,600) for waiver eligibility purposes [8]. Regarding income level thresholds, below is a table from the Rutgers study that categorizes the states based upon their income guidelines for HCBS waiver eligibility. The red star denotes where Indiana falls within these data.

Income Eligibility Standard	SSI Income Limit	Federal Poverty Guideline	$1,250	300% SSI ($1,911 in 2008)
All states	3 states	4 states	1 state	15 states

Source: Rutgers University, Center for State Health Policy, 2008

Non-financial criteria to meet eligibility for HCBS waivers in Medicaid involve a "level of care" (LOC) classification as well as "other" requirements [8]. Those seeking placement on a brain injury waiver must also meet a state's requirement for being placed in a nursing facility or other similar facility. This requirement is due to the fact that waivers are meant to allow people who would otherwise be admitted to one of these facilities to remain in their communities. For those seeking placement on "Aged and Disabled" (A&D) waivers, a nursing facility LOC of some sort is required, and for those seeking "Developmental Disability" (DD) waiver services, an ICF-MR LOC is the requirement. The A&D and DD waivers serve as possible alternative options for those seeking placement on a brain injury waiver.

LOC requirements vary from state to state, with some specifying a nursing facility LOC and other specifying a "skilled nursing facility" (SNF) LOC, and yet others specifying "specialized nursing facility" LOC [8]. In addition to establishing a LOC requirement, most states also define TBI and what constitutes a TBI to be eligible to be covered under waiver services (thus constituting the "other" criteria for eligibility). Of the 23 states offering waiver services, nine of the states specify that an individual seeking brain injury waiver services must have a traumatic brain injury, with three of these states including "stroke" and other types of brain injuries in their definitions. Fourteen states specify that an individual must have an "acquired brain injury" (ABI), with three states providing a specific set of ICD-9 codes to define the types of permissible injuries on the waiver [8]. Most states, with the exclusion of New Hampshire, do not permit those with brain injuries arising from degenerative diseases or birth trauma to be eligible for waiver services; further, most states with brain injury waivers do not explicitly state the age of injury onset, with the assumption that injuries occurring before adulthood onset (states vary in defining "adulthood" at either 18, 21, or 22) would qualify an individual for the DD waiver [8]. Several states do identify an upper age limit at 62 or 65 years of age, stating that patients older than this can receive services under the A&D waivers [8].

See Appendix 2 for a table from the Rutgers study that lists the states with brain injury waiver services and their respective criteria for eligibility. The red star is a "quick guide" to immediately pinpoint the Indiana-specific data.

Brain injury waiver services vary from state to state, but most states developed their service lists based upon waiver services being offered on the DD waivers. These services include case management, day supports, family and caregiver education, in-home services, financial management assistance, employment services, etc. [8]. The following table compares types of services offered under brain injury waivers in the states surveyed by Rutgers. Once again, the red star is a "quick guide" to immediately pinpoint the Indiana-specific data.

Services Offered by States	CO	CT	FL	IA	ID	IL	IN	KS	KY	MD	MA	MN	NE	NH	NJ	NY	ND	PA	SC	UT	VT	WI	WY
Case Management	X	X	X	X	X	X	X	1	X	X	1	X	4	X	X	X	X	X	X	X	X	X	X
Supports of Participant Direction (Support Broker)				1,2					X3											2			
In-Home Services	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
Person-Directed Goods and Services		X	1	X		X		X	X			X		X	1	1		X	X	X		X	
Equipment/Supplies	X	X	X	X	X	X	X	X			X			X		X	X	X	X	X	X	X	X
Vehicle Repair/Modification		X		X			X					X		X	X	X		X	X			X	X
Respite	X	X		X	X	X	X		X		X	X		X	X	X		X	X	X	X	X	X
Clinical Services	X	X	X	1	X	X	X	X	X		X	X		X	X	X		X	X		X	X	X
Day Supports	X			X	X	X		X	X	X	X	X	4	X	X	X		X	X	X	X	X	X
Environmental Accessibility Adaptations	X	X	X	X	X	X	X	X	X		X	X		X	X	X		X	X		X	X	X
Health Related				X	X	X	X	X					4	X				X	X			X	X
Financial Management Services		X		1,2				1						1	1					2		X	
Supported Employment		X		X	X	X	X		X	X	X	X		X				X	X	X	X	X	X
Family and Caregiver Training	X	X	X	X	X				X		X	X				X		X		X			X
Transportation	X	X		X	X						X	X	4		X	X		X	X	X		X	
Residential	X	X		X					X	X	X	X	4	1	X		X	X		X		X	X
Night Supervision		X		X				X				X			X			X		X	X		
Substance Abuse	X	1	X					X	X		X				X	X							
Behavioral Services	X	X	X	X	X	X	X	X	X			X	4	X	X	X		X	X		X		
Other			X			X	X				X	X	X			X	X	X	X			X	

Note: See State profile for specific services. State plan services may provide a service not specifically indicated.

1 – Service is available to Waiver participants, but not as a specific Waiver service.

2 – Service is required if the individual is using consumer-directed services.

3 – Replaces case management if the individual is using consumer-directed services.

4 – The service is specifically delineated in the definition of Assisted Living.

Source: Rutgers University, Center for State Health Policy, 2008.

Many states currently have waiting lists for individuals seeking to be placed on a brain injury waiver. Kaiser reported that the waiting list was over 1,650 people in 2006 [10], with Rutgers identifying over 1,220 people on waitlists in 2007 [8]. Rutgers cites most states focusing on the brain injury waiver as part of a "system of care," which meets long-term care needs for those with brain injuries. There are states, however, that focus their brain injury waivers on rehabilitation with less of a global, "system of care" type focus; these states do not focus on meeting long-term care needs for those with brain injuries, but rather facilitating as much recovery as possible and re-entry into the patient's community (e.g., Colorado and Kentucky, though Kentucky recently developed a long-term care waiver proposal that was submitted to CMS) [8].

Finally, with regard to brain injury waivers, The Center for State Health Policy at Rutgers assessed cost-savings of providing such waiver services. They concluded that HCBS waivers for those with brain injuries is less expensive than providing institution-based services to these individuals, based upon cost information from 17 of the 23 surveyed states. These 17 states that reported costs data collectively saved over $270 million *each year* by offering brain injury waiver services (as opposed to the institutional service costs for the same number of individuals with TBI). Indiana saved over $1.76 million in 2006, according to the Rutgers study [8].

Auto No-Fault

Funds generated from auto no-fault legislation in certain states help to pay for TBI services, therapies, and treatments [13, 14]. The state of Michigan has the most widely cited auto no-fault legislation system, which funds all TBI injuries that are a result of motor vehicle accidents, which accounts for 50% of all TBI injuries in Michigan. Generally, auto no-fault systems of insurance require that all drivers must have car insurance and contains three components: personal injury protection (PIP), property protection insurance (PPI), and bodily injury and property damage (BI-PD) [13]. Further, auto no-fault systems tend to limit the extent to which consumers may exercise their "tort" legal options (i.e., suing another driver who caused the accident) [13]. Some researchers argue that auto no-fault legislation leads to higher rates of fatal accidents [15], while others conclude there is not a statistically significant relationship between rates of fatal accidents, nor rates of accidents in general [16].

A survey of states' auto insurance legislation conducted by North Dakota (2004; [17], delineated between three types of auto no-fault policies. Absolute auto no-fault involves 100% relinquishment of ability to sue another driver; no state has an absolute auto no-fault system, but Michigan's is closest to this). Modified auto no-fault coverage involves the provision of benefits regardless of fault, and the option to sue can only be exercised when a certain financial threshold is met; states with this type of auto no-fault system include Michigan, Florida, North Dakota, and Utah. Choice auto no-fault coverage offers drivers the opportunity to select whether they wish to have a modified auto no-fault policy or rely on the tort system; this includes Pennsylvania, Kentucky, and New Jersey. "Add-on" auto no-fault insurance is an optional benefit that drivers can select which provides for medical expenses and foregone wages resulting from an accident, but does not limit the ability to utilize the tort system to sue another driver.

Michigan's auto no-fault system, though not the only system of its kind in the United States, tends to be the most widely recognized. Having gone into effect in 1973, the system has had several decades to develop into what it currently is today [18]. Michael Dabbs, President of Michigan's Brain Injury Association, contends that Michigan's auto no-fault policy is so successful due, in part, to its longevity [19]. The money collected via no-fault policies in Michigan is housed by the Michigan Catastrophic Claims Association in conjunction with auto insurance companies in the state; the Michigan Catastrophic Claims Association is a non-profit entity, created in 1978 by the Michigan legislature [14]. Premiums for Michigan's auto policies are annually re-evaluated, with premiums decreasing or drivers receiving refunds if there is a "surplus" of funds) [19] [14]. As of 2009, there was an additional $125 assessed per vehicle to cover the Michigan Catastrophic Claims fund [14]. Based upon current figures, the insurance companies are responsible for paying for medical claims up to $460,000 for personal injury protection (PIP), with the Michigan Catastrophic Claims Association reimbursing the insurance companies for claims exceeding that amount [14].

Braided and Blended Funding Considerations

The IOM's Committee on Traumatic Brain Injury reports that a key question in addressing advances in TBI systems of care involve coordinating the various programs housed in multiple government agencies, as well as coordinating private and public agencies/organizations to assist in improving the TBI system of care. This inter-agency "collaboration" entails addressing TBI and funding TBI-related initiatives for research, community-based services, vocational rehab services, etc.

Funding by multiple agencies often involves mix of braided and/or blended funding [20]:

- Braided Funding: Funding sources contribute money along with other sources; funds are tracked by funding source and the agency that handles the collective funding resources; less flexibility in using the funds (i.e., funds are often earmarked)

- Blended Funding: AKA—Pooled Funds; funding sources less distinguishable from other funding sources; more flexibility in using the funds (i.e., funds are often not strictly earmarked)

Recommendations for Funding Models

The MMAC recommends that OMPP seek means to increase the service utilization of its brain injury waiver given the demonstrated cost savings in comparison to rendering services in institutions in or out-of-state [8], as well as improved rates of more successful recovery for the patient, due in part at least to the likelihood that the family will also receive support services if they are able to do so in or near their community [21]. The MMAC further recommends that OMPP explore the option of mobilizing action to develop a state trust fund. We encourage OMPP to read Appendix 3 [7] and to brainstorm ways that Indiana might address establishing a trust fund.

The MMAC realizes that funding for Traumatic Brain Injury is often complex, deriving from multiple organizations and entities. We encourage OMPP to explore the concepts of braided and blended funding to facilitate the cooperation between various state agencies, organizations, and private institutions that may be currently assisting in the funding of TBI-related treatment, therapy, and research.

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NIDRR Designated Model Centers

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Santa Clara Valley Medical Center -San Jose, CA -Tamara Bushnik, Ph.D.

Craig Hospital -Englewood, CO -Gale Whiteneck, Ph.D.

The Rehabilitation Institute of Chicago –Chicago, IL –Elliot Roth, M.D. **www.Ric.org**

Wayne State University -Detroit, MI, Robin Hanks, Ph.D.

Mayo Foundation -Rochester, MN –Allen Brown, M.D. **www.mayoclinic.org**

JFK-Johnson Rehabilitation Institute -Edison, NJ -Keith Cicerone, Ph.D.

Kessler Medical Rehabilitation Research & Education Center –West Orange, NJ -Elie Elovic, M.D. **www.kessler.rehab.com**

Mount Sinai School of Medicine -New York, NY -Wayne Gordon, Ph.D.

Carolinas Rehabilitation/Carolinas HealthCare System-Charlotte, NC -Flora Hammond, M.D.

The Ohio State University -Columbus, OH - John Corrigan, Ph.D.

Moss Rehabilitation Research Institute - Philadelphia, PA -Tessa Hart, Ph.D.

TIRR|MemorialHermann -Houston, TX - Mark Sherer, Ph.D **www.tirr.org**

U of TX Southwestern Medical Center/Baylor Institute for Rehabilitation -Dallas, TX - Ramon Diaz-

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University of Washington -Seattle, WA - Kathleen Bell, M.D. **www.uwmedicine.org**

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Appendix 1

ICD-9 CM Diagnosis Codes to Denote TBI

Traumatic Brain Injury ICD-9 CM Diagnosis Codes	
800.00-801.99	Fracture of the vault or base of the skull
803.00-804.99	Other and unqualified or multiple fractures of the skull
850.0-850.9	Concussion
851.00-854.19	Intracranial injury, including contusion, laceration, and hemorrhage
950.1-950.3	Injury to the optic chiasm, optic pathways, or visual cortex
959.01	Head injury, unspecified
995.55	Shaken infant syndrome

Appendix 2

Table from Rutgers University Center for State Health Policy: State Medicaid Waiver Services for Traumatic Brain Injury

State	Level of Care	Income	Resources	Other
CO	Specialized Nursing Facility Hospital	300% of federal SSI	$2,000	Age 16 to 64 with a condition in a specified group of ICD-9 codes.
CT	Nursing Facility Intermediate Care Facility-Mental Retardation (ICF-MR) Chronic Disease Hospital Acquired Brain Injury Facility	300% of federal SSI	$1,600	Age 18 and to 64 with an acquired brain injury not from a degenerative or a developmental disorder.
FL	Skilled Nursing Facility	300% of federal SSI	$2,000	Age 18 or older with a brain injury caused by external trauma and/or a spinal cord injury; must be medically stable.
IA	ICF-MR Intermediate Care Facility	300% of federal SSI	$2,000	Age one month to 64 with a traumatic or non-traumatic injury to the brain that occurred since birth in a specified set of ICD-9 codes.
ID	Skilled Nursing Facility	300% of federal SSI	$2,000	Have a brain injury attained after the age of 21 in one of a specified set of ICD-9 codes
IL	Skilled Nursing Facility	SSI MN, spend down to FPL	$2,000	Any age with an acquired brain injury not including degenerative, congenital, or neurological disorders related to aging.
IN★	Skilled Nursing Facility	SSI	$1,500	Any age and have experienced an external insult resulting in a traumatic brain injury.
KS	Traumatic Brain Injury Rehabilitation Hospital	300% of federal SSI MN spend down to $716	$2,000	Age 16 to 64 and have a traumatic injury to the brain.

	Level of Care	Income	Resources	Other
KY	Skilled Nursing Facility	300% of federal SSI	$2,000	Age 21 to 65 with a post-birth acquired brain injury excluding a stroke treatable in a nursing facility providing routine rehabilitation services, spinal cord injury with no brain injury, progressive dementia of a chronic degenerative nature (including alcoholism or another addiction),
MD	Skilled Nursing Facility Chronic Hospital	300% of federal SSI	$2,000	Have a traumatic brain injury that occurred after age 21 and inpatient in a state Mental Hygiene Administration facility, a state owned and operated nursing facility, or placed by Medicaid in an out-of state facility.
MA	Specialized NF	100% FPL	$2,000	Age 21 to 62 with a traumatic or non-traumatic brain injury that has occurred since birth.
MN	Skilled Nursing Facility Neurobehavioral Hospital	FPL MN spend down to 75% of FPL	$3,000	Under age 65 at the time of application with a traumatic or acquired brain injury, or a degenerative disease (not congenital) with a cognitive impairment.
NE	Skilled Nursing Facility	FPL	$4,000	Ages 21 to 64 and have a traumatic brain injury.
NH	Specialized NF	$1,250	$1,500	Age 22 or older with an acquired brain disorder (including degenerative conditions such as Multiple Sclerosis and Huntington's Disease) acquired between age 22 and 60.
NJ	Skilled Nursing Facility	300% of federal SSI	$2,000	Ages 21 to 65 with a traumatic or acquired brain injury with an age of onset of 21 and a minimum score of 4 on the Rancho Los Amigos Levels of Cognitive Functioning Scale.

Appendix 2 Continued

	Level of Care	Income	Resources	Other
NY	Skilled Nursing Facility	FPL	$4,200	Age 21 to 64 with traumatic brain injury: individuals with deficits similar to traumatic brain injury because of anoxia, toxic poisoning, stroke or other neurological conditions may also be eligible. Gestational or birth difficulties or degenerative diseases are not eligible.
ND	Skilled Nursing Facility	SSI	$3,000	Age 18 and older, determined disabled according to Social Security criteria. (See profile as this Waiver is now merged into the state's Aged and Disabled waiver
PA	Specialized Rehabilitation Nursing Facility	300% of federal SSI	$2,000 after a $6,000 disregard	Age 21 and older with a diagnosis of traumatic brain injury not of a degenerative, congenital or post-operative nature and requiring a service plan designed specifically to meet the needs of individuals with traumatic brain injury.
SC	Skilled Nursing Facility ICF-MR	300% of federal SSI	$2,000	Under 65 with a brain injury that has occurred since birth that may have been caused by an external physical force or by a metabolic disorder and is not congenital or induced by birth trauma. "Similar disabilities" are included if not progressive; degenerative; a result of chronic disease or alcohol/drug use; or not a neurological disorder related to aging.
UT	Skilled Nursing Facility	300% of federal SSI	$2,000	Age 18 or older with an acquired brain injury that occurred after birth.
VT	Specialized Nursing Facility	300% of federal SSI	$2,000	Age 16 or older with a recent traumatic brain injury that is not degenerative but that may include stroke.

	Level of Care	Income	Resources	Other
WI	Inpatient Traumatic Brain Injury Rehabilitation	300% of federal SSI	$2,000	Any age and have a mechanical or infectious brain injury including one vascular in origin that is sustained by the person prior to attaining age 22. Not including alcoholism, Alzheimer's disease or a like irreversible dementia.
WY	ICF-MR	300% of federal SSI	$2,000	Age 21 to 64 with a traumatic or non-traumatic brain injury that has occurred since birth caused by an external physical force or by a metabolic disorder; not including congenital or birth trauma related injury and a specified score range on one or more standard assessments.

Source: Rutgers University, Center for State Health Policy, 2008.

Appendix 3

Public Policy Brief

Evaluating State Traumatic Brain Injury Trust Fund Legislation: Some Questions to Consider

A number of States have established trust funds to finance traumatic brain injury (TBI) services and supports. Some States are actively pursuing and others are considering TBI trust fund legislation. A number of important issues should be carefully considered prior to committing to the establishment of a TBI trust fund. Particularly important is an awareness of potential negative implications that might arise from the establishment of a trust fund. For example, would a TBI-only trust fund alienate key stakeholders (e.g., cross-disability coalitions) whose support will be needed for other initiatives or would a TBI trust fund limit State appropriations to programs that serve individuals with TBI and their families?

This policy brief presents questions TBI stakeholders should address when considering whether to pursue State trust fund legislation or when developing and evaluating proposals. Questions have been organized into five categories: 1) Decision Process; 2) Financing; 3) Administration; 4) Functions; and, 5) Oversight. Decision Process includes questions related to organization, coalitions, priorities, and responsibility. The section on Financing addresses matters related to securing and sustaining financial support to meet trust fund objectives. Administration addresses issues associated with establishing and operating a program that will ensure excellent customer service and efficient use of resources. The fourth section, Functions, should help identify the kinds of services and supports a fund might finance. The final section raises the important issue of oversight—what oversight mechanisms should be established to ensure solvency and that resources are used to meet the needs of individuals with TBI and their families?

Decision Process

1. What stakeholders (e.g., government, cross-disability organizations, individuals, and community service providers) would be involved in evaluating the feasibility of pursuing a trust fund?
2. How and by whom would these stakeholders be identified?
3. How would decisions be reached (e.g., consensus agreement)?
4. To whom would the stakeholders report or provide recommendations?
5. How would the public policy objectives of a trust fund be identified and prioritized?
6. What information/data would be used to evaluate the feasibility of developing a trust fund?
7. Would a TBI trust fund alienate some stakeholders that may be helpful in pursuing other systems changes? If yes, how would this issue be addressed? If no, how could broader stakeholders help advance a trust fund proposal?

Financing

1. What would be the source of revenue (e.g., traffic fines, driving under the influence, State income tax, vehicle license charge) for the trust fund?
2. Would the trust fund be able to accept private contributions?
3. Would the funding source(s) be sufficient to meet needs?

Appendix 3 Continued

4. How stable/predictable are the funding sources (i.e., are they tied to a sector of the economy that is subject to fluctuation)?
5. Would contributions to the trust fund be time limited?
6. Would the trust fund require periodic reauthorization by the State legislature?
7. How would trust fund solvency be reviewed/addressed to ensure services and supports are not cut and that individual and/or family needs continue to be met?
8. Would a trust fund overtly or covertly result in resources being diverted away from other TBI/disability programs?

Administration

1. If funded from fines, how would fines be assessed and collected? Would the contribution to the trust fund be a required percentage of a certain class of fines or would it be at a court's discretion? If the latter, how would court officers be trained/educated about their role in assessing/collecting penalties for the trust fund?
2. How would the trust fund allocate resources or fund services? Would the trust fund make an annual contribution to a given State agency or would individuals apply directly to the trust fund for assistance? Would the trust fund reimburse approved service providers for costs? How would the reimbursement schedule be determined and adjusted?
3. How would eligibility be determined?
4. Would the fund be restricted to a specific age or disability group?
5. Would the application process be cumbersome?
6. What appeals mechanism would be available to adjudicate disputed claims?
7. What would be the annual administrative costs of the trust fund and would these costs be paid from the trust fund?
8. Would the trust fund be administered through an existing program or a new program?
9. What training, technical assistance, education and outreach would be available to individuals, families, advocates, service providers, and other stakeholders who would seek to access the trust fund?
10. Would the trust fund operate in a person-centered or person-directed fashion?
11. Would the trust fund operate in a manner to meet the unique needs of diverse populations?
12. Could the trust fund be reprogrammed to provide/finance other State services? If yes, what authority (e.g., approval of the Governor, agency administrator, trust fund advisory board, or State legislature) is required?

Functions

1. Would the trust fund support only TBI services and supports, any services and supports needed by individuals with TBI?
2. What is the purpose of the proposed State trust fund? For example, would the trust fund cover hospital expenses for the uninsured, medical rehabilitation, durable medical equipment, cognitive rehabilitation, employment services, housing assistance, transportation assistance, assistive technology, respite care, personal attendant services, an array of services that individuals and families could choose from depending upon need, support of a State surveillance system, or prevention and public awareness?
3. Would the trust fund finance the most needed services, as identified by individuals with TBI, families, and service providers?

Appendix 3 Continued

4. What percentage of the State's population of individuals with TBI and their families would receive assistance from the trust fund? Where would those not eligible for trust fund assistance access/finance services?

Oversight

1. Would the trust fund have an independent advisory board that includes TBI stakeholders, including individuals with TBI, families, advocacy organizations and service providers?
2. What would be the relationship between the trust fund advisory board and the trust fund? Would the trust fund's administrator be obligated to listen to/implement the recommendations of the advisory board?
3. How would members of a trust fund advisory board be selected/appointed, and for what length of service?
4. What entity will be responsible for auditing the trust fund?
5. What mechanism will be established to evaluate the effectiveness of the trust fund in meeting the needs of individuals with TBI and their families?

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You may also wish to contact the Brain Injury Association of America at (703) 236-6000 or visit www.biausa.org or the National Association of State Head Injury Administrators at (301) 320-4331 or visit www.nashia.org.

Traumatic Brain Injury:
Synthesis of Indiana Medicaid Data

Background and Context

The Medicaid Medical Advisory Cabinet (MMAC) was asked to analyze data to better understand Traumatic Brain Injury care in Indiana Medicaid recipients as part of the Traumatic Brain Injury (TBI) project (original report submitted 6/25/09 and a second report regarding Systems of Care, Staffing Models, and Funding Models submitted 10/30/09). The goal of the data analyses was to develop data-driven recommendations regarding the feasibility of Indiana establishing a long-term brain injury rehabilitation facility within state, to replace the current practice of referral of Indiana Medicaid patients to out-of-state rehabilitation facilities (e.g., Mentor ABI Center for Comprehensive Services in Carbondale, IL).

This report describes TBI in the state of Indiana, specifically for Medicaid recipients. The results are preceded by a description of the methodology and definitions of the sample and variables included in the analyses. The data analyses are broken down into several sections, each providing details about different aspects of TBI care including: TBI severity, where TBI patients receive care, the duration for which care is provided at various locations, and costs for each stage of treatment from the acute injury until 24 months post-injury. The last section of this report closes with conclusions based upon the data analyses and our recommendations.

Method Overview

The purpose of the TBI data analyses was to describe the types of services used and distribution of costs (Medicaid payments) for a cohort of Medicaid-enrolled individuals with moderate to severe TBI as defined by having a hospitalization with a TBI diagnosis (see specific definition below). The time period for tracking service utilization and associated costs was through 24 months following the index hospitalization date for the TBI injury. Persons on both Medicaid and Medicare (dual eligibles) were also excluded from the cohort, because of the difficulty of fully accounting for costs/source of payments in this subgroup.

We contrast service utilization and costs in the cohort of moderate-severe TBI cases to individuals without TBIs, recognizing this is not a true comparison because the groups differ markedly from each other in age and sex. In order to draw inferences about the additional service use and costs attributable to those individuals with moderate to severe TBI, we separately examined costs associated with the initial (i.e., index) hospitalization and costs associated with the 24 months following this index hospitalization.

We evaluated service utilization and costs by major demographic categories, including race and ethnicity, age, and sex, as well as Medicaid aid category and severity of the TBI diagnosis (i.e., moderate vs. severe). Examining service utilization and costs by these other variables enabled us to describe 1) which of these factors contributed to a greater risk for severe TBI, and 2) which factors were associated with different patterns of service use and/or impact the distribution of TBI-related costs.

Categorizations of moderate and severe TBI were based, in part, upon research conducted by the state of Michigan [1], which is a 9-year, ongoing project to better understand the incidence and causes of TBI in the state of Michigan. In their work, The Michigan Public Health Institute used the CDC's definitions of moderate to severe TBI, based on ICD-9 codes [2-9] The study examines the incidence, severity, costs, utilization patterns, potential demographic correlates, etc., of TBI in the state of Michigan. One of the goals of the research is to develop a TBI Medicaid waiver for Michigan residents living with TBI, which was pending approval in the summer of 2009 [10].

In total, there are six separate analyses reported below, each one with specific goals.

Sample

We identified an incident cohort of patients who had a primary or secondary diagnosis of TBI during the four calendar years from 1/1/03 to 12/31/06. Members of the cohort were considered to have moderate or severe TBI if there was a hospitalization associated with a primary or secondary TBI diagnosis (or if there was an ER/outpatient visit for TBI within 24 hours of the hospitalization, the event was also counted as a hospitalization). Mild TBI was defined as an ER or outpatient visit associated with a primary or secondary TBI diagnosis and no hospitalization. In addition, those with mild TBI could not have had a TBI diagnosis in the preceding 182 days. The sample, however, did not have to be continuously enrolled for that time period. Death related to TBI was also pulled from the Medicaid data. However, these data may have poor sensitivity and may be underestimating the number of deaths from TBI.

Members of the cohort were enrolled in Medicaid at the time of the Index TBI hospitalization (enrollment may also have been retroactive to the date of that hospitalization). Importantly, we did not include persons who had a TBI and became enrolled in Medicaid at a later date (e.g., after a period of Medicaid spend-down or disability determination). Hence, there are other people who have a diagnosis of TBI in the Medicaid claims data but are not included in the study because Medicaid did not pay for the initial hospitalization.

TBI was defined using the CDCs definitional set of codes:

- codes 800.0--801.9 (fracture of the vault or base of the skull);
- codes 803.0--804.9 (other and unqualified multiple fractures of the skull);
- codes 850.0--854.1 (intracranial injury, including concussion, contusion, laceration, and hemorrhage); and

- code 959.01 [Note: The ICD-9-CM codes for TBI included in the analyses differ from the "Barrel Matrix," which is a recommended categorization of ICD-9-CM codes for nonfatal injuries. The inclusion of 959.01 (head injury, unspecified) is consistent with the current CDC TBI case definition.]
- Also added are 950.2 and 950.3 (re: optic nerve/pathways) and 995.55 (shaken baby) because there were discrepancies between the CDC TBI cohort definition ICD9s and the Michigan severity definition (e.g., these were in the severity definition but not in the cohort denominator).

The definition of severe TBI injury was based upon research conducted by the state of Michigan, which identified the following severe injury code set:

- Skull Fracture (codes in range of 800-804, but excluding those with 4th digits = 0 or 5)
- Intracranial Laceration or Contusion (diagnosis codes: 851, 800.1, 800.6, 801.1, 801.6, 803.1, 803.6, 804.1, 804.6)
- Intracranial Hemorrhage (852, 853, 800.2, 800.3, 800.7, 800.8, 801.2, 801.3, 801.7, 801.8, 803.2, 803.3, 803.7, 803.8, 804.2, 804.3, 804.7, 804.8)
- Injury to optic nerve and pathways (950.1, 950.2, 950.3)
- Shaken baby syndrome (995.55)

[Note: The above categories of "more serious injuries" are not mutually exclusive – patient may have more than one TBI ICD-9 code]

All other TBI hospital admissions not being captured by this "severe" code set were considered "moderate."

Descriptive Variables

For the TBI cohort described above, we examined aid category status two months prior to the index TBI rather than at the time of hospitalization. This allows us to identify members who were not enrolled prior to, but became members after, the TBI. For the non-TBI comparison cohort, aid category was based on December of the calendar year. Race and ethnicity were classified as non-Hispanic white, non-Hispanic black, Hispanic or other. Sex is reported as the proportion of members that are male. Age is described as a continuous variable (mean, median) or divided into categories. Age grouping cutoffs include those under 22 years old (twenty two was chosen because those with developmental problems beginning before that age may be eligible for the Developmental Disabilities waiver and have an impact on long term benefits and costs), and those 22 years to 64 years of age. The last age grouping is those who are ≥65 years old. Data from this age group should be viewed with caution as they may be enrolled in Medicare, making it difficult to accurately trace costs, and the numbers for members in this age group in our cohort tend to be very small. Table 1 below summarizes the Medicaid aid category and age groupings that were used in our analyses.

Table 1. Aid Categories and Relevant Age Groupings Used in the Analyses

[illegible]	Aid Category
Packages A & C ≥ 22 years and < 65 years <22 years old >65 years old	C, E, F, M, N, S, T, U, X, Y, Z, 1, 2, 9, 10
Care Select –non-waiver Disabled, Blind, Adoption Assistance, M.E.D.Works, Ineligible for TANF due to SSI payments, Breast/cervical cancer, Wards < 18 not IVE, Title IVE fosters <18, Transitional for Fosters 18-20. ≥ 22 years and < 65 years <22 years old >65 years old	A, D, B, 8, DW, DI, U, R, 12, 3, 4, 14
Duals	G, I, J, K, L
Waivers*	LOC

** Waiver category classification was based on LOC [note: Waiver individuals may not have claims, so LOC was used to define this group)*
*** Waiver and non-waiver patients were mutually exclusive; i.e. Care Select population did not include those on waivers.*
**** We excluded category Refugee Medical Assistance – MA-Q.*
*****HC and HN are new programs and likely to not have many claims so they were excluded from analyses.*
****** The Pregnancy aid categories (E,M,N) had so few TBI cases so they were also excluded.*

Definition of Transition Settings

A patient's "state" (i.e., disposition) following discharge after incident hospitalization and thereafter was categorized into eight settings or states: the community (which was the default category), nursing home (by LOC), facilities billing under COS 2500/2510 as rehabilitation facilities (i.e., primarily chronic rehab facility (CRF), or facilities such as Mentor ABI Center for Comprehensive Services at Carbondale, IL, that provide longer-term services), inpatient hospitalization (COS 0100, 0110), waiver services (waiver LOC), hospice (by LOC), facilities billing under COS 0120 or inpatient hospital with rehabilitation services (i.e.. primarily acute rehab facility (ARF), or centers such as Rehabilitation Hospital of Indiana, RHI, that provide shorter-term services usually not long after the TBI injury was sustained), or deceased.

One important note is that, due to the fact that many patients from the community and in nursing homes will experience brief hospitalizations as a result of other illnesses or injuries not necessarily related to TBI, we developed a set of rules to identify setting. For example, if a patient in a nursing home was admitted to a hospital for a few days as a result of bronchitis but retained their nursing home LOC during that entire time, this individual would be considered to be in the nursing facility the entire time. The exceptions are if an individual received services falling under COSs 2500/2510 or COS 0120 which denote some sort of inpatient rehabilitation. If this was the case, the person was considered to have re-entered the "rehabilitation" setting (even if the person still retained a nursing facility LOC). COSs 0320-2440 in Table 2 denote services that indicate "outpatient rehabilitation," which members in the community or in nursing homes might have received, though they were not admitted to a particular rehabilitation facility or hospital; these COSs are coded as "rehab" in the data tables that follow below.

Definition of COSs Used in These Analyses

There are 227 COSs, with 40 Rollup categories that group similar COSs. With respect to the current analyses, we defined the following specific COSs as representing rehabilitation services (see Table 2).

Table 2. COS Categories Used in These Analyses

0120	Inpatient - Rehabilitation
0320	Outpatient - Rehabilitation
0652	Physician - Physical Medicine
2000	Therapy Services - Physical
2010	Physical Therapy - Therapist
2020	Physical Therapy - Physician
2030	Physical Therapy - Chiropractor
2040	Physical Therapy - Other
2100	Therapy Services - Speech
2110	Speech Therapy - Therapist
2120	Speech Therapy - Physician
2130	Speech Therapy - Other

2200	Therapy Services - Occupational
2210	Occupational Therapy - Therapist
2220	Occupational Therapy - Physician
2230	Occupational Therapy - Other
2400	Therapy Services - Audiology
2410	Audiology Therapy - Therapist
2420	Audiology Therapy - Audiologist
2430	Audiology Therapy - Physician
2440	Audiology Therapy - Other
2500	Rehabilitation Facilities Services
2510	Rehabilitation Facility Care

*******Note: In every best effort to comply with HIPAA guidelines, the data reported herein containing numbers of less than 10 individuals have been "masked" with either "<10," with approximated percentage estimates, or dashes where necessary.***

Analysis #1: Describe the cohort of Interest.

Goals Analysis #1 was conducted to explore descriptive information about those in Medicaid with TBI. Analysis #1 was designed to answer the following questions:

- What are the number, proportion and overall cost of people in Medicaid with TBI?
- What are the characteristics of those with TBI?
- What is the overall cost of people with TBI?
- Of those with TBI, what are the number, proportion, characteristics, and cost for those with mild TBI?
    - Who die within *one month* of the TBI?
    - Admitted to the hospital with TBI (i.e., with moderate to severe TBI)? See Table 3.

Results

Over 40,000 or 4.0% of people enrolled in Medicaid had an incident TBI event over the 4-year evaluation period. Of those, there were 317 deaths (0.03% of all Medicaid enrollees), 38,482 (3.8%) outpatient visits with mild TBI, 468 (0.05%) outpatient visits for severe TBI (using the CDC's definition of TBI codes, see above), 134 patients (0.01%) with TBI who were residing in a nursing home, ICF/MR or receiving hospice services, and 1,296 (0.1%) who were hospitalized, and thus, by definition, had moderate to severe TBI. Those with TBI were predominantly male (53%), have a mean age of 20.4 years and were predominantly white (18% non-Hispanic-black, 6% Hispanic and 2% other). This contrasts with the overall Medicaid population without TBI, which is primarily composed of children and pregnant women and is, therefore, younger (mean age 16), only 40% male and has a higher proportion of minorities (only 65% non-Hispanic white), as reported in Table 3.

On average, over $200M per annum is spent on Medicaid patients with TBI. This accounts for about 4% of the total Medicaid dollars spent each year. We evaluated the PMPM for patients with TBI not including the index hospitalization so that we could compare their costs to other Medicaid enrollees. Because the vast majority of TBI patients (>90%) have mild TBI, the PMPM for the overall TBI group was only $427 (compared to the younger, mostly female Hoosier Healthwise population PMPM of $200, and Care Select and Care Select "Potentials" PMPM of $1,174, reported as of November 2008 [11]). The non-TBI cohort PMPM in our study was approximately $160, calculated by dividing the total 2-year costs of $2,496,634,260 by the 978,589 members with an average number of "member months" of 15.96. In contrast, the 317 members with TBI who die within the first month after injury are the most expensive group costing $2,299 PMPM and an average of $364,000 per year. The 1,296 people with moderate to severe TBI requiring a hospitalization contributed the most to overall costs (an average of $25M per annum or $1,700 PMPM), while those in nursing homes had the highest per capita monthly costs ($3,665 PMPM).

Of those with TBI, 7,807 of the 40,697 (19% or nearly 1 of every 5) had no Medicaid two months prior to the injury. Most striking is that about one third of people who die or have moderate to severe TBI had no Medicaid in the two months prior to their TBI. It is possible that when those with TBI seek medical care, they are merely found to be eligible but not enrolled in Medicaid. Another explanation is that those with TBI become eligible

because they are not able to work or afford health insurance. The majority of those with mild TBI are likely to be less than 22 years old; however, the majority of those who have moderate to severe TBI are over age 22. The exception is in those who have the severe TBI codes but are only found to have services in the outpatient setting. It is unclear why a person would have TBI codes indicating a severe injury but only have services in the outpatient setting. It is possible that the codes lack specificity (i.e., they are finding people who actually have mild injuries) or it is possible that people with severe injury had a hospitalization paid by another source (self-pay or private insurance) but then the person with TBI lost employment or insurance and became eligible for Medicaid.

Table 3. Demographic Characteristics of Medicaid Enrollees with TBI vs Those without TBI

Characteristics	Die (within 30 days of index hospitalization)	Outpatient Mild	In NH, ICF/MR, or hospice at the time of TBI *	Outpatient severe*	Inpatient Moderate-Severe	Total TBI	Total Without TBI
N (4 year case finding period)	317	38,419	130	68	1,298	40,697	978,589
% (N/total Medicaid population)	0.03	3.78	0.01	0.05	0.13	3.99	96.01
Age (mean/median range)	53 / 52, 0 to 89	19.x / 10, 0 to 90	88.6 / 72, 25 to 90	22.7 / 17, 0 to 90	27.4 / 22, 0 to >90	20.4 / 10, 0 to >90	16 / 12, 0 to >90
% male	66	53	42	52	61	53	40
Race/Ethnicity							
Non-Hispanic White	75	74	80	80	75	74	65
Non-Hispanic black	18	18	14	14	18	18	23
Hispanic	4	6	<7	5	6	6	10
Other	<4	1	<7	<3	1	2	2
Cost all claims for the two years after index hospitalization	$728,735	$390,936,588	$11,787,402	$14,209,252	$51,215,422	$417,661,977 in two years	$2,496,634,260 in two years
Cost PMPM	$2,298	$427	$3,68	$14,2	$1,898	$427	$160

Table 3 Continued on Next Page

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Characteristics	Die (within 30 days of index hospitalization)	Outpatient Mild	In NH, ICF/MR, or hospice at the time of TBI *	Outpatient severe*	Inpatient Moderate-Severe	Total TBI	Total Without TBI
Aid categories							
None	114	7,171		130	392	[illegible]	N/A
65+ years old	0	20		<10	27	[illegible]	N/A
> 22 years and < 65 years	86	2,022		~45	199	[illegible]	N/A
<22 years old	28	5,129		~85	166	[illegible]	N/A
Packages A and C	160	29,229		297	899	[illegible]	818,388
65+ years old	<10	29		15	66	[illegible]	19
> 22 years and < 65 years	77	5,050		101	364	[illegible]	159,424
<22 years old	80	24,150		181	469	[illegible]	658,945
Medicaid/Care Select****	25	1,546		40	293	[illegible]	93,320
65+ years old	<10	41		<10	<10	[illegible]	188
> 22 years and < 65 years	~25	1,267		~40	~253	[illegible]	63,453
<22 years old	0	238		0	~40	[illegible]	29,679
Waivers	<10	344	0	19	<10		4,925
Nursing Home	14	191	118	20			2,762
ICF/MR			<10	<10			1,142
Hospice			<10	0			1,317
Duals	0	<10	58	31	116		5,735
Proportion of TBI with Severe Injury	20%	[illegible]	[illegible]	[illegible]	30%	[illegible]	N/A

* excluded from later analyses
** (gives everyone in the die column a full "month")
***had to be severe to qualify for "outpatient severe"
****based on the aid category "operationalization" method

Analysis #2: What is the Primary Transition Setting (State 2) for Those with Moderate to Severe TBI?

Goals Analysis #2 was conducted to establish where 1,296 individuals with moderate to severe TBI transition to following discharge from their incident hospitalization. This analysis was designed to answer the following questions:

- Where do moderate to severe TBI patients receive services after hospital (timeframe for establishing the primary transition is 48 hours following discharge following the incident hospitalization)?
- How long do they stay in this setting (mean, median, and range of time)?
- What are the costs associated with each setting (mean, median, and range)?
- Of those in each setting, what proportion has "severe brain injury" (as defined by the Michigan code set taken from the CDC, see above)
- What aid categories do patients fall under at the time of discharge/exit from this setting (or at the 24 month cutoff)?

Results

The vast majority of people were discharged to the community (75%); the next most common setting after discharge from the initial hospitalization for TBI was inpatient hospital (11%) followed by acute rehab hospital (8%). Four percent were discharged to a nursing home and 1% were in the community receiving waiver services (see Table 4a).

Of the 1,296 people admitted to the hospital with TBI, over three quarters (78%) left the initial hospital stay and had no rehabilitation claims. Nearly 1 out of 5 (18%) had a rehabilitation claim in some setting. About 9% were transitioned into the community and received at least one rehabilitation service after their initial hospital stay; 67% were discharged to the community without any rehabilitation claims. One percent of the 1,296 went to a nursing home and received at least one rehabilitation service, whereas 3% went to a nursing home and did not receive a rehabilitation service. No patient was discharged from the initial hospitalization to a primarily longer-term, chronic rehabilitative (CRF) setting. Four percent of patients left the hospital and were transferred to another inpatient hospital, where they received at least one rehabilitation service, and almost 7% went to another in-patient hospital stay but did not have any claims for rehabilitation services. Another possibility is that there is a problem in the encounter data (e.g., lack of specificity or missing). In one example, a patient was in risk based managed care during their inpatient rehabilitative state and had $0 charge. If so, it is possible that we are underestimating rehabilitation services received in hospitals and other settings as well.

Of those in the acute inpatient rehabilitation services, 56% went to RHI of Indiana, 15% went to Southern Indiana Rehabilitation Hospital, 14% went to HealthSouth Deaconess Rehabilitation Hospital, 6% to Frazier Rehabilitation Center, 6% to CHOW and 2% to others. About 98% of the other situations defined as an inpatient hospital stay with rehab in Table 4a had a COS 0652 (PM&R clinician) claim. Among the 55 patients, the hospitals, ranked by descending frequency, are: 1) Community East, 2) Wishard, 3) Memorial South Bend, 4) Clarian and then 5) others with very few in each.

On average, those in nursing homes and waivers were the oldest with mean ages of 48 and 53, respectively. Those in nursing homes, inpatient hospital, and waivers were very disproportionately male. Those discharged to the community were more evenly divided between males and females. It is possible that males have more severe injury [12] and/or that females are less likely to be referred or to accept rehabilitation services. Whereas, the overall population hospitalized with TBI is 18% non-Hispanic black, 25% of people who got rehab in a nursing home and 24% who got rehabilitative services in an inpatient hospital were non-Hispanic black. In contrast, only 8% of people getting services in an in-patient rehabilitation center were non-Hispanic black. One explanation may be rooted in observed healthcare disparities for racial and ethnic minorities [13-15], particularly that black TBI survivors may be less likely to be referred to acute inpatient rehabilitation centers [16]. Whereas 30% of the incident hospitalized TBI cohort had severe TBI (using the CDC's and Michigan's codes), a disproportionate number of people who transitioned to an inpatient hospitalization or an inpatient rehabilitation setting had severe TBI (35% and 49%, respectively). Nearly one-quarter (26%) of people who transitioned to the community after their incident hospitalization had severe TBI codes.

Table 4a. Patient Characteristics of Those with Moderate/Severe TBI by Transition Setting After Discharge from Incident Hospitalization

STATE 2	Community			Nursing Home		Primarily CRF			Waiver		Hospice		Deceased
*Categories Are Exclusive	Rehab	No Rehab	No Claims	Rehab	No Rehab		Rehab	No Rehab	Rehab	No Rehab			
N	112	817	46	12	43	0	55	88	<10	14	0	98	<10
% (No Hospital Claims from Hospital)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.72%
Age mean	29	24		44	48		31	31	58	52		30	46
Age median	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Age range	0 to 80	0 to >90		18 to >90	0 to >90		3 to 64	0 to 64	45 to 72	25 to 86		0 to 62	1 to 82
% Male	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
% race Non-Hispanic white	77	74		<83	77		73	78	--	93		84	78
Non-Hispanic black	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	22
Hispanic	<9	6		--	--		--	<11	--	--		<11	0
Other	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	0
% severe injury	36	26		~33	~30		40	32	0	29		49	33

The average length of time in the inpatient hospitalization or inpatient rehabilitation after the incident TBI admission was ~23 and 20 days, respectively. There were large variations in the length of time in the environment as shown by the ranges. The vast majority of people with TBI went

back to the community, received no rehab, and, on average, remained the longest in that setting. However, there is a huge amount of variation in each of these variables.

Costs are reported for the time spent in each setting. Therefore, the PMPM gives the best measurement for comparison. Those in inpatient hospitals had the highest costs (~$20,000 PMPM) followed by inpatient rehabilitation (~$17,000 PMPM; see Table 4b). The PMPM costs for nursing home stays were substantially lower and the stays were much longer, on average, than for the inpatient hospital and inpatient rehabilitation facilities. Persons on waivers or in hospice had lower costs PMPM than nursing home residents with TBI. As expected, the lowest PMPM costs and longest length of stay were for the majority of persons who went to the community and used few Medicaid services.

Although there was a higher proportion of people (49%) in an inpatient rehabilitation setting with severe TBI than in the inpatient hospital setting (35%; see Table 4a), hospitalized members were more expensive. It is possible that those in the inpatient hospital setting have more co-morbidities or more complicated injuries than those in the inpatient rehabilitation setting. It is also possible that it is more expensive to care for people at the same level of care in an inpatient hospital setting. No patient was discharged from the incident hospital to a long-term, chronic rehabilitation center (CRF).

Table 4b. Length of Time and Cost in First Transition Setting (State 2) for Those with Moderate/Severe TBI

STATE 2	Community			Nursing Home		Primarily CRF	[illegible]		Waiver		Hospice		Deceased
Category of Brain Injury	Rehab	No Rehab	No Claims	Rehab	No Rehab		Rehab	No Rehab	Rehab	No Rehab			
N	112	817	46	12	43	0	55	88	<10	14	0	98	<10
[illegible]			3.6%	[illegible]	[illegible]	0.0%	[illegible]	[illegible]	[illegible]	[illegible]	0.0%	[illegible]	[illegible]
Length of time in setting (days)	66,185	463,972		4,823	12,496		1,433	1,918	1,081	6,491		1,924	6,007
Mean	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Median (2 years = 730 days)	718	724		357	148		20	16	541	706		14.5	667
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
Cost all claims in setting	$735,728	$3,142,195		$1,386,566	$2,944,195		$1,062,974	$1,251,619	$51,409	$1,543,149		$1,074,993	
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
Median	$3,640	$1,429		$70,318	$30,943		$12,442	$9,869	$25,704	$94,684		$9,394	
Min	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
Max	$95,931	$160,861		$354,501	$235,833		$128,091	$93,815	$30,618	$389,627		$81,408	
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
Aid Categories Pkg A/C	45	513		<10	<10		14	19	---			25	
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	

We also examined the incident hospital costs of people with moderate to severe TBI in relation to their discharge setting (Table 4c). On average, people receiving waiver services after discharge had the least expensive incident hospitalization (but the sample size is small <15). It is unclear why those getting waiver services would have smaller incident hospitalization costs – perhaps as a vulnerable population, they are more likely to be hospitalized for observation of their injury. However, the proportion with severe injury is similar to the proportion of severe injury overall. Those who died had the highest incident hospital costs followed by those who were discharged to the nursing home. The incident hospital costs for those discharged to inpatient rehabilitation were slightly higher than those discharged to an inpatient hospital. This is interesting in light of the fact that costs for an inpatient hospital stay after the incident hospitalization are higher than an inpatient rehabilitation stay (see Table 4b). If the difference was attributable to the more impaired patients being discharged to the hospital rather than rehab, one might expect that the initial hospital stays would also be more expensive.

Table 4c. State 1 Costs as a Function of State 2: Index Hospitalization Costs of Those with Moderate to Severe TBI Who Were Discharged to the Various Settings

STATE 2	Community			Nursing Home		Primarily CRF	[illegible]		Waiver		Hospice	Deceased	
Categories Are Exclusive	Rehab	No Rehab	No Claims	Rehab	No Rehab		Rehab	No Rehab	Rehab	No Rehab			
N	112	817	46	12	43	0	55	88	<10	14	0	98	<10
Percent of Incidents	[illegible]	[illegible]	3.6%	[illegible]	[illegible]	0.0%	[illegible]	[illegible]	[illegible]	[illegible]	0.0%	[illegible]	[illegible]
State 1 Costs as a Function of State 2	$1,325,981	$8,884,932		$620,481	$1,871,908		$1,823,874	$2,138,195	$3,011	$49,989		$3,309,993	$816,376
Mean	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	$90,708
Median	$4,010	$3,794		$55,277	$54,784		$20,777	$13,580	$1,506	$675		$25,176	$79,484
Min	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	$67,793
Max	$189,218	$228,100		$150,770	$110,727		$149,255	$207,556	$2,990	$29,861		$184,431	$157,609
State 1 Cost PMPM	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]

Analysis #3: What is the Secondary Transition Setting (State 3) for Those with Moderate to Severe TBI?

Goals Analysis #3 was conducted to establish where moderate to severe TBI patients transition to following the initial transition from the incident hospitalization (i.e., Transition #2). This analysis was designed to answer the following questions:

- Where do moderate to severe TBI patients receive services when/if they make a second transition?
- How long do they stay in this setting (mean, median, and range of time)?
- Of the "hospital" settings, how many TBI patients go to rehabilitation facilities vs. hospitals? What are the costs associated with each setting (mean, median, and range)?
- Of those in each setting, what proportion has "severe brain injury" (as defined by the CDC's code set)?
- What aid categories do patients fall under at the time of discharge/exit from this setting (or at the 24 month cutoff)?

Results

Forty-four percent (570/1,296) of patients with TBI transitioned to another setting after their "state 2" (first transition after incident hospitalization) setting. The majority of patients left their second state and transitioned into either the community (44%) or to an in-patient hospital setting (42%; see Table 5a). Of those hospitalized with TBI who went to another transition state (state #3) from state #2, just under a quarter (22%) received rehabilitative services in state 3. It is important to note that the inpatient stay may be due to any diagnosis (i.e., not necessarily related to the TBI) and can occur at any time in the 2-year, post-incident, follow-up time span. The median age for those who got rehabilitation in a nursing home (35 years) was similar to those getting rehabilitation in an inpatient hospital (34 years), and to those getting inpatient rehabilitation in a long term (CRF) rehab center (38 years). Those receiving services in an inpatient rehabilitation center were somewhat younger (27 years) but the numbers are small. Those who have service codes for rehabilitation in any of the settings are predominately male (63-80%). Considering the demographics of the moderate-severe TBI incident cohort (which is 75% white, 18% black, 6% Hispanic and 1% other), we see that those getting rehab services in the community, in nursing homes, and inpatient hospitals are 83-100% white. Those getting inpatient rehabilitation have a higher proportion of blacks with Hispanics being underrepresented. Whereas 30% of the incident cohort had severe TBI, 40-57% of those getting rehab in "state 3" (in any setting) had a severe injury.

Table 5a. Characteristics by Setting of Those with Moderate/Severe TBI by Secondary Transition Setting (State 3)

STATE 3	Community			Nursing Home		Primarily CRF	[illegible]		Waiver				
*Categories Are Exclusive	Rehab	No Rehab	No Claims	Rehab	Rehab		Rehab	No Rehab	Rehab	No Rehab	Hospice		Deceased
N	96	140	14	<10	~30	<10	<10	~230	<10	<10	<10	<10	16
% in setting	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	3%
% (N / # d/c from State 2)	17.0%	24.7%	2.5%	<2%	~5%	<2%	<2%	~40%	<2%	<2%	<2%	<2%	3%
Age mean	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Age median	28	31		35	69	38	34	35	30	65	41	25	
Age range	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
% male	80	69		~67	~57	~60	~63	~50	—	~75	~40	~67	
% Non-Hispanic White	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-Hispanic black	12	15		0	--	—	--	~18	—	—	0	~22	~22
Hispanic	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other	<10	<7		0	0	—	0	--	—	—	0	0	0
Dual eligibility	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Number of Duals	—	—		—	60%	—	—	20%	—	—	—	—	—

On average, those who transition from state 2 into the community in state 3 stay there for more than a year (Table 5b). The median length of stay for those in a longer-term (CRF) facility was 3-4 months, whereas those admitted to an inpatient hospital or inpatient rehabilitation hospital stayed about 1 month. The most expensive settings (PMPM) were inpatient hospital or inpatient rehabilitation. The costs in these settings in "state 3" were higher than similar costs in state 2. Those who went to a longer term rehab (CRF) facility in state 3 had a lower PMPM ($17,000) than those in an inpatient hospital or rehabilitation center ($20-23,000), but they also stayed an average of 3-4 months as compared to about a month for inpatient hospitalization or inpatient rehabilitation. The state 3 PMPM costs for nursing home stays were substantially lower and the stays much longer, on

average, than for a longer-term rehabilitation facility. Persons on waivers or in hospice still had lower costs. By far, the lowest PMPM costs were for the majority of persons who went to the community.

Table 5b. Tenure and Costs of Those with Moderate/Severe TBI by Secondary Transition Setting (State 3)

STATE 3	Community			Nursing Home		Primarily CRF			Waiver				
*Categories Are Exclusive	Rehab	No Rehab	No Claims	Rehab	No Rehab		Rehab	No Rehab	Rehab	No Rehab	Hospice		Deceased
N	96	140	14	<10	~30	<10	<10	~230	<10	<10	<10	<10	16
% In Setting	44%			~7%		<2%	42%		<2%		<2%	<2%	3%
% (N/# d/c from State 2)	17.0%	24.7%	2.5%	<2%	~5%	<2%	<2%	~40%	<2%	<2%	<2%	<2%	3%
Length of time in setting (days)	49,850	65,163		3,641	7,008	519	278	1,765	790	963	350	242	8,024
Mean	519	465		405	234	104	35	8	395	241	70	27	501
Median	672	649		659	168	97	38	4	395	222	80	27	538
Range	5 to 723	1 to 725		88 to 706	16 to 706	5 to 235	20 to 43	1 to 190	330 to 460	90 to 430	36 to 108	3 to 47	184 to 695
Cost all claims in setting	$516,748	$873,192		$741,349	$1,129,253	$293,316	$212,381	$1,169,991	$57,907	$77,042	$52,251	$166,828	
Mean	$5,383	$6,237		$82,372	$37,642	$58,663	$26,548	$5,132	$28,953	$19,261	$10,450	$18,537	
Median	$3,372	$1,728		$89,433	$13,145	$52,497	$23,419	$2,656	$28,953	$13,584	$7,483	$20,097	
Min	$151	$6		$441	$0	$0	$2,851	$0	$8,089	$1,176	$1,699	$1,965	
Max	$29,179	$303,791		$235,242	$231,883	$132,588	$64,707	$92,287	$49,818	$48,699	$22,880	$32,997	
Cost PMPM	$316	$409		$6,210	$4,915	$17,237	$23,301	$20,218	$2,236	$2,440	$4,553	$20,966	

A summary of transition from state 2 to state 3 is shown in Table 5c (below). The majority of patients who transition to the community for state 2 remain in the community (72%) while 28% of those discharged from their incident hospitalization have some other transition during their two year follow-up. Forty-two percent of those in a nursing home in state 2 next transition to the community in state 3. Ninety-four percent of those transitioning from an inpatient hospital stay and 90% of those transitioning from an inpatient rehabilitation stay go into the community in state 3.

Table 5c. Characteristics of Those with Moderate/Severe TBI Transitioning from a Nursing Home (State 2) into the Community (State 3)

State 2 (top row) by State 3 (left column)	Community	Nursing Home	Primarily CRF	[illegible]	Waiver	Hospice	[illegible]	Deceased	Total
Community	[illegible]	24	0	185	<10	0	90		~250
Nursing Home, inpatient rehab, longer term rehab, waiver or hospice	266	15	0	<10	<10	0	<10		~290
Deceased	<10	0	0	0	0	0	0		20
State 2 lasted until day 730	701	11	0	0	<10	0	0	<10	~730
Total	980	50	0	185	20	0	100	<10	1,296

Analysis #4: What are the most common patterns of care and predominant costs for patients with moderate to severe TBI?

Goals Analysis #4 was designed to summarize costs and capture the most prevalent patterns of care (i.e., transition settings) experienced by most moderate to severe TBI patients. This analysis was designed to answer the following questions:

- What are the cumulative costs associated with states?
- What are the most common patterns of care for moderate to severe TBI patients for the 24 months following incident hospitalization?

Results

As seen in Figure 1 and Table 6, about $21M was spent on initial care of Medicaid patients with moderate to severe TBI. Nearly another $20M was spent on the transitions to states 2 and 3, $5M on people moving from states 3 to 5, and an additional $5M on people moving from states 5 to 8. The total cost of the cohort over the 2-year period was $51.4M.

Figure 1. Costs for Moderate to Severe TBI Patients as a Function of State Number

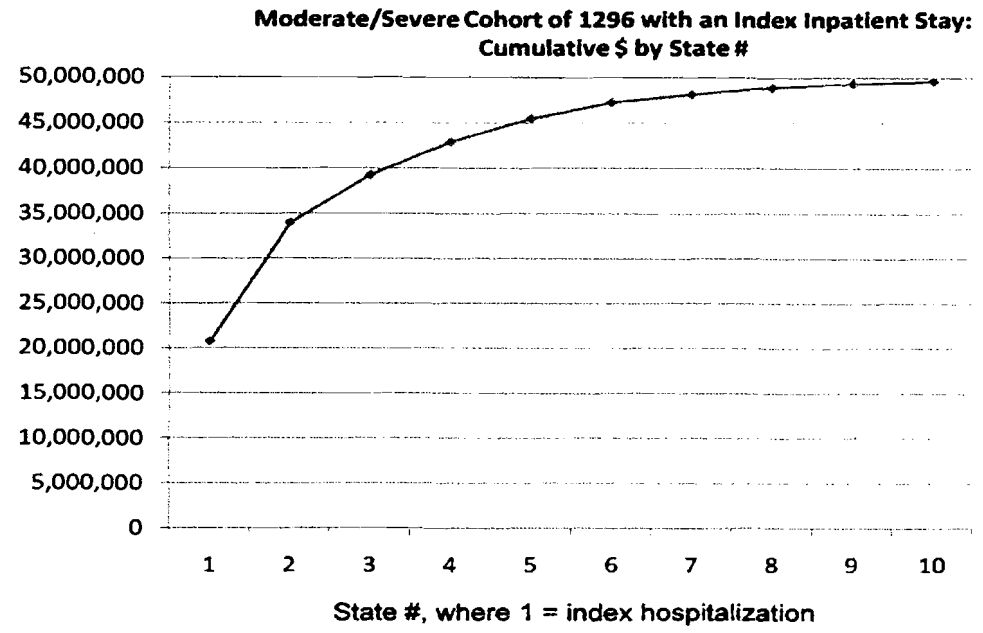

Table 6. Costs for Moderate to Severe TBI Patients as a Function of State Number and Setting

Costs by State & Setting	Community			Nursing Home		Primarily CRF	Waiver				Hospice		Deceased	Total
	Rehab	No Rehab	No Claim	Rehab	No Rehab		Rehab	No Rehab	Rehab	No Rehab				
State 1 (Index Hospitalization)	$1,325,981	$8,884,932		$620,481	$1,871,908		$1,823,874	$2,138,195	$3,011	$49,989		$3,309,993	$816,376	$20,844,740
State 1 PMPM	$17,776	$55,156		$50,873	$49,051		$48,975	$49,705	$11,479	$9,900		$46,825	$43,228	$355,681
State 2 Total Costs	$735,728	$3,142,195		$1,386,566	$2,944,195		$1,062,974	$1,251,619	$51,409	$1,543,149		$1,074,993		$13,192,828
State 2 PMPM	$13,995	$207		$8,768	$7,158		$27,674	$15,701	$14,450	$7,251		$17,042		$84,770
State 3 Total Costs	$516,748	$873,192		$741,349	$1,129,253	$293,316	$212,381	$1,169,991	$57,907	$77,042	$52,251	$166,828		$5,290,258
State 3 PMPM	$16	$409		$6,240	$4,160	$17,237	$25,307	$20,718	$2,236	$2,440	$4,553	$20,966		$102,801

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Figure 2 and its sub-figures (included in the appendices, pp. 31-33) pictorially capture moderate and severe TBI Medicaid members' transition patterns. Each line of the transition figures represents one individual's index hospitalization and following transitions for 24 months after index hospitalization. Figure 2 depicts the transitions of all 1,296 moderate-severe TBI members (who had an index hospitalization between 2003 and 2006) in Medicaid during the study period. There are several dominant transition patterns. The most easily discernible pattern is the transition from index hospitalization (brick red) to community (light aqua). Indeed, echoing results discussed above, this was the most common transition pattern. Other dominant transition patterns were from index hospitalization (brick red) to another inpatient hospitalization (burnt orange) or into primarily acute rehab (ARF; green).

The mean number of transitions was 2.4; the median was 1; and the range was 1-41 transitions over the 2 years post-index hospitalization. Therefore, the maximum number of "states" experienced by any moderate or severe TBI member in the cohort was 42 in the 2 years post-index hospitalization. Note that members who died within 30 days of index hospitalization are counted as having one transition (from the index hospitalization to the "state" of death).

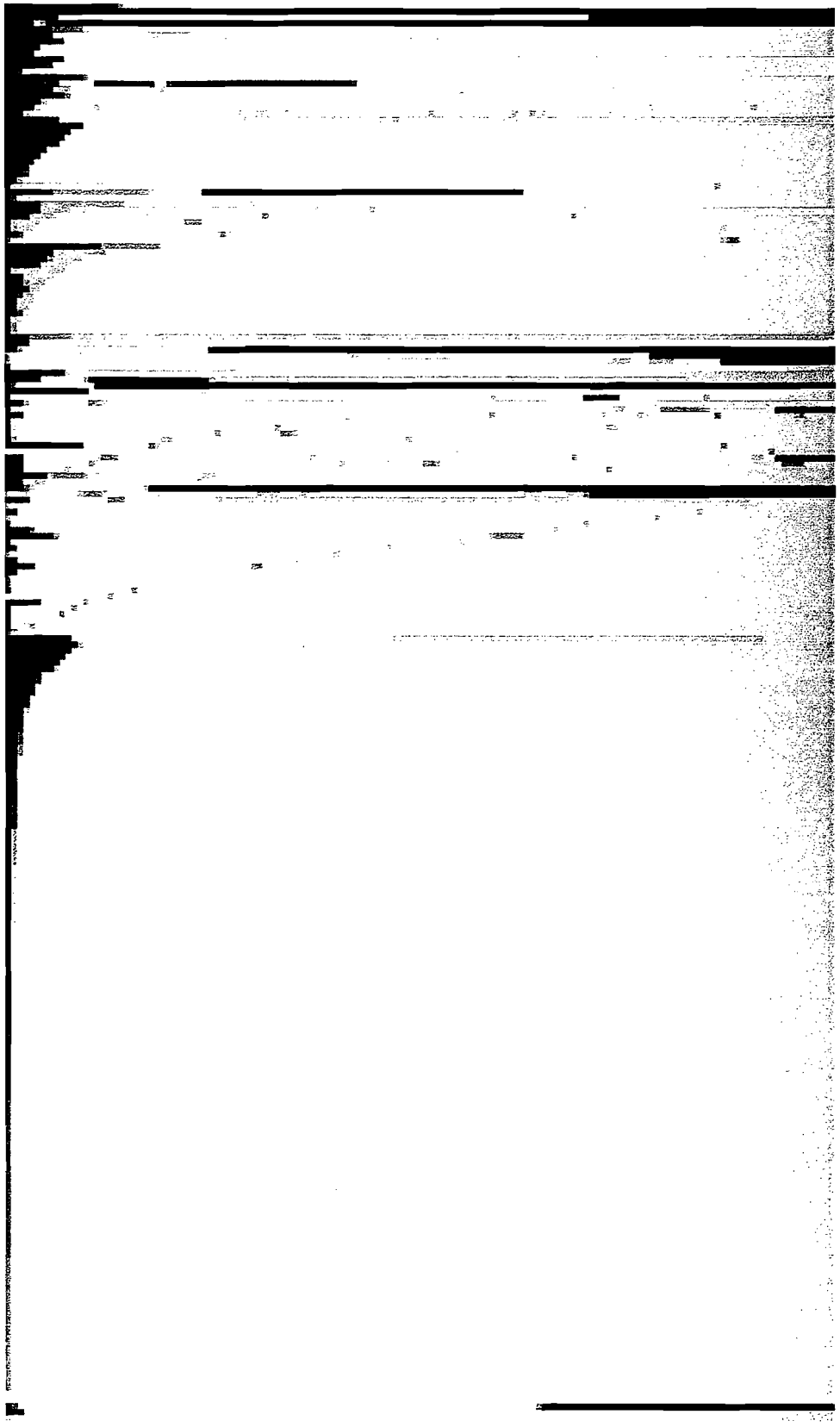
Appendix A (p. 31) includes any moderate or severe TBI member who had a "Primarily Chronic Rehabilitation Facility" (CRF) stay in the 24 months following their index hospitalization. These individuals did not enter the CRF immediately following their index hospitalization stays; rather, they entered the CRF after having transitioned to another inpatient hospitalization, a "Primarily Acute Rehabilitation Facility" (ARF), a nursing home, or after having gone back into the community. These members predominantly had other transitions to nursing homes, waiver services, or back into the community following their stays in a CRF.

Appendix B (p. 32) includes any moderate or severe TBI member who had an ARF stay in the 24 months following their index hospitalization. These individuals generally experienced a transition to an ARF immediately following their index hospitalization, and then re-entered the community following their ARF stays.

Finally, Appendix C (p. 33) includes any moderate or severe TBI member who had a nursing home stay or was on a waiver in the 24 months following their index hospitalization. These individuals either tended to remain in nursing homes or on waivers, or they died or re-entered the community. It is noteworthy that these individuals tended to have the least amount of transitions back into the community in comparison to other individuals in the cohort.

Please note that all members included in the transition figures had to have experienced an index hospitalization between 2003 and 2006 with a moderate or severe TBI in order to be included in the 1,296 cohort depicted in the following transition graphs. All transition graphs have been "blurred" to mask the actual length of stay for each transition setting so as to mask individually identifying information for the sake of HIPAA compliance. Some members may appear in multiple sub-figures in the appendices (i.e., they figures are not mutually exclusive).

Figure 2: Transition Patterns for all Moderate to Severe TBI Patients with an Index Hospitalization Between 2003 and 2006; N=1,296



Legend	
Yellow	Nursing Home
Dark Blue	Hospice
Pink	Waiver
Red	Primarily ARF
	Primarily CRF
Black	Death
Light Aqua	Comm-unity
Pink	Inpatient Hosp
Brick Red	Index Hosp

Analysis #5: What differences exist between TBI and non-TBI patients with regard to types of COSs received and costs of services?

Goals Analysis #5 describes the categories of services received by those with moderate to severe TBI and the differences between those with moderate to severe TBI compared to those without TBI in terms of COS Rollups utilized, as well as costs associated with those COS Rollups. This analysis was designed to answer the following questions:

- What services do Medicaid patients with moderate to severe TBI patients receive and how much do they cost?
- How does the moderate and severe TBI patient group look with regard to common COS Rollups and costs?
- How do the TBI groups differ from the non-TBI group in costs and COS Rollups in the 24 month post incident TBI period?

Results

The costs and proportion of members with each COS are shown in Table 7a below. The 12 services that account for 94% of the costs of TBI patients are highlighted in dark yellow. The 12 services that account for 88% of non-TBI members are highlighted in the darker blue. The services are listed in order of costs for the non-TBI cohort with the services contributing to the highest proportion of the costs listed at the top. The comparison cohort (N=978,591) is comprised of those without TBI in Medicaid during the two-year time period from 1/1/2004-12/31/2005. Many of the most costly services overlap with the exception of ICF/MR service, child dental and other mental health services that contribute to a higher proportion of costs for non-TBI members. Medical supplies, transportation and rehabilitation facilities services contribute to a higher proportion of TBI patient costs.

The light yellow (TBI) and light blue (non-TBI) shaded service areas denote services which were received by 10% or more of members. Approximately 70-100% of TBI patients received the top 6 services (inpatient, physician, x-ray, outpatient, drugs, and clinical). About 40-50% received lab services, eye exams, and mental health services. About a quarter of TBI members receive durable medical equipment, dental services (child or adult), and eyewear. Prescribed drugs were the COS with the highest proportion of non-TBI members (44%). Between 30-43% of non-TBI members received physician services, outpatient services, dental services and clinic services, and between 20 and 24% received x-ray services, lab services and eye exams. Ten to thirteen percent received other mental health, inpatient hospital, eyewear and adult dental services. In comparison to the non-TBI members, the TBI members used as much or more of every COS except ICF/MR, home health and child dental services. In fact, even among the most frequently used services for non-TBI members (with the exception of child dental services), the proportion of TBI patients using those services was generally 2-3 times higher.

Table 7a. Categories of Service for TBI members and Non-TBI member with Most Frequent and Highest Cost Services Highlighted

		Moderate-Severe TBI Members N=1,296				Non-TBI Members N=978,591			
COS Rollup	COS Rollup description	Total $ for COS	% of costs	N of members	% of members	Total $ for COS	% of costs	N of members	% of members
1	Inpatient Hospital	26,166,744	50.8%	1296	100.0%			112,076	11.5%
7	Prescribed Drugs	2,849,205	5.5%	995	76.8%			434,398	44.4%
26	Mental Health Services	874,626	1.7%	211	16.3%			72,256	7.4%
36	Waiver Services	2,084,661	4.0%	44	3.4%			5,448	0.6%
6	Physician Services	2,549,779	4.9%	1267	97.8%			424,906	43.4%
15	ICF/MR Services	0	0.0%	0	0.0%			1,241	0.1%
14	Nursing Home Services	6,182,354	12.0%	136	10.5%			4,504	0.5%
3	Outpatient Services	1,734,597	3.4%	1134	87.5%			334,251	34.2%
27	Dental Services-Child	222,427	0.4%	324	25.0%			314,092	32.1%
17	Clinic Services	908,887	1.8%	903	69.7%			232,085	23.7%
26	Mental Health Other	284,906	0.6%	494	38.1%			117,882	12.0%
16	Home Health Services	610,628	1.2%	108	8.3%			7,975	0.8%
2	Inpatient Psych Svcs	343,600	0.7%	30	2.3%	63,310,600	1.8%	10,575	1.1%
28	Dental Services-Adult	217,781	0.4%	284	21.9%	62,094,683	1.8%	95,594	9.8%
9	Durable Medical Equipment (DME)	431,278	0.8%	341	26.3%	44,449,645	1.3%	39,558	4.0%
8	Medical Supplies	511,360	1.0%	199	15.4%	38,725,772	1.1%	39,432	4.0%
13	Transportation Services	1,516,042	2.9%	752	58.0%	30,227,782	0.9%	55,356	5.7%
12	X-Ray Services	418,407	0.8%	1153	89.0%	28,919,675	0.8%	204,314	20.9%
5	Targeted Case Management (TCM) Services	325,467	0.6%	125	9.6%	21,090,602	0.6%	16,868	1.7%
11	Lab Services	85,841	0.2%	604	46.6%	19,546,349	0.6%	191,779	19.6%
18	Hospice Services	88,517	0.20%	0	0.0%	17,511,740	0.5%	1,377	0.1%
31	Eye Care and Exams	85,182	0.2%	513	39.6%	14,183,090	0.4%	131,250	13.4%
34	School Corporation Services	11,799	0.0%	24	1.9%	11,417,614	0.3%	15,610	1.6%
33	Freestanding Dialysis Services	106,978	0.2%	10	0.7%	10,928,720	0.3%	644	0.1%
19	Ambulatory Surgical Services	30,968	0.1%	58	4.5%	8,802,699	0.3%	11,742	1.2%
32	Eyewear	28,139	0.1%	300	23.1%	7,958,934	0.2%	97,255	9.9%

Table 7a Continued Below

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		Moderate-Severe TBI Members N=1,296				Non-TBI Members N=978,591			
COS Rollup	COS Rollup description	Total $ for COS	% of costs	N of members	% of members	Total $ for COS	% of costs	N of members	% of members
38	EPSDT Services	19,469	0.0%	191	14.7%	7,286,907	0.2%	79,172	8.1%
29	Chiropractic Services	19,803	0.0%	43	3.3%	4,709,598	0.1%	13,092	1.3%
25	Rehabilitation Facilities Services	2,459,819	4.8%	28	2.2%	3,589,197	0.1%	2,338	0.2%
30	Podiatrist Services	7,995	0.0%	80	6.2%	2,167,554	0.1%	10,034	1.0%
99	Unknown Services by Claim Type	178,869	0.3%	60	4.6%	1,324,109	0.0%	2,116	0.2%
20	Therapy Services - Physical	10,219	0.0%	46	3.5%	1,139,531	0.0%	4,818	0.5%
23	Therapy Services - Respiratory	29,999	0.1%	180	13.9%	843,580	0.0%	21,652	2.2%
24	Therapy Services - Audiology	3,748	0.0%	77	5.9%	780,836	0.0%	15,068	1.5%
37	Nursing Services	2,404	0.0%	20	1.5%	585,085	0.0%	3,554	0.4%
10	Prosthetic/Orthotic Services	3,325	0.0%	20	1.5%	274,366	0.0%	2,820	0.3%
22	Therapy Services - Occupational	1,239	0.0%	0	0.0%	189,128	0.0%	760	0.1%
21	Therapy Services - Speech	96	0.0%	0	0.0%	163,346	0.0%	194	0.0%

Table 7b, below, shows the services accounting for the highest proportion of costs in the 2 years after the incident hospitalization shown as the total, for those with moderate TBI and those with severe TBI. The green shaded areas are the top 10 most costly total services, the yellow are the top 10 most costly services for those with moderate injury, and the red shaded area is the services for those with severe injury. Those with severe injury had a somewhat higher proportion of their costs spent on medical supplies and inpatient psychiatric services, while those with moderate injury had a higher proportion of their costs spent on transportation and mental health services.

Table 7b. COS Rollups Accounting for the Highest Proportions of Costs in 2 Years Post-Index Hospitalization

COS Rollup	COS Rollup Description	% of cohort's total costs	% of moderate total costs	% of severe total costs
1	Inpatient Hospital	[illegible]	25.40%	[illegible]
14	Nursing Home Services	[illegible]	21.80%	[illegible]
7	Prescribed Drugs	[illegible]	10.00%	[illegible]
25	Rehabilitation Facilities Services	[illegible]	7.00%	[illegible]
36	Waiver Services	[illegible]	6.80%	[illegible]
3	Outpatient Services	[illegible]	5.30%	[illegible]
6	Physician Services	[illegible]	4.40%	[illegible]
26	Mental Health Services	[illegible]	3.60%	1.30%
13	Transportation Services	[illegible]	2.70%	1.30%
16	Home Health Services	[illegible]	2.00%	[illegible]
8	Medical Supplies	1.60%	1.50%	[illegible]
2	Inpatient Psych Svcs	1.10%	0.30%	[illegible]

Analysis #6: What are characteristics of patients going specifically to the Carbondale (Mentor ABI Center for Comprehensive Services) facility in the study period?

Goals Analysis #6 describes the characteristics of patients who entered the Mentor ABI Center for Comprehensive Services in Carbondale, IL. This analysis was designed to answer the following questions:

- How many members in the study cohort entered the Carbondale facility during the study period?
- What were these members' primary COSs and associated costs?

Results

Sixteen of the 1,296, or 1.2% of the incident cohort of moderate to severe TBI patients received services from the Carbondale Facility over the 24 months of follow-up after index hospitalization (some of these falling into "states" beyond the scope of these analyses). The majority had moderate TBI diagnoses. They were predominantly white (13/16) and male with a median age of 28 (mean 31; range 17- 58). Over $2,000,000 was spent on TBI patients in Carbondale over the two-year follow-up period. The median cost of a Carbondale stay was $106,000 (mean $126,500; range $20,300 - $354,200; the PMPM cost was just over $17,000). The median length of stay was about 7 months (213 days; mean 229 days; range 6 days—661 days). The vast majority of claims were paid for the category of services 2500 (Rehabilitation Facilities Services). See Table 8a below.

Table 8a. COS Rollups and Costs of the 16 Patients Who Received Services at Carbondale

COS Rollup	COS Rollup Description	$ in Carbondale	% of costs (% of Carbondale total)
25	[illegible]	[illegible]	[illegible]
7	Prescribed Drugs	55,625	2.70%
[illegible]	[illegible]	[illegible]	[illegible]
14	Nursing Home Services	20,213	1.00%
[illegible]	[illegible]	[illegible]	[illegible]
28	Dental Services-Adult	3,144	0.20%
[illegible]	[illegible]	[illegible]	[illegible]
13	Transportation Services	1,086	0.10%
[illegible]	[illegible]	[illegible]	[illegible]
9	Durable Medical Equipment (DME)	553	0.00%
[illegible]	[illegible]	[illegible]	[illegible]
17	Clinic Services	86	0.00%
[illegible]	[illegible]	[illegible]	[illegible]
5	Targeted Case Management (TCM) Services	47	0.00%
[illegible]	[illegible]	[illegible]	[illegible]
	Total	**2,023,966**	**100%**

In a separate analysis to better understand the number of Medicaid recipients receiving services in Carbondale, IL, during the study period, there were 151 unique Indiana Medicaid patients with "Memorial Hospital of Carbondale" claims over the course of the six years 2003-2008. The numbers of unique patients per year in the study period are in Table 8b below.

Table 8b. Indiana Medicaid Patients with "Memorial Hospital of Carbondale" Claims (2003-2008)

Year	Unique Patients
2003	[illegible]
2004	46
2005	[illegible]
2006	36
2007	[illegible]
2008	45

Of the members with Carbondale location codes on their claims, 45% were in the mild TBI group; 10% were in the moderate to severe TBI group; and 40% were in neither group (attending Carbondale with a primary or secondary diagnosis other than TBI). This separate analysis looking at all unique Indiana Medicaid patients receiving services in Carbondale, IL, serves to illustrate an important point: there is a substantial number of individuals that ultimately go to the facilities in Carbondale, IL, to receive services that were not "picked up" in our cohort sample. Recall that 16 members were "picked up" in the cohort of moderate-severe TBI patients who received services at the Mentor ABI Center for Comprehensive Services in Carbondale, IL. We estimate that the number of individuals receiving services at Carbondale's facilities is actually 4-5 times the number included in our cohort sample. Reasons that individuals may not have been "picked up" in the sample for this study are that they had private insurance (or another payer source besides Medicaid) at the time of their TBI injury and reached their limit or cap and then became Medicaid eligible. Another explanation is that they could be individuals whose TBI ICD-9 diagnosis would not have fallen under our definition of TBI or moderate-severe TBI. Extrapolating the $2M in costs over a two year period for the 16 people receiving services at Carbondale that were included in our sample, we estimate that Medicaid is paying approximately $4M to over $5.5M for 34-47 individuals receiving services at Carbondale in a given two year period.

Summary & Discussion of Findings

Demographics of the Indiana Medicaid TBI Cohort.

The study cohort of moderate to severe TBI members in Indiana Medicaid with index hospitalizations occurring in calendar years 2003-2006 (plus 2 years post-index hospitalization) account for only 0.13% of members, but a disproportionate amount (1.5%) of total Medicaid costs. These prevalence figures are not dissimilar to national data, which estimate that 5.3 million (2%) of Americans in the general population currently live with TBI, with 20% of these (or 0.4%) having had the moderate-severe injuries associated with longer-term impairment [17]. In addition, our finding in the moderate-severe TBI Medicaid cohort that there is a preponderance of males (61%), Caucasians (75%), and young adults (median age=22) is consistent with the overall results of the Traumatic Brain Injury Model Systems (TBIMS) research program [18].

We observed that African-American Medicaid members with moderate-severe TBI were less likely than Caucasian Medicaid members to get inpatient rehabilitation after incident hospitalization. This finding has been demonstrated in the literature [16]. However, other research did not find evidence of racial disparities in access to rehabilitation, but rather that there was variation in long-term functional outcomes by racial and ethnic group [16, 19-20], arguing that this is more reflective of disparities in acute trauma care [21-23]. In addition, we noted, in our cohort, that females were less likely to get any type of rehabilitation. This could reflect a genuine healthcare disparity, or, alternatively, could be a function of systematic differences between males and females with regard to TBI severity [24-25]. For example, females have been repeatedly shown to have better outcomes after neurotrauma, even after controlling for severity of injury. This "advantage" has been attributed to neuroprotective and restorative effects of estrogen and progestin both at time of injury and post-injury [12, 26-30]. In contrast, one meta-analysis concluded the opposite, namely that females fared worse than males in terms of recovery from TBI [31].

Costs and Disposition of Moderate-Severe TBI Patients in Medicaid

The incident hospital costs for those discharged to inpatient rehabilitation were a little higher than for those discharged to an inpatient hospital. This is interesting in light of the fact that costs for an inpatient hospital stay after the incident hospitalization are higher than an inpatient rehabilitation stay (see Table 4b). If the difference was attributable to the "sicker" patients being discharged to a hospital rather than to rehabilitation, one might expect that the initial hospital stays would also be more expensive. The majority (78%) of moderate-severe TBI patients are discharged to the community and remain there without admittance to rehabilitation facilities or hospitals. Both costs and Medicaid service use are highly concentrated in a relatively small proportion of moderate to severe TBI cases. The highest-cost utilizers tend to (a) use inpatient services short of longer-term rehabilitation, followed by (b) nursing home and hospice, and then followed by (c) waiver. They also tended to use the following categories of service: inpatient hospital care, prescription drugs, nursing home care, rehabilitation care, and outpatient, waiver, and mental health services. Just over 1% (16) of the moderate-severe TBI cohort sampled by this study went on to receive longer-term rehabilitation services at Carbondale, IL. These patients were predominantly younger white males (median age of 31). The median cost of a stay at Carbondale was $106,000. Relatively few patients are receiving acute inpatient rehabilitation (7.5%), after initial hospitalization, while 18% received a rehabilitation service in

some setting (not necessarily inpatient). These rates for rehabilitation services seem rather low, and beg the question of the need to encourage short-term, intensive rehabilitation to improve outcomes, and eventual community reintegration.

Recommendations

Improving Indiana's infrastructure for TBI management is our primary recommendation. This involves several steps, and we recommend that these improvements be a function of collaborative efforts between the Indiana State Department of Health, the Office of Medicaid Policy and Planning, as well as other key stakeholders.

1) First, building on the MMAC's previous two reports on Traumatic Brain Injury (TBI reports I and II, dated June 2009, and October 2009, respectively) we recommend that, because TBI impacts such a small proportion of Indiana's population that the Home and Community Based TBI waiver be revised and expanded to provide services to more individuals. Because >75% of those with moderate and severe TBI are discharged into the community without receiving rehabilitative services, and given that a sizable number (over 25%) have "severe" TBI diagnoses, waiver expansion could provide significant opportunities for improvement to these individuals. It is tempting to assume that these individuals must have good prognoses because they do not receive rehabilitation; however, such an assumption is not testable by these claims-based data due to the impossibility of analyzing such individuals' outcomes. Further, expanding waiver services could provide an opportunity for individuals, who might otherwise be placed in rehabilitation facilities or nursing facilities to receive assistance in their communities, a strategy cited as leading to even more improvement in outcomes post-TBI by site leaders of the Model TBI Systems Program [32-33]. With this in mind, we also recommend that Indiana increase its provision of vocational rehabilitative services with the intent of returning as many TBI survivors to the workforce.

2) Next, we strongly recommend that, in lieu of pursuing a single, large-scale, Carbondale-like facility in the state of Indiana, that consideration be given to the establishment of regional TBI facilities (possibly one for each of the 8 Medicaid care regions across Indiana). Improving regional infrastructure to enhance TBI outcomes will help serve rurally located individuals, and increase the chances that more individuals could remain closer to home to receive treatment.

3) Similarly, we recommend that existing facilities in the state, both rehabilitative and nursing facilities, work to train staff in TBI treatment, or hire staff specifically for treating individuals with TBI. Enhanced Medicaid reimbursement could be offered to nursing homes that meet criteria for offering specialized TBI care (e.g., have staff with accredited specialized training in behavior management, and space renovated to suit the needs of TBI patients, such as monitored seclusion room areas).

4) If longer-term rehabilitation (chronic rehabilitative facility, "CRF," care) is clinically necessary, we recommend that OMPP incentivize the utilization of these rehabilitative services within the first two years of injury (as recommended in the previous MMAC TBI reports I and II) in

order to maximize clinical outcomes, and limit longer-term costs. Case review of a number of Carbondale TBI patients together with our current analyses suggest that there are significant delays in the delivery of these services, which likely limits their effectiveness. Further, incentivizing immediate, post-injury rehabilitative services will help to keep better track of when an individual's injury occurred in relation to rehabilitative services they either have or are seeking to receive. This is expected to be especially pertinent in the cases of individuals who became Medicaid-eligible months (or years) post-injury, and had another source paying for any prior TBI-related care. Tracking date of injury and use of services will help to determine whether an individual will (most likely) benefit more from rehabilitative care (i.e., it has been approximately two years or less since the date of the person's TBI), or care that assists the individual in compensating for their TBI-related deficits (i.e., it has been more than two years since the date of the person's TBI).

5) We also recommend that efforts be made to increase primary prevention approaches. The data reported herein demonstrate the significant costs associated with index hospitalizations, which could be avoided with primary prevention efforts, such as seatbelt, distracted driving, and helmet laws and enforcement. For moderate and severe TBI patients in our cohort, of the $51.4M spent from the time of index hospitalization through two years thereafter, nearly $21M of this was attributable just to the index hospitalization. Strong primary prevention efforts, again recommended to be collaborative between key stakeholders in the state of Indiana, could substantially decrease these costs. Funding models of the type recommended in TBI report II, such as the establishment of "Auto no-fault" fund, through a levy on auto insurance or a portion of traffic violations being allocated to increased TBI funding, could also help defray the cost of acute care, allowing more Medicaid dollars to be utilized for rehabilitative efforts.

6) Since, in the current analysis, we did not have access to some key mediating/moderating clinical variables such as type or severity of disability, we recommend that for future quality monitoring purposes, OMPP consider including a reporting requirement of standardized functional assessment data in Medicaid patients with moderate-severe TBI (we recommend utilizing either the FIM, DRS or GOS-E as described in MMAC TBI report I). This information could be captured upon admission and discharge from acute hospitalization, pre- and post-acute rehabilitation care, and each six months thereafter for patients receiving some type of sub-acute rehabilitation. This would facilitate outcomes comparisons with those achieved in other TBI programs across the country.

7) Finally, we strongly recommend that OMPP further investigate whether differences in receiving inpatient rehabilitation for minorities and for women, compared to Caucasian men, reflect disparities in care for individuals sustaining TBIs. Based on the differences emerging in the current analyses, Caucasian men with moderate or severe TBI were disproportionately more likely to receive inpatient rehabilitation after their index hospitalization. OMPP could also consider monitoring outcomes for moderate to severe TBI patients to examine whether disparities in long-term outcomes emerge for minorities and/or women and compare this to national and other states' statistics.

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Traumatic Brain Injury: Synthesis of Indiana Medicaid Data

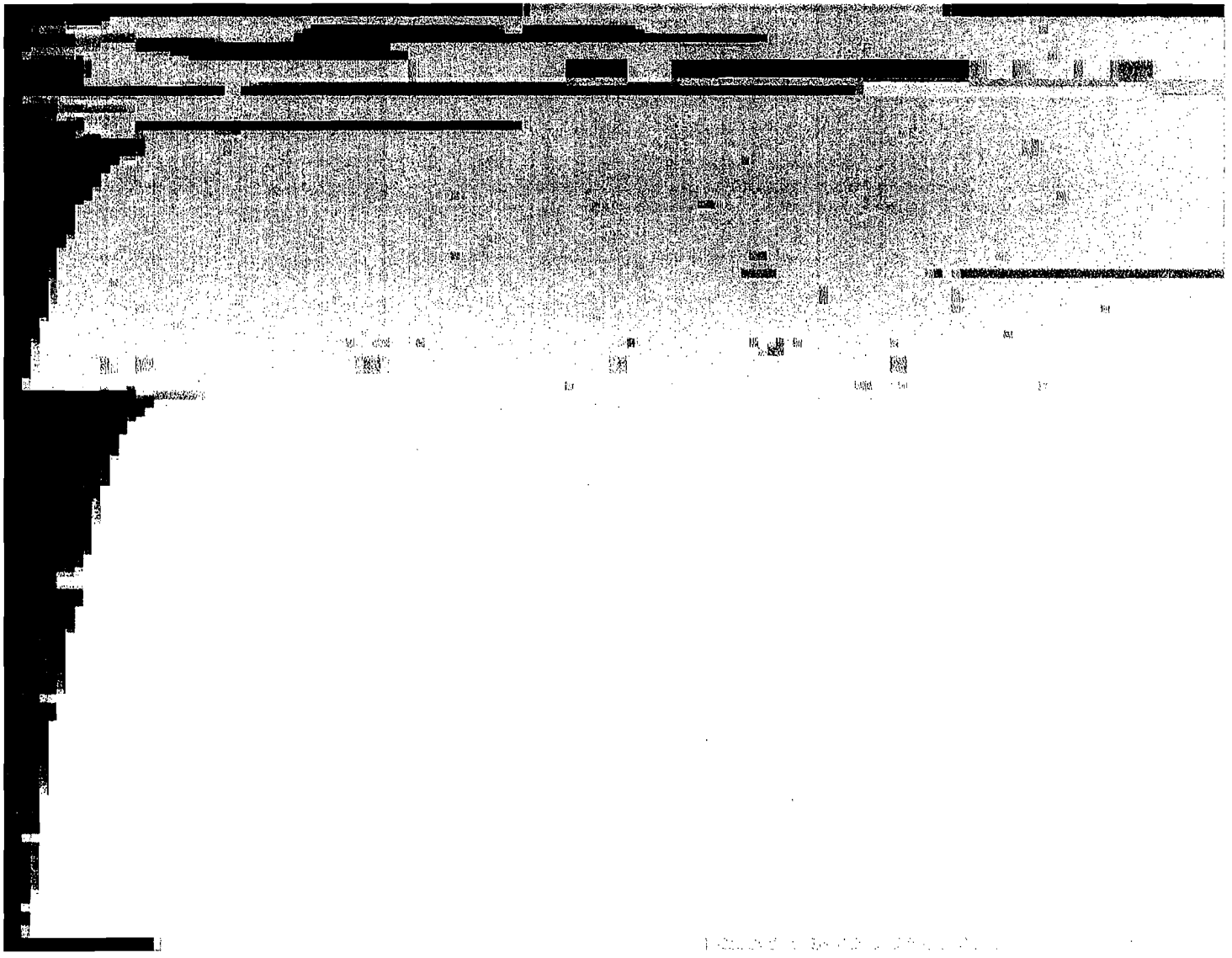
Appendix A

Any Moderate or Severe TBI Member with a Primarily Chronic Rehab Stay (COSs 2500/2510); N = 21

Legend	
Yellow	Nursing Home
Dark Blue	Hospice
Pink	Waiver
	Primarily ARF
Red	Primarily CRF
Black	Death
Light Aqua	Community
Burnt Orange	Inpatient Hosp
Brick Red	Index Hosp

Appendix B

Any Moderate or Severe TBI Member with a Primarily Acute Rehab Stay (COS 0120); N = 96

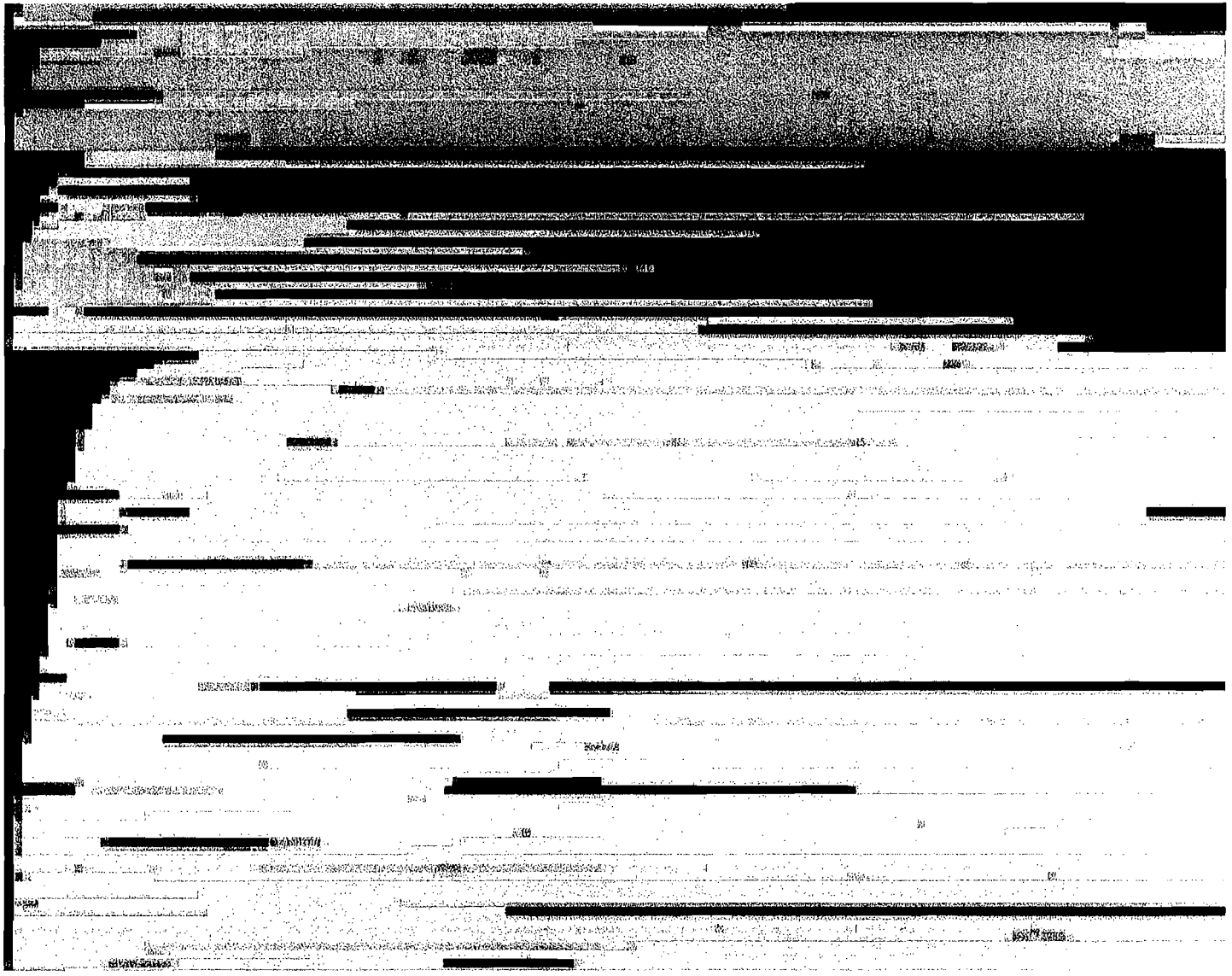


Legend	
Yellow	Nursing Home
Dark Blue	Hospice
Pink	Waiver
	Primarily ARF
Red	Primarily CRF
Black	Death
Light Aqua	Community
Burnt Orange	Inpatient Hosp
Brick Red	Index Hosp

Traumatic Brain Injury: Synthesis of Indiana Medicaid Data

Appendix C

Any Moderate or Severe TBI Member with a Nursing Home Stay or on a Waiver; N = 167



Legend	
Yellow	Nursing Home
Dark Blue	Hospice
Pink	Waiver
Red	Primarily ARF
	Primarily CRF
Black	Death
Light Aqua	Community
Burnt Orange	Inpatient Hosp
Brick Red	Index Hosp

Research

Heath Finance Commission
Testimony – Julie Pratt

Health Finance Commission – Testimony: Julie Pratt

Thank you to the Health Finance Commission for this opportunity to bring attention to the incidence, prevalence, and impact of brain injury within the state of Indiana. As part of this presentation, June Holt asked me to share part of my brain injury story and its impact on my life. I must admit that at first, this seemed like a simple task. However, I found myself struggling to limit the many details of my story because the impact of my brain injury has been so pervasive.

I don't feel I should have to wear a sign just to get appropriate recognition that I have a brain injury. I am not shy or ashamed to share that I have a brain injury. However, the typical response is, "but you look normal". I am very pleased to "look normal" as it is much easier to navigate the chores of everyday life. And, because I "look normal," people don't treat me as different. But my looks do not help me when I'm seeking treatment for my brain injury. It works against me because I don't look like someone who's suffered a brain injury. Yet, I struggle everyday with recurring problems directly as the result of my car accident.

In some ways, my story is simple. I was a belted driver, traveling at 55 MPH in the right lane of a four-lane, divided highway on Dec. 28, 2001, the Friday before New Year's Eve weekend. The Dodge Ram truck crossed the median at a high rate of speed and "T'd" me on the driver's side. I lost consciousness and "came to" as I skidded into a nearby field. I checked my arms and legs. They were there but I couldn't turn to look at anyone's face. The policeman asked if I wanted to go to the hospital and I said yes. I was having trouble talking and remembering important details when the emergency personnel asked. The only neurological question the ER doctor asked me was "can you feel your feet?". I could but because I was awake and talking in the ER; I wasn't evaluated for a brain injury and I was discharged within a few hours of injury. I was in a great deal of pain in my back and neck and I was sent home with a muscle relaxant to which I was allergic. No follow-up was recommended except to see a doctor if I continued to feel sore because I was belted.

At the time of my car accident, I was a full-time graduate student seeking a doctoral degree in Counseling Psychology at Ball State University. I was also working full-time as a Masters-level therapist at a local community mental health center. I was working on my dissertation research and had recently applied for a one-year internship to complete my PhD degree. Through my coursework in neuropsychology, I knew the risks of a TBI (traumatic brain injury) from a MVA (motor vehicle accident). Yet, I could not find any medical professional that specialized in brain injury nor was I evaluated for a TBI immediately post-accident.

I do not think that how I look should determine whether or not I have suffered a traumatic brain injury. Nor should my looks deny me treatment. However, when I describe my recurring difficulties since my car accident, I am dismissed by professionals. When I demonstrate my problems with balance, word-finding, speech, etc., I am still dismissed by professionals. Only my family who I live with 24 hours a day, can "see" how I've struggled since my car accident. And, although my mother attends doctor appointments with me and shares her daily observations of my struggle, this information is also dismissed.

My difficulty in preparing this testimony was in evaluating the impact of my TBI on my life. I wasn't able to return to school. I moved home within a few days of my car accident and I never went back to live independently in my apartment. I lost my degree because I wasn't able to make timely progress on my

dissertation proposal. I had to withdraw my applications for internship. I lost my degree despite completion of all coursework requirements. I lost my job because I was never cleared to return to work. I was plunged into poverty as my disability insurance ran out. I didn't know to apply for social security and then my application was delayed several times for appeal. I had a hard time finding an attorney to help me obtain social security disability. I didn't get a hearing until July 2007. I fired two personal injury attorneys before I found a third attorney who understood and could successfully pursue a personal injury lawsuit with a TBI. My PI case was settled in early 2007, over five years after the car accident.

I sought treatment for my injuries within the first week post-injury. However, I could not find a doctor who was able to refer me to a doctor who specialized in brain injury. I struggled to understand my symptoms and to describe my symptoms. It wasn't until I called the local brain injury office in early 2004 and talked to a family caregiver that I received some direction in my quest for treatment for my brain injury. It was suggested that I attend a local support group and talk with another support group member about her struggles with mild TBI symptoms. She recommended that I see Dr. Kaelin at Indiana Rehabilitation Associates. My initial appointment was scheduled for May 2004, twenty-nine (29) months (2 years, 5 months) after my car accident and after my initial injury. This was the first time I was able to present my list of symptoms and have them confirmed as due to a brain injury. I was diagnosed with mild TBI. Only after this initial appointment could I then be referred to other professionals that specialized in treating TBI symptoms.

However, despite extensive objective testing such as MRI's, EEG's, evoked potential responses tests, etc. structural brain injury was not evident. As you may be aware, diffuse axonal shearing does not show on these types of objective tests. And, because no one tested me for TBI problems immediate post-car accident or during the first three (3) to six (6) months post-injury, it is hard to understand the magnitude of injury. I only have my personal report to share as well as the personal observations of my family caregiver. And, these were routinely dismissed by all the medical professionals from whom we sought treatment.

The impact of my TBI in my life has been complex and diverse. I continue to struggle with overwhelming fatigue, balance issues, sound and visual sensitivities that impair my ability to participate in many activities most take for granted (like attending church, grocery-shopping, eating in a restaurant, attending movies and other entertainment events, etc.). I continue to have a great deal of pain and problems with walking, sitting, and standing for long periods of time.

I can never recover the lost income, the high health insurance premiums that we paid before I received Medicare, or the PhD degree that was almost complete. I can't expect to save for my future or my retirement because I now live below the poverty guidelines. When I was focused on seeking and receiving treatment, I remained determined and focused my energies to recover to my pre-accident level of functioning. I continue to struggle with functioning every day and manage in spite of my many challenges due to my chronic TBI symptoms. My future goals are fuzzy and unclear. Daily survival issues remain predominant. My overall quality of life remains compromised in all aspects. In the present, it has been hard to remain positively focused on what I can do and not on what I can't do. It is equally hard to make plans for my future. Saving for my future and planning goals for my future are hard to do when my educational options and my income are severely limited.

Scott McNichols is a North Central High School graduate with four state championships in men's soccer (with recognition from the Indiana State Legislature in 1996) and a graduate from Indiana University, Bloomington (Acacia Fraternity). Scott had the opportunity that many of us don't... to realize his dream. Scott was working and living in the mountains of Northern California with his dog Sydney. On March 8,2004 Scott's mother, Becky, got the call no parent wants to receive...that her son was being airlifted off the mountains to a trauma hospital in Reno, Nevada. At that moment, Scott's life and dreams were shattered due to a tragic snowboarding accident resulting in a traumatic brain injury. Time seemed to stop for Scott's family and friends too.

Scott not only followed his dreams; he also followed his heart. As his best friend, Brian Fitzgerald, says, "Scott always reached out to others, desiring to make a difference. In all that he did, Scott demonstrated the importance of respect, loyalty, strength, kindness, friendship and compassion for all."

Now, six years later... Scott's injury has left him wheelchair bound, quadriparetic, a seizure risk, and fighting fatigue and body contractures. His brain injury also causes difficulties in activities of daily living and cognitive issues with attention and concentration, hand eye coordination, problem solving, all combined with limited communication ability and mild depression. Scott is physically healthy, yet very vulnerable as he totally depends upon others for his safety and care.

Scott is considered "locked in"... he has all his thinking ability and understands. Scott is not "deaf and dumb" as the public tends to believe due to his physical appearance and difficulty in communication from the brain injury. Scott enjoys visits with friends, family and neighbors. He likes to hold his 7 month old nephew Nolan Scott. Scott enjoys being read to, listening to NPR, watching sports, participating in field trips, attending concerts and movies, walks on the Monon, exercising in the pool at the Fisher's YMCA, and manicures and pedicures.

In collaboration with his mother, Becky McNichols and others, Scott wants to continue making a difference... advocating for what he believes is needed for persons with brain injury. Scott feels that persons with brain injury are one of our state's most vulnerable populations a group of persons with disability who are not receiving quality care, proper diagnosis and treatment and services. Many persons with brain injury who do receive the right care, opportunities and support can return to work, to school, their communities and/or families. All can have a better life. Scott's experiences that include challenges, improper medical care, safety issues and government obstacles (at all levels) indicate a very broken and disconnected system in our great state.

As a citizen of Indiana Scott needs your help to establish a new system, one that does not operate based on antiquated medical journals and teachings, payment criteria that doesn't match the condition, lack of policy and law, social stigma, bureaucracy at its worse through the Medicaid system, lack of accessibility, poor transportation options, unsafe and non-existent housing, no resources and serious lack of accountability, lack of education and awareness, little attention given to prevention putting our children in harm's way, poor medical care, dental care and therapies treatment for brain injury in 2010. Our state is behind the curve everywhere.

Scott's list is based on his and his mom's personal experiences over the past 6 years and includes:

- Severely needed resources and coordination of programs/services
- Myth Busters
    - Erroneous "2 year" or "4 year" limitations and labeling of ability and recovery – persons with brain injury continue to heal over their life time
    - Persons with brain injury aren't "deaf and dumb"
    - Concussions are a brain injury
    - Attempt to disconnect brain injury and "cognitive" impedes services... they are one and the same and services are being denied for "cognitive" purposes

- Education of medical providers at all levels, hospitals and emergency rooms
- Education of Medicaid and private insurance providers that cognitive rehabilitation is a proven regime of medical and therapeutic services designed to improve brain function.
- Education of citizens and government officials and police
- Accountability and oversight of
    - DME providers
    - Medical providers
    - Home health care providers
    - Group and Residential home providers
    - Medicaid Caseworkers
- Coordination of care options by knowledgeable and qualified persons
- Housing options in safe neighborhoods with accessibility
- Transportation is a nightmare
- Medical services – poorly trained nurses and attendants for in home care and nursing facilities
- Waiver options for TBI and A & D waivers expanded to mirror DD waiver and Autism Waiver (Scott is on A&D waiver – had his injury occurred two years earlier, options different and more appropriate)
- Waiver waiting lists eliminated
- Waiver attendant care hours expanded to allows persons to stay in their homes(law suite pending)

- Long term rehabilitation in our state modeled after Michigan and Colorado – Scott was at Rainbow Rehabilitation, Farmington Hills, Michigan for nearly two years following a law suite against Indiana for limited and inappropriate criteria. I traveled their every other weekend – Scott missed family and friends
- On going therapies, opportunities for recreational therapy, music therapy, alternative treatments that are appropriate for brain injury, not end of life 90 year olds

Scott has been on a long journey of recovering littered with many obstacles, many naysayers and challenges since he was air lifted home from Reno, Nevada six years ago. He has had many more opportunities than others because of the knowledge and tenacity of his mother with support of others. Scott has been through a roller coaster of facilities, caretakers, and medical and therapy persons. He is currently under the care of knowledgeable and quality physicians who work as a team, think outside of the box, and advocate for persons with brain injury. He is lucky, but needs so much more. Others are ignored, abandoned and kicked to the curb. Scott resides with his mother in Fishers. Please help by initiating and supporting a two year brain injury commission that will study this issues and will include persons like Scott's mom, (Dr. Allison Williams, Dr. Strobel - Brain injury medical providers), (Doug Bebee, Karen May - Community Hospital and Brain Injury Association), (Nancy Griffin, June Holt - Generations Project), (Vickie Perry - Advantage Health)...along with other interested and caring representatives of our state.

Respectfully Submitted on Behalf of Scott McNichols
Becky McNichols, 6359 Stratford Drive South, Fishers Indiana
becky@blmsolutions.org - 317-727-6187

Scott with family, old high school friends, club soccer buddies, and I.U. Acacia brothers who gather annually to celebrate his life.

Scott having a camping experience in Michigan, not available here in Indiana for adults with brain injury

HFC, 10-28-10, Exhibit 5

PRELIMINARY DRAFT
No. 3476

PREPARED BY
LEGISLATIVE SERVICES AGENCY
2011 GENERAL ASSEMBLY

DIGEST

Citations Affected: IC 16-18-2-62; IC 16-41-42.5.

Synopsis: Indiana brain injury study commission. Establishes the Indiana brain injury commission and requires the commission to make certain reports to the general assembly.

Effective: Upon passage.

A BILL FOR AN ACT to amend the Indiana Code concerning health.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 16-18-2-62 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE UPON PASSAGE]: Sec. 62. (a) "Commission", for purposes of IC 16-19-6, refers to the commission for special institutions.

(b) "Commission", for purposes of IC 16-31, refers to the Indiana emergency medical services commission.

(c) "Commission", for purposes of IC 16-41-42.5, refers to the Indiana brain injury commission.

~~(c)~~ **(d)** "Commission", for purposes of IC 16-46-11.1, has the meaning set forth in IC 16-46-11.1-1.

SECTION 2. IC 16-41-42.5 IS ADDED TO THE INDIANA CODE AS A **NEW** CHAPTER TO READ AS FOLLOWS [EFFECTIVE UPON PASSAGE]:

Chapter 42.5. Indiana Brain Injury Commission

Sec. 1. As used in this chapter, "commission" refers to the Indiana brain injury commission established by section 2 of this chapter.

Sec. 2. (a) The Indiana brain injury commission is established. The commission consists of the following members:

(1) Two (2) members of the house of representatives, who are not affiliated with the same political party, appointed by the speaker of the house of representatives in consultation with the minority leader. The speaker shall designate one (1) member under this subdivision to be chairperson of the commission in an odd-numbered year.

(2) Two (2) members of the senate, who are not affiliated with the same political party, appointed by the president pro tempore of the senate in consultation with the minority leader. The president pro tempore shall designate one (1) member under this subdivision as the chairperson of the commission in an even-numbered year.

(3) Two (2) individuals who are brain injury survivors, appointed as follows:

(A) One (1) individual appointed by the speaker of the house of representatives.

(B) One (1) individual appointed by the minority leader of the house of representatives.

(4) Two (2) individuals who are caregivers of a family member who has a brain injury, appointed as follows:

(A) One (1) individual appointed by the president pro tempore of the senate.

(B) One (1) individual appointed by the minority leader of the senate.

(5) One (1) individual who:

(A) is employed by the office of the secretary of family and social services; and

(B) has professional knowledge of brain injury services; designated by the secretary of family and social services.

(6) One (1) individual who:

(A) is employed by the state department; and

(B) has professional knowledge of brain injury services; designated by the commissioner of the state department.

(7) The following individuals appointed by the speaker of the house of representatives in consultation with the minority leader of the house of representatives:

(A) One (1) individual who is a physician licensed under IC 25-22.5 and who specializes in brain injury rehabilitation.

(B) One (1) individual nominated by a veterans' organization.

(C) One (1) individual nominated by the Indiana Home Care Task Force Brain Injury Committee.

(8) The following individuals appointed by the president pro tempore of the senate in consultation with the minority leader of the senate:

(A) One (1) individual who is a provider of brain injury rehabilitative services.

(B) One (1) individual nominated by a mental health organization.

(C) One (1) individual nominated by the Brain Injury Association of Indiana.

(b) The legislative services agency shall staff the commission.

(c)The appointing authority shall make the initial appointment of members not later than two (2) months after the establishment of the commission.

(d) A member of the commission is not entitled to per diem or travel expenses incurred in attending commission meetings.

(e) The appointments made under this section are for the duration of the commission. If a vacancy occurs on the commission, the appointing authority who appointed the former member whose position has become vacant shall appoint an individual to fill the vacancy.

Sec. 3. The commission shall study and report to the general assembly on the following:

(1) The prevalence and scope of brain injuries in Indiana.

(2) The existing and needed infrastructure in Indiana for treating brain injuries.

(3) The need in Indiana for acute, post-acute, and life span services for brain injuries, including the following:

(A) Medical.

(B) Rehabilitative.

(C) Home and community based care.

(D) Housing.

(E) Transportation.

(F) Psychosocial.

(G) Psychiatric.

(H) Financial.

(I) Quality of life needs.

(J) Training.

(K) Therapy.

(4) Access to services through a Medicaid waiver, including access to equipment and supplies.

(5) The need for brain injury educational training for health care professionals and the public, including education concerning prevention and awareness.

(6) Employment and occupational issues for individuals with brain injuries.

(7) Public and private expenditures in all settings associated with the treatment of individuals with brain issues.

(8) Projected costs if Indiana expanded publicly funded brain injury services and potential public and private money sources.

(9) The impact of brain injuries on Indiana's economy.

(10) Federal programs that may affect the availability and financing of brain injury services in Indiana.

Sec. 4. The commission may meet throughout the year and shall meet at least quarterly and as often as the chairperson considers necessary.

Sec. 5. The affirmative votes of a majority of the members appointed to the commission are necessary for the commission to take action on any measure, including final reports.

Sec. 6. (a) The commission shall prepare the following reports and submit the reports in an electronic format under IC 5-14-6 to

the general assembly:

(1) A preliminary report not later than December 1, 2011.

(2) A final report not later than December 1, 2012.

(b) The commission shall:

(1) provide a copy of the reports described in subsection (a) to the governor and legislative council; and

(2) make the report available to the public.

Sec. 7. This chapter expires December 31, 2012.

SECTION 3. **An emergency is declared for this act.**

BILL NUMBER: PD 3476 DATE: Oct. 28, 2010

COMMITTEE: Health Finance Commission

AUTHORS/SPONSORS: C. Brown

ATTORNEY: C. Kline PHONE #

AMT # Yes	AMT # No	AMT # Yes	AMT # No	AMT # Yes	AMT # No	Yes	No	COMMITTEE MEMBERS	AMEND Yes	DO PASS No	DO PASS Yes	DO PASS No
								REP. PEGGY WELCH	✓			
								REP. JOHN DAY				
								REP. CRAIG FRY				
								REP. CHARLES MOSELEY				
								REP. WIN MOSES				
								REP. SCOTT RESKE				
								REP. TIM BROWN				
								REP. RICHARD DODGE	✓			
								REP. DAVID FRIZZELL	✓			
								REP. DON LEHE	✓			
								REP. ERIC TURNER	✓			
								SEN. PATRICIA MILLER, V-CH	✓			
								SEN. RYAN MISHLER				
								SEN. VANETA BECKER	✓			
								SEN. EDWARD CHARBONNEAU	✓			
								SEN. BEVERLY GARD				
								SEN. JEAN LEISING	✓			
								SEN. CARLIN YODER				
								SEN. SUE ERRINGTON	✓			
								SEN. JEAN BREAUX				
								SEN. EARLINE ROGERS				
								SEN. VI SIMPSON	✓			
								REP. CHARLIE BROWN, CH	✓			

Language for DOH to adopt rules w/i 24 hrs for licensing entity

FINAL VOTE TOTAL

12	0		

Reassigned to Finance _____

Reassigned to _____

_____
CHAIRPERSON

HFC. 10-28-10, Exhibit 6

PRELIMINARY DRAFT
No. 3354

PREPARED BY
LEGISLATIVE SERVICES AGENCY
2011 GENERAL ASSEMBLY

DIGEST

Citations Affected: IC 12-7-2; IC 12-10-2.5.

Synopsis: Hoosier commission for communities for a lifetime. Creates the Hoosier commission for communities for a lifetime and requires the commission to make certain reports to the general assembly.

Effective: Upon passage.

Sec. 2. As used in this chapter, "community for a lifetime" refers to a community where residents work together in holistic and multidisciplinary ways to allow residents to:

(1) organize and become involved in the community;

(2) decide collectively on the priorities for the community; and

(3) act on the priorities to implement change in the community.

Sec. 3. (a) The Hoosier commission for communities for a lifetime is established to report to the general assembly with recommendations on the following:

(1) A process for a community to request and receive the designation of Hoosier community for a lifetime.

(2) The resources needed, from all sectors, to:

(A) initiate planning; and

(B) implement plans;

in the communities to become communities for a lifetime.

(b) The commission consists of the following members to be appointed for a term ending December 31, 2012:

(1) The executive director of the Indiana housing and community development authority created by IC 5-20-1-3, or the executive director's designee, who shall serve as the chairperson of the commission.

(2) The director of the division of aging established by IC 12-9.1-1-1, or the director's designee.

(3) Two (2) city officials, to be appointed as follows:

(A) One (1) city official to be appointed by the minority leader of the senate.

(B) One (1) city official to be appointed by the speaker of the house of representatives.

(4) Two (2) county officials, to be appointed as follows:

(A) One (1) county official to be appointed by the president pro tempore of the senate.

(B) One (1) county official to be appointed by the minority leader of the house of representatives.

(5) Four (4) representative from area agencies on the aging, to be appointed as follows:

(A) One (1) representative to be appointed by the president pro tempore of the senate.

(B) One (1) representative to be appointed by the minority leader of the senate.

(C) One (1) representative to be appointed by the speaker of the house of representatives.

(D) One (1) representative to be appointed by the minority leader of the house of representatives.

(6) Two (2) health care representatives, to be appointed as

follows:

(A) One (1) individual to be appointed by the speaker of the house of representatives.

(B) One (1) individual to be appointed by the president pro tempore of the senate.

(7) Two (2) representative from universities, to be appointed as follows:

(A) One (1) individual to be appointed by the minority leader of the senate.

(B) One (1) individual to be appointed by the minority leader of the house of representatives.

(8) One (1) member who is:

(A) a member of a minority group (as defined in IC 4-13-16.5-1(j)); and

(B) a representative of a health care provider;

to be appointed by the governor.

(9) One (1) representative of an agency involved in planning, housing, and economic development, to be appointed by the governor.

(10) One (1) representative from the business community, to be appointed by the governor.

(11) One (1) member of the senate, to be appointed by the president pro tempore of the senate.

(12) One (1) member of the senate, to be appointed by the minority leader of the senate.

(13) One (1) member of the house of representatives, to be appointed by the speaker of the house of representatives.

(14) One (1) member of the house of representatives, to be appointed by the minority leader of the house of representatives.

(15) One (1) Indiana resident who:

(A) is not more than fifty-nine (59) years of age; and

(B) has a disability;

to be appointed by the president pro tempore of the senate.

(16) One (1) Indiana resident who:

(A) is at least sixty-five (65) years of age; and

(B) represents an aging advocacy organization;

to be appointed by the speaker of the house of representatives.

(17) One (1) representative of the Indiana community foundation network, to be appointed by the governor.

(c) The commission shall be staffed by the Indiana housing and community development authority. Expenses of the commission shall be paid from appropriations made to the Indiana housing and community development authority.

Sec. 4. (a) Each member of the commission who is not a state employee is entitled to the minimum salary per diem provided by

IC 4-10-11-2.1(b). The member is also entitled to reimbursement for traveling expenses as provided under IC 4-13-1-4 and other expenses actually incurred in connection with the member's duties as provided in the state policies and procedures established by the Indiana department of administration and approved by the budget agency.

(b) Each member of the commission who is a state employee but who is not a member of the general assembly is entitled to reimbursement for traveling expenses as provided under IC 4-13-1-4 and other expenses actually incurred in connection with the member's duties as provided in the state policies and procedures established by the Indiana department of administration and approved by the budget agency.

(c) Each member of the commission who is a member of the general assembly is entitled to receive the same per diem, mileage, and travel allowances paid to legislative members of interim study committees established by the legislative council. Per diem, mileage, and travel allowances paid under this subsection shall be paid from appropriations made to the legislative council or the legislative services agency.

Sec. 5. The affirmative votes of a majority of the voting members appointed to the commission are required for the commission to take action on any measure, including preliminary and final reports.

Sec. 6. (a) When developing a plan for a community to become a Hoosier community for a lifetime, the commission shall consider the following criteria:

(1) Affordable housing.

(2) Housing that is modified and constructed to accommodate mobility issues and safety.

(3) Livability and safety, including a walkable environment and complete streets.

(4) Access to nutritious food.

(5) Access to economic and wealth building opportunities.

(6) Home care and personal assistance services that residents know how to obtain.

(7) Available retail services.

(8) Access to preventive health care.

(9) Opportunities for physical activity.

(10) Access to medical care.

(11) Access to affordable transportation.

(12) Available community services system.

(13) Mobilized caregivers to complement the formal service system.

(14) Access to quality community or senior centers, nursing homes, assisted living facilities, adult day care, and adult

foster care.

(15) Promotion of social and civic engagement.

(16) Access to meaningful relationships with children and youth in the community.

(b) The commission shall consult with the Indiana Institute on Disability and Community's Center on Aging and Community to achieve the goals of the commission.

Sec. 7. Communities for a lifetime must do the following:

(1) Involve partnerships among the state, regions, counties, municipalities, cities, and towns where citizens seek to affirmatively provide a high quality of life for all residents and extend the opportunities, support, and services that will enable citizens to grow older in a community of choice and to continue to be contributing, civically engaged residents.

(2) Incorporate widespread citizen participation methods into the local planning process.

(3) Establish an ongoing local commission to advise the community on the opportunities, services, and supports required by the citizens.

(4) Incorporate into the local plan elements addressing the impact of changes in population demographics, including age, land use, housing, public facilities, transportation, and capital improvement.

(5) Develop strategies to develop infrastructure needed for the projected population.

Sec. 8. The commission shall make a preliminary report to the general assembly not later than November 1, 2011. The commission shall make a final report to the general assembly not later than November 1, 2012. The reports to the general assembly must be in an electronic format under IC 5-14-6.

Sec. 9. This chapter expires December 31, 2012.

SECTION 4. **An emergency is declared for this act.**

BILL NUMBER: PD 3354 DATE: 10/28, 2010

COMMITTEE: Health Finance Commission

AUTHORS/SPONSORS: Sen Simpson

ATTORNEY: C Kline PHONE #

AMT # Yes	AMT # No	AMT # Yes	AMT # No	AMT # Yes	AMT # No	Yes	No	COMMITTEE MEMBERS	AMEND Yes	AMEND No	DO PASS Yes	DO PASS No
								REP. PEGGY WELCH	✓			
								REP. JOHN DAY				
								REP. CRAIG FRY				
								REP. CHARLES MOSELEY				
								REP. WIN MOSES				
								REP. SCOTT RESKE				
								REP. TIM BROWN				
								REP. RICHARD DODGE	✓			
								REP. DAVID FRIZZELL	✓			
								REP. DON LEHE	✓			
								REP. ERIC TURNER	✓			
								SEN. PATRICIA MILLER, V-CH	✓			
								SEN. RYAN MISHLER				
								SEN. VANETA BECKER	✓			
								SEN. EDWARD CHARBONNEAU	✓			
								SEN. BEVERLY GARD				
								SEN. JEAN LEISING	✓			
								SEN. CARLIN YODER				
								SEN. SUE ERRINGTON	✓			
								SEN. JEAN BREAUX				
								SEN. EARLINE ROGERS				
								SEN. VI SIMPSON	✓			
								REP. CHARLIE BROWN, CH	✓			

remove per diem lang

FINAL VOTE TOTAL

12	0		

Reassigned to Finance _____

Reassigned to _____

_____
CHAIRPERSON

HFC, 10-28-10, Exhibit 7

Prohibits smoking: (1) in public places; (2) in enclosed areas of a place of employment; (3) in certain state vehicles; and (4) within 12 feet of a public entrance to a public place or an enclosed area of a place of employment. Requires the alcohol and tobacco commission to enforce this prohibition. Makes it a Class B infraction to violate the smoking prohibition and a Class A infraction if the person has three prior unrelated judgments for violations. Prohibits firing or refusing to hire a person for reporting a violation or exercising any right or performing any obligation under the smoking prohibitions. Repeals the current clean indoor air law that prohibits smoking in public buildings.

SECTION 1. IC 7.1-5-12 IS ADDED TO THE INDIANA CODE AS A NEW CHAPTER TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]:

Chapter 12. Prohibition on Smoking

Sec. 1. As used in this chapter, "public place" means an enclosed area in which the public is invited or permitted.

Sec. 2. As used in this chapter, "smoking" means the:

(1) carrying or holding of a lighted cigarette, cigar, or pipe, or any other lighted smoking equipment; or

(2) inhalation or exhalation of smoke from lighted smoking equipment.

Sec. 3. (a) Smoking is prohibited in the following:

(1) A public place.

(2) Enclosed areas of a place of employment.

(3) A vehicle owned, leased, or operated by the state if the vehicle is being used for a governmental function.

(4) Within twelve (12) feet of a public entrance to a public place or an enclosed area of a place of employment.

(b) An employer shall inform each of the employer's employees and prospective employees of the smoking prohibition in the place of employment.

(c) An owner, an operator, a manager, or another individual with authority shall remove ashtrays or other smoking paraphernalia from areas where smoking is prohibited under this chapter. However, this subsection does not prohibit the display of ashtrays or other smoking paraphernalia that are intended only for retail sale.

Sec. 4. (a) The commission shall enforce this chapter.

(b) The department of health, local health department, and division of fire and building safety may enforce this chapter.

(c) The commission, department of health, local health department, and division of fire and building safety may inspect premises that are subject to this chapter to ensure that the person responsible for the premises is in compliance with this chapter.

Sec. 5. (a) The official in charge of a public place shall do the following:

(1) Post conspicuous signs that read "Smoking Is Prohibited By State Law" or other similar language.

(2) Request an individual who is smoking in violation of this chapter to refrain from smoking.

(3) Remove from the public place an individual who is smoking in violation of this chapter and fails to refrain from smoking after being requested to refrain from smoking.

(b) The proprietor of a restaurant shall post conspicuous signs at each entrance to the restaurant informing the public that smoking is prohibited in the restaurant.

Sec. 6. A person who smokes in an area where smoking is prohibited by this chapter commits prohibited smoking, a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) prior unrelated judgments for a violation of this chapter.

Sec. 7. An owner, manager, or operator of a public place or place of employment that fails to comply with this chapter commits a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) prior unrelated judgments for a violation under this chapter.

Sec. 8. A person, an owner, a manager, or an employer may not discharge, refuse to hire, or in any manner retaliate against an individual for reporting a violation of this chapter or exercising any right or satisfying any obligation under this chapter.

Sec. 9. This chapter does not prohibit a county, city, town, or other governmental unit from adopting an ordinance more restrictive than this chapter.

SECTION 2. IC 12-7-2-178.8 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 178.8. "Smoking", for purposes of IC 12-24-2-8, has the meaning set forth in ~~IC 16-41-37-3.~~ **IC 7.1-5-12-2.**

SECTION 3. IC 12-24-2-8 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 8. (a) Notwithstanding IC 12-27-3-3, the superintendent of a state institution has complete authority to regulate smoking (as defined in ~~IC 16-41-37-3)~~ **IC 7.1-5-12-2)** within the state institution.

(b) A physician licensed under IC 25-22.5 may prescribe nicotine as is medically necessary for a resident of a state institution.

SECTION 4. IC 16-18-2-10, AS AMENDED BY P.L.101-2007, SECTION 1, IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 10. (a) "Agency", for purposes of IC 16-23.5, has the meaning set forth in IC 16-23.5-1-2.

(b) "Agency", for purposes of IC 16-40-5, has the meaning set forth in IC 16-40-5-1.

~~(c) "Agency", for purposes of IC 16-41-37, has the meaning set forth in IC 16-41-37-1.~~

SECTION 5. IC 16-41-37-4 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 4. A person who ~~smokes~~ **engages in smoking (as defined in IC 7.1-5-12-2)**

~~(1) in a public building, except in an area designated as a smoking area under section 5 of this chapter;~~

~~(2) in the retail area of a grocery store or drug store that is designated as a nonsmoking area by the store's proprietor;~~

~~(3) in the dining area of a restaurant that is designated and posted as the restaurant's nonsmoking area by the restaurant's proprietor; or~~

~~(4)~~ in a school bus during a school week or while the school bus is being used for a purpose described in section 2.3(3) of this chapter commits a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) previous unrelated judgments for violating this section that are accrued within the twelve (12) months immediately preceding the violation.

SECTION 6. THE FOLLOWING ARE REPEALED [EFFECTIVE JULY 1, 2011]: IC 16-18-2-298; IC 16-18-2-318.1; IC 16-18-2-332; IC 16-41-37-1; IC 16-41-37-2; IC 16-41-37-3; IC 16-41-37-3.1; IC 16-41-37-5; IC 16-41-37-6; IC 16-41-37-7; IC 16-41-37-8.

PRELIMINARY DRAFT
No. 3455

PREPARED BY
LEGISLATIVE SERVICES AGENCY
2011 GENERAL ASSEMBLY

DIGEST

Citations Affected: IC 7.1-5-12; IC 12-7-2-178.8; IC 12-24-2-8; IC 16-18-2; IC 16-41-37.

Synopsis: Smoking ban in public places. Prohibits smoking: (1) in public places; (2) in enclosed areas of a place of employment; (3) in certain state vehicles; and (4) within 12 feet of a public entrance to a public place or an enclosed area of a place of employment. Allows cigar smoking in certain establishments. Requires the alcohol and tobacco commission to enforce this prohibition. Makes it a Class B infraction to violate the smoking prohibition and a Class A infraction if the person has three prior unrelated judgments for violations. Prohibits firing or refusing to hire a person for reporting a violation or exercising any right or performing any obligation under the smoking prohibitions. Repeals the current clean indoor air law that prohibits smoking in public buildings.

Effective: July 1, 2011.

A BILL FOR AN ACT to amend the Indiana Code concerning alcohol and tobacco.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 7.1-5-12 IS ADDED TO THE INDIANA CODE AS A NEW CHAPTER TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]:

Chapter 12. Prohibition on Smoking

Sec. 1. As used in this chapter, "public place" means an enclosed area in which the public is invited or permitted.

Sec. 2. As used in this chapter, "smoking" means the:

(1) carrying or holding of a lighted cigarette, cigar, or pipe, or any other lighted smoking equipment; or

(2) inhalation or exhalation of smoke from lighted smoking equipment.

Sec. 3. (a) Except as provided in section 4 of this chapter, smoking is prohibited in the following:

(1) A public place.

(2) Enclosed areas of a place of employment.

(3) A vehicle owned, leased, or operated by the state if the vehicle is being used for a governmental function.

(4) Within twelve (12) feet of a public entrance to a public place or an enclosed area of a place of employment.

(b) An employer shall inform each of the employer's employees and prospective employees of the smoking prohibition in the place of employment.

(c) An owner, an operator, a manager, or another individual with authority shall remove ashtrays or other smoking paraphernalia from areas where smoking is prohibited under this chapter. However, this subsection does not prohibit the display of ashtrays or other smoking paraphernalia that are intended only for retail sale.

Sec. 4. Except as provided in section 10 of this chapter, smoking is allowed in an establishment that, before July 1, 2011, meets the following requirements:

(1) The establishment prohibits entry by an individual who is less than twenty-one (21) years of age.

(2) The establishment holds a beer, liquor, or wine retailer's permit.

(3) The establishment limits smoking in the establishment to cigar smoking.

(4) During the preceding calendar year, at least ten percent (10%) of the establishment's annual gross income was from the sale of cigars and the rental of on-site humidors.

(5) Notwithstanding section 6(a)(1) of this chapter, the person in charge of the establishment posts conspicuous signs that read "Cigar Smoking Is Allowed In This Establishment" or other similar language.

Sec. 5. (a) The commission shall enforce this chapter.

(b) The department of health, local health department, and division of fire and building safety may enforce this chapter.

(c) The commission, department of health, local health department, and division of fire and building safety may inspect premises that are subject to this chapter to ensure that the person responsible for the premises is in compliance with this chapter.

Sec. 6. (a) The official in charge of a public place shall do the following:

(1) Post conspicuous signs that read "Smoking Is Prohibited By State Law" or other similar language.

(2) Request an individual who is smoking in violation of this chapter to refrain from smoking.

(3) Remove from the public place an individual who is smoking in violation of this chapter and fails to refrain from smoking after being requested to refrain from smoking.

(b) The proprietor of a restaurant shall post conspicuous signs at each entrance to the restaurant informing the public that smoking is prohibited in the restaurant.

Sec. 7. A person who smokes in an area where smoking is prohibited by this chapter commits prohibited smoking, a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) prior unrelated judgments for a violation of this chapter.

Sec. 8. An owner, manager, or operator of a public place or place of employment that fails to comply with this chapter commits a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) prior unrelated judgments for a violation under this chapter.

Sec. 9. A person, an owner, a manager, or an employer may not discharge, refuse to hire, or in any manner retaliate against an individual for reporting a violation of this chapter or exercising any right or satisfying any obligation under this chapter.

Sec. 10. This chapter does not prohibit a county, city, town, or other governmental unit from adopting an ordinance more restrictive than this chapter.

SECTION 2. IC 12-7-2-178.8 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 178.8. "Smoking", for purposes of IC 12-24-2-8, has the meaning set forth in ~~IC 16-41-37-3.~~ **IC 7.1-5-12-2.**

SECTION 3. IC 12-24-2-8 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 8. (a) Notwithstanding IC 12-27-3-3, the superintendent of a state institution has complete authority to regulate smoking (as defined in ~~IC 16-41-37-3)~~ **IC 7.1-5-12-2)** within the state institution.

(b) A physician licensed under IC 25-22.5 may prescribe nicotine as is medically necessary for a resident of a state institution.

SECTION 4. IC 16-18-2-10, AS AMENDED BY P.L.101-2007, SECTION 1, IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 10. (a) "Agency", for purposes of IC 16-23.5, has the meaning set forth in IC 16-23.5-1-2.

(b) "Agency", for purposes of IC 16-40-5, has the meaning set forth in IC 16-40-5-1.

~~(c) "Agency", for purposes of IC 16-41-37, has the meaning set forth in IC 16-41-37-1.~~

SECTION 5. IC 16-41-37-4 IS AMENDED TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2011]: Sec. 4. A person who ~~smokes~~ **engages in smoking (as defined in IC 7.1-5-12-2)**

~~(1) in a public building, except in an area designated as a smoking area under section 5 of this chapter,~~

~~(2) in the retail area of a grocery store or drug store that is designated as a nonsmoking area by the store's proprietor,~~

~~(3) in the dining area of a restaurant that is designated and posted as the restaurant's nonsmoking area by the restaurant's proprietor, or~~

~~(4)~~ in a school bus during a school week or while the school bus is being used for a purpose described in section 2.3(3) of this chapter commits a Class B infraction. However, the violation is a Class A infraction if the person has at least three (3) previous unrelated judgments for violating this section that are accrued within the twelve (12) months immediately preceding the violation.

SECTION 6. THE FOLLOWING ARE REPEALED [EFFECTIVE JULY 1, 2011]: IC 16-18-2-298; IC 16-18-2-318.1; IC 16-18-2-332; IC 16-41-37-1; IC 16-41-37-2; IC 16-41-37-3; IC 16-41-37-3.1; IC 16-41-37-5; IC 16-41-37-6; IC 16-41-37-7; IC 16-41-37-8.

BILL NUMBER: pdoc 20110836.004 DATE: Oct 28, 2010

COMMITTEE: Health Finance Commission

AUTHORS/SPONSORS: C. Brown

ATTORNEY: C Kline PHONE #

AMT # Yes	AMT # No	AMT # Yes	AMT # No	AMT # Yes	AMT # No	Yes	No	COMMITTEE MEMBERS	AMEND DO PASS Yes	AMEND DO PASS No	DO PASS Yes	DO PASS No
								REP. PEGGY WELCH	✓			
								REP. JOHN DAY				
								REP. CRAIG FRY				
								REP. CHARLES MOSELEY				
								REP. WIN MOSES				
								REP. SCOTT RESKE				
								REP. TIM BROWN				
								REP. RICHARD DODGE		✓		
								REP. DAVID FRIZZELL		✓		
								REP. DON LEHE	✓			
								REP. ERIC TURNER	✓			
								SEN. PATRICIA MILLER, V-CH	✓			
								SEN. RYAN MISHLER				
								SEN. VANETA BECKER	✓			
								SEN. EDWARD CHARBONNEAU	✓			
								SEN. BEVERLY GARD		✓		
								SEN. JEAN LEISING		✓		
								SEN. CARLIN YODER				
								SEN. SUE ERRINGTON	✓			
								SEN. JEAN BREAUX				
								SEN. EARLINE ROGERS				
								SEN. VI SIMPSON	✓			
								REP. CHARLIE BROWN, CH	✓			

FINAL VOTE TOTAL			
9	3		

Reassigned to Finance _____

Reassigned to _____

_____
CHAIRPERSON

HFC, 10-28-10, Exhibit 8

FINAL REPORT

Health Finance Commission

I. STATUTORY AND LEGISLATIVE COUNCIL DIRECTIVES

The Indiana General Assembly enacted legislation (IC 2-5-23) establishing the Health Finance Commission to study health finance in Indiana. The Commission may study any topic: (1) directed by the chairperson of the Commission; (2) assigned by the Legislative Council; or (3) concerning issues that include the delivery, payment, and organization of health services and rules that pertain to health care delivery, payment, and services that are under the authority of any board or agency of state government.

The Legislative Council assigned the following additional responsibilities to the Commission for the 2010 interim:

(1) Whether pharmacists should be required to inform a prescribing physician or physician's office of a change in the brand name manufacturer of a prescribed medicine to treat certain long term health conditions (HEA 1320-2010).

(2) Whether a paramedic board should be established to license paramedics instead of paramedics being certified by the Emergency Medical Services Commission (SEA 356-2010).

(3) The Indiana check-up plan and provide guidance and make recommendations regarding the plan (HB 1132).

(4) Methods to increase availability of affordable coverage for health care services for all Indiana residents (HB 1132).

(5) An education and orientation program for individuals participating in the Indiana check-up plan (HB 1132).

(6) The impact of new federal health care and health insurance laws on the Indiana check-up plan (HB 1132).

(7) LSA report on Patient Protection and Affordable Care Act (PPACA) (SCR 15).

(8) Long term care savings plans (HR 32).

(9) The prevalence of brain injury, the scope of brain injury services, and financing for those services in Indiana (SCR 32).

(10) Impact of a statewide smoking ban in Indiana (Representative C Brown).

Draft

II. SUMMARY OF WORK PROGRAM AND TESTIMONY

The Commission met three times during the 2010 interim: July 15, 2010, September 8, 2010, and October 28, 2010. For more detailed information concerning the testimony at a meeting, please see the minutes on the Commission's website:
http://www.in.gov/legislative/interim/committee/#H

July 15, 2010.
The first meeting was held on July 15, 2010. The Commission heard a presentation on the federal health care reform legislation, and an update on the Indiana Check Up Plan (Plan), and whether education and orientation on the Plan should be offered to participants. Ms. Joy Wilson and Ms. Melissa Hansen, representing the National Conference of State Legislatures (NCSL), provided the Commission with information pertaining to the federal health care reform law (Act). Ms. Lawren Mills, Office of the Governor, Ms. Pat Casanova, Office of Medicaid Policy and Planning, FSSA, and Ms. Robyn Crossen, Department of Insurance informed the Commission of the actions the executive branch has taken on implementation since the passage of the Act.

Ms. Carol Irvin, Mathematica Policy Research, Inc., provided the Commission with the results of an evaluation of the Plan that was conducted by Mathematica Policy Research through a contract with FSSA. Representatives of insurance companies that have contracted with the state to provide coverage under the Plan told the Commission about their actions to educate and provide orientation to members of the Plan.

September 8, 2010
The second meeting of the Commission was held on September 8, 2010. The Commission heard testimony concerning generic drug substitution by pharmacists, paramedic licensure, the Communities for a Lifetime initiatives and a statewide smoking prohibition. Dr. Tom Vidik, Elkhart, IN, informed the Commission that a generic form of a brand name drug does not have the identical make up of the brand name drug and even generic drugs differ from each other. Dr. Vidik stated that he often writes prescriptions that specify brand name only because of the variances within the generics. Dr. Vidik testified that he opposes generic substitution of anti-convulsant drugs used to treat epilepsy. Mr. Barry Boudreaux, representing the pharmacy benefit manager MEDCO, informed the Commission that generic drugs are safe, effective, and affordable and offer value to consumers. Mr. Boudreaux further stated that Indiana law already allows for a prescriber to specify when a specific brand is necessary and discussed MEDCO's policy for contacting a health care provider about the availability of a generic drug.

The Commission was informed that paramedics are currently certified by the Indiana Department of Homeland Security and that a bill was introduced in the 2009 session to change this structure by having the paramedics licensed by the Indiana Professional Licensing Agency. The Commission heard testimony from interested parties discussing concerns about moving the regulation of paramedics over to the Indiana Professional Licensing Agency but supporting a change from paramedic certification to paramedic licensure. The Commission also heard from individuals who were concerned with how changing from certification to licensure would affect

Draft

this industry, including concerns about reimbursement.

Dr. Philip Stafford, Center on Aging and Community, Indiana Institute on Disability and Community, Indiana University, informed the Commission about an initiative to create Communities for a Lifetime and requested the reintroduction of a bill from the 2009 session that would create a committee to develop protocols to designate areas as Communities for a Lifetime. Dr. Stafford stated that in order to plan communities that will be a good place to grow old, the current structure of buildings and communities that are continuing to be built and create separate geographic locations of groups of people needs to be changed. The Commission was informed about a project in Kendallville, Indiana to create a community for a lifetime.

Proponents of a statewide smoking prohibition provided the Commission with statistics concerning smoking. Senator Terry Link, Illinois State Senate, testified concerning Illinois' experience with the implementation of a statewide smoking prohibition and the impact on Illinois casinos. Opponents of a statewide smoking prohibition testified on the negative impact local smoking prohibition ordinances have had on bars and other businesses.

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October 28, 2010

The third meeting of the Commission was held on October 28, 2010. The Commission heard testimony on issues concerning treatment of brain injuries in Indiana, long term care savings plans, a review of the results of the disproportionate share hospital (DSH) evaluation report, an update on FSSA litigation against IBM, issues concerning the CHOICE program, and a Marian University presentation on planned medical school. The Commission also considered the Commission's final report and proposed preliminary drafts for recommendation by the Commission.

III. COMMITTEE FINDINGS AND RECOMMENDATIONS

The Commission made the following recommendations:

Preliminary Draft (PD) 3455- Statewide smoking prohibition, Rep. C. Brown.

Prohibits smoking: (1) in public places; (2) in enclosed areas of a place of employment; (3) in certain state vehicles; and (4) within 12 feet of a public entrance to a public place or an enclosed area of a place of employment. Allows cigar smoking in certain establishments. Requires the alcohol and tobacco commission to enforce this prohibition. Makes it a Class B infraction to violate the smoking prohibition and a Class A infraction if the person has three prior unrelated judgments for violations. Prohibits firing or refusing to hire a person for reporting a violation or exercising any right or performing any obligation under the smoking prohibitions. Repeals the current clean indoor air law that prohibits smoking in public buildings.

The Commission voted _ to _.

PD 3476, Indiana Brain Injury Commission, Rep. C. Brown.

Creates the Indiana Brain Injury Commission and requires certain reports to be made to

the General Assembly.

The Commission voted _ to _.

PD 3354- Hoosier Commission for Communities for a Lifetime, Senator Simpson.
Creates the Hoosier Commission for Communities for a Lifetime and requires the commission to make certain reports to the general assembly.

The Commission voted _ to _.

Final Report. The Commission voted __ to __ to adopt the Commission's final report.

Draft

WITNESS LIST

Rick Archer, Indiana Department of Homeland Security
Barry Boudreaux, MEDCO
Michael Campbell, Wellness Council of Indiana
Pat Casanova, Office of Medicaid Policy and Planning, FSSA
Robyn Crossen, Department of Insurance
Duane Etienne, President Emeritus CICOA Aging and In Home Solutions
Randy Fox, Dekalb EMS
Nathan Gabhart, Indiana Pharmacy Alliance
Melissa Hansen, NCSL
John Hart, Indiana Fire Chiefs Association
Carol Irvin, Mathematica Policy Research, Inc.
Kristen LaEace, Area Agencies on Aging
Senator Terry Link, Illinois State Senate
Don Marquardt, Indiana Licensed Beverage Association
Paul McClain, bar owner, Ft. Wayne, IN
Scott McKibbin, McKibbin Group
Gary Miller, Prompt Ambulance and Chairman of EMS Commission
Lawren Mills, Office of the Governor
Tony Murray, Professional Firefighters' Union
Kevin O'Flaherty, Campaign for Tobacco Free Kids
Danielle Patterson, Indiana Campaign for Smoke Free Air
Michael Ripley, Indiana Chamber of Commerce
Tammy Robinson, representing Anthem
Mark Scherer, Indiana Society for Respiratory Care
Dr. Philip Stafford, Center on Aging and Community, Indiana Institute on Disability and Community, Indiana University
Brian Tabor, Indiana Hospital Association
Lee Turpen, Paramedic
Dr. Tom Vidik, Elkhart, IN
Ms. Laurie Weinzapfel, MDwise,
Joy Wilson, NCSL
John Zartman, Community Health

Draft

BILL NUMBER: Final report DATE: Oct 28, 2010

COMMITTEE: Health Finance Commission

AUTHORS/SPONSORS:

ATTORNEY: PHONE #

AMT # Yes	AMT # No	AMT # Yes	AMT # No	AMT # Yes	AMT # No	Yes	No	COMMITTEE MEMBERS	AMEND DO PASS Yes	AMEND DO PASS No	DO PASS Yes	DO PASS No
								REP. PEGGY WELCH			✓	
								REP. JOHN DAY				
								REP. CRAIG FRY				
								REP. CHARLES MOSELEY				
								REP. WIN MOSES				
								REP. SCOTT RESKE				
								REP. TIM BROWN				
								REP. RICHARD DODGE			✓	
								REP. DAVID FRIZZELL			✓	
								REP. DON LEHE			✓	
								REP. ERIC TURNER			✓	
								SEN. PATRICIA MILLER, V-CH			✓	
								SEN. RYAN MISHLER				
								SEN. VANETA BECKER			✓	
								SEN. EDWARD CHARBONNEAU			✓	
								SEN. BEVERLY GARD				
								SEN. JEAN LEISING			✓	
								SEN. CARLIN YODER				
								SEN. SUE ERRINGTON			✓	
								SEN. JEAN BREAUX				
								SEN. EARLINE ROGERS			✓	
								SEN. VI SIMPSON			✓	
								REP. CHARLIE BROWN, CH			✓	

FINAL VOTE TOTAL

		12	0

Reassigned to Finance

Reassigned to

CHAIRPERSON

HFC, 10-28-10, Exhibit 9

STATE OF INDIANA
INDIANA GENERAL ASSEMBLY
THIRD FLOOR STATE HOUSE
INDIANAPOLIS, INDIANA 46204

October 28, 2010

Members of the Health Finance Commission:

In an effort to help the State of Indiana to better prepare for the changes within in the Patient Protection and Affordable Care Act (PPACA), we have enlisted the services of the following group of experts to serve as a Healthcare Implementation Advisory Committee. This is not to be mistaken with the formation of a Health Finance Advisory Committee (IC 2-5-23-6), as these services will be provided solely on a volunteer basis. These individuals will simply provide expertise in a wide range of fields which will better help the Indiana General Assembly adapt to the changing healthcare environment created by the PPACA.

HEALTHCARE IMPLEMENTATION ADVISORY COMMITTEE

Name	Organization
Paul Chase, Chair	AARP
Steve McCaffrey	Mental Health America of Indiana
Nancy Jewell	Indiana Minority Health Coalition
Phil Morphew	Indiana Primary Health Care Association
Rebecca Kasper	Indiana Association for Home and Hospice Care
Mike O'Brien	Indiana Association of Health Plans
Joanne Martin	March of Dimes, Indiana Chapter
David Roos	Covering Kids and Families of Indiana
Jim Leich	Indiana Association of Homes and Services for the Aging
Kim Dodson	The Arc of Indiana
Kristen LaEace	Indiana Association of Area Agencies on Aging
Mike Ripley	Indiana Chamber of Commerce
Daren Sink	Pharmaceutical Research and Manufacturers of America
Matt Brooks	Indiana Council of Community Mental Health Centers
Malinda Boehler	National Association of Social Workers, Indiana Chapter
Ernie Klein	Indiana State Nurses Association
Zach Cattell	Indiana Health Care Association
Mike Rinebold	Indiana State Medical Association
John Willev	Anthem Blue Cross and Blue Shield
Sarah Stelzner	Indiana Chapter of the American Academy of Pediatrics
Brian Tabor	Indiana Hospital Association
Brad Burk	American Cancer Society
Danielle Patterson	American Heart Association
Stephanie DeKemper	SynCare, LLC.
Nancy Guyott	Indiana State AFL-CIO

Sincerely,

Charlie Brown
Chair, Health Finance Commission

Patricia Miller
Vice-Chair, Health Finance Commission