Indiana EMS Workforce Study and Strategic Planning Project

Final Report

Indiana Department of Homeland Security

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Introduction

The Rural Health Innovation Collaborative (RHIC) represents a 13-member public-private partnership that exists to improve community health and wellness; foster interprofessional education and practice; and support economic vitality. The RHIC draws upon its partners' expertise to design, develop, and implement a variety of large-scale programs and projects on a local, regional, state, and national scale.

The Indiana Emergency Medical Service (EMS) system is a vital program that affects the lives of all Indiana residents and visitors. An EMS system that strives to provide high-quality, cost-effective care must have strong standards, medical control, and a functional quality assurance program. As the Indiana EMS system continues with its pursuit of excellence, attention needs to be given to its basic structure and system function. This project sought to create collaborative partnerships of all key stakeholders and work intimately with members of the Indiana Department of Homeland Security (IDHS) to engage in a vigorous strategic planning model based upon a subset of the priorities identified by the National Highway Traffic Safety Administration (NHTSA) during their summer 2015 reassessment. The list of priorities provided to the RHIC to be addressed in this endeavor can be found in Appendix A.

This Indiana Emergency Medical Services Labor Market Analysis and Reassessment report is designed to provide data relevant to the ever-changing status of today's emergency medical services in Indiana. This reassessment commenced with the RHIC and IDHS teams working collectively to develop a strategic plan to capture data from multiple stakeholders and EMS professionals to shape the future of EMS in Indiana. The team developed a multifaceted approach to collect quantitative and qualitative data to facilitate the development and implementation of a plan to stimulate change, innovation, and education in the emergency medical services division.

The RHIC and IDHS team, heretofore referred to as the Collaborative, developed a comprehensive 49 item survey based upon several key areas of inquiry. The survey, found in Appendix B, was constructed in a commercially available, internet survey platform, with the anonymous link being distributed to all EMS personnel in the state of Indiana by using contact information listed in the Indiana Public Safety Personnel Portal (Acadis).

The Collaborative also scheduled a series of six, 90-minute town-hall style meetings, to solicit input and feedback from each of the districts across the state of Indiana. The meetings were facilitated using live video teleconferencing technology and sessions were recorded. The questions utilized to facilitate the discussion can be found in Appendix C. Participants in the town hall meetings were also directed to a second survey tool to solicit additional input on the items discussed in the town hall meetings.

The subset of questions utilized to stimulate conversation during the meetings was again utilized for an additional quantitative survey to capture feedback from the most engaged EMS professionals around the state. As is the nature of town hall style meetings, not all were willing or able to express their opinions openly, hence the reasoning for the quantitative survey. Finally, an additional survey was developed and deployed to solicit responses from EMS Provider entities around the state.

The opening sections of this report are devoted to detailing a plan to address select, key priorities that were identified in the 2015 NHTSA state reassessment. The remainder of the report will describe the results of the statewide EMS assessment conducted by the RHIC at the request of the IDHS.

NHTSA Reassessment Priority Plan

Following the NHTSA reassessment of Indiana's EMS system, a targeted priority list was provided to the RHIC to aggressively target initiatives and take steps toward achieving the NHTSA recommendations within a reasonable timeframe. The priorities of this plan are outlined in the pages that follow.

Each priority will be addressed with recommendations and/or a status update as several of these priority areas have seen improvements or changes over the last several months. The list of priorities along with the proposed timeline and action items can be found in Appendix A. The NHTSA reassessment report referenced frequently in this document can be found at the following URL:

http://www.in.gov/dhs/files/NHTSA_Reassessment_Final_Report_9-2015.pdf

Priority Number *100.00*

Description: Continue to refine the labor market analysis survey. Data from the survey should be incorporated into the strategic planning efforts.

Status: The labor market analysis results have been finalized and can be found in part two of this report. Quantitative and qualitative data that may provide IDHS and the EMS Commission with guidance from EMS personnel have been integrated into this report.

Priority Number *100.01*

Description: Enact legislation to extend hospital peer-review protection to EMS QA activities.

Status: The peer review process for EMS has historically not been protected from discovery. Peer protection was identified as priority area of concern in the NHTSA report from July, 2015. This is certainly an area of risk for providers that if not proactively addressed may stifle this important quality assurance process and prevent the audit and review of cases that may benefit from discussion and root cause analysis. Toward this end, members from the RHIC met with Representative Cindy Kirchhoffer on January 15th to discuss a piece of legislation that would proactively address this issue.

Representative Kirchhoffer has authored House Bill 1264 to address emergency medical service provider audits. The bill, referred to Committee on Health and Provider Services on February 8, 2016, requires each organization that provides EMS to conduct audit and review at least quarterly. The bill also provides that audit and review proceedings are confidential and review proceedings would be deemed privileged communications.

This bill if enacted would have an effective date of July 1, 2016. We encourage IDHS, members of the commission and other interested stakeholders to continue to track this important piece of legislation and provide testimony when and where appropriate. The latest version of this bill can be found at the following URL: https://iga.in.gov/legislative/2016/bills/house/1264#document-2705b25b

Priority Number *100.02*

Description: Establish a memorandum of understanding with Indiana State Department of Health (ISDH) that utilizes the epidemiological resources of ISDH to analyze EMS data, and provide linkages with other relevant data sources.

Status: EMS providers in Indiana are required to provide data from runs to IDHS utilizing Nemsis version 2.0 with a transition to Nemsis 3.0 currently underway. According to the NHTSA assessment, 75% of all licensed EMS transporters in the state are submitting run reports on a routine basis. The NHTSA report also references the strong injury prevention and public education program currently ongoing between the Indiana Criminal Justice Institute (ICJI) Traffic Safety Division through a collaborative effort. Developing and disseminating additional reports and district specific information to EMS personnel would certainly strengthen the injury prevention network around the state and empower local EMS to take on the role of educator and community advocate.

Achieving the ultimate goal of seamless integration between the trauma registry and EMS data systems will require an enhanced level of collaboration and partnership between ISDH and IDHS. An epidemiologist with a shared appointment to ISDH and IDHS would certainly be a nice interim step to help facilitate progress in this arena. The authors of this report recommend that IDHS establish a longer-term plan to secure internal epidemiological resources to suffice this need for the betterment of the EMS system.

The labor market analysis study provides some insight from EMS providers around Indiana on this issue. The vast majority of participants who responded to the survey following the town-hall style meetings that were conducted in October were interested in seeing outcome reports generated from the run data submitted to IDHS. Of the 130 responses to this specific item, 105 (81%) requested outcome reports from run data.

Priority Number *100.03*

Description: Consider the creation of other advisory groups to ensure that specific interests and stakeholders are given adequate consideration.

Status: Implementation of this priority is addressed within 100.04, 100.05, 100.07, 100.10, and 100.11.

Priority Number *100.04*

Description: Revise the administrative rules relevant to the definitions and operation of the EMS provider to match current practice and demands.

Status: The RHIC recommends the creation of a special legislative working group to be formed by the end of summer 2016 to support this initiative. A gap analysis regarding the current rules and definitions should be completed. While changes to the Indiana Code have progressed, there are identified gaps in the Administrative Codes governing EMS. These codes have not had any major adjustments since 2010. Emergency rules went into effect July 1, 2012 and have not been placed into permanent rule at the time of this report. The EMS Commission and IDHS should seek authority to update these rules to reflect current practices and certification levels. A proactive effort to address the NHTSA recommendations should align with evidence based practice standards along with the promotion of quality outcomes for all Hoosiers.

Successful momentum has already taken place in recent legislative sessions to implement practice standards for basic life support providers to obtain finger-stick blood glucose, as well as the current session's introduction of House Bill 1200 which calls for emergency services protocols for stroke patients. This bill requires the emergency medical services commission to adopt rules concerning protocols for the identification, transport, and treatment of stroke patients by personnel providing emergency medical services. It also urges the legislative council to assign during the 2016 interim the

topic of establishing and implementing a statewide plan for the improvement of care in Indiana for stroke patients. This Bill has been referred to Public Health Committee on 1/7/16. More information regarding this Bill can be found at the following URL: https://iga.in.gov/legislative/2016/bills/house/1200

This precedence suggests that additional bills will be introduced regarding emergency medical services independent of IDHS' involvement unless proactive measures are taken.

The RHIC also recommends that the National Registry Examination be adopted for the EMT level. Feedback on this item was solicited in the survey following the town hall meetings. Of the 130 respondents to this item 72.4% stated that the exam should be adopted.

Personal communications with Dawn Horton at the National Registry on November 15, 2015 revealed that Indiana is one of two states that have not adopted this standard, maintaining their own version of the exam. Given the fact that test validity has a direct impact on the livelihood of candidates that sit for examination as well as the lives of the people that the candidates serve the importance of accuracy and fairness of each test item cannot be overstated.

Examinations need to be developed and maintained using appropriate methods to ensure exams contain content that is up to date, evidence-based, and that fairly reflects the knowledge and critical abilities required to effectively perform the tasks necessary. Properly maintaining a test requires the oversight of a psychometrician who is constantly monitoring and documenting the validity of each test item as well as the entire exam. This is a costly and time consuming effort that should be left to a larger body.

Priority Number *100.05*

Description: Consider the creation of a rural EMS task force to clearly identify issues of concern for the more rural portions of Indiana and develop long term solutions for sustainability.

Status: The RHIC recommends the creation of a special working group focused on rural EMS. The opportunity exists for IDHS to take advantage of the expansive network already developed by the RHIC and the Indiana Rural Health Association. This network has extensive representation from small rural hospitals, critical access hospitals, and rural EMS providers. This opportunity could lead to partnerships resulting in increased federal grant revenue thereby stimulating innovation and helping to resolve budget shortfalls that currently present limitation to IDHS.

Recently IDHS began working with Indiana University to research the status of emergency medical volunteers in the state. The importance of this issue was particularly evident on page 14 of the NHTSA report citing the state's heavy reliance upon "volunteer and partially compensated EMS in the rural areas which are estimated to account for 40-45% of the state's EMS provider organizations".

This high percentage of volunteerism represents a subsidy of the EMS System in the form of free or discounted labor. As in other rural states that rely upon volunteer EMS, Indiana's rural EMS system is likely not sustainable. "As this subsidy continues to dwindle, the state will have to develop alternative delivery models." This presents tremendous challenges for the state's system that will continue to impact its development and sustainability. It is critical that as urban systems continue to evolve, the entire state system continues its planning with deliberate consideration to the unique challenges of rural healthcare.

Priority Number *100.06*

Description: Ensure continued epidemiologic support for EMS registry analysis, integration, and coordination of trauma registry data analysis with ISDH.

Status: The RHIC recommends the creation of a bi-agency working group (ISDH/IDHS). This working group should be established by the end of summer 2016. ISDH and IDHS should also expand partnerships with public higher education entities around the state to identify experts who may be able to provide support in the form of data analytics and research. This innovative model may present a unique strategy to help augment the staff at IDHS while positioning ISDH, IDHS, and higher education entities for additional federal grant opportunities.

Priority Number *100.07*

Description: The IDHS and the Indiana EMS Commission should seek explicit statutory authority to conduct criminal background checks for all candidates seeking licensure as emergency medical responders (EMR), emergency medical technicians (EMT), advanced emergency medical technicians (AEMT) and paramedics.

Status: The RHIC recommends that this be enacted in the 2017 legislative session and that stakeholders and community members begin to raise awareness about this issue during 2016. This was a priority recommendation found in the NHTSA assessment and one that needs immediate attention. Given the sensitivity of this matter, EMS professionals, under the authority of their state licensure, have unsupervised, intimate, physical and emotional contact with patients at a time of maximum physical and emotional vulnerability, as well as unsupervised access to a patient's personal property. These patients may be unable to defend or protect themselves, voice objections to particular actions, or provide accurate accounts of events at a later time. EMS professionals, therefore, are placed in a position of the highest public trust. Providing a layer of protection for the public is imperative.

It is also recommended that an objective set of criteria be established to assist the EMS commission in making judgments on the individual EMS professional's fitness for duty to avoid subjective interpretation of background information. For example, the National Registry of Emergency Medical Technicians (NREMT) "may deny an applicant eligibility to sit for a certification examination, deny certification, suspend or revoke an individual's certification, or take other appropriate action with respect to the applicant's certification or recertification based on that applicant's criminal conviction."

"This policy applies to, and requires an applicant's disclosure of, all felony convictions and all other criminal convictions (whether felony or misdemeanor) relating to crimes involving physical assault, use of a dangerous weapon, sexual abuse or assault, abuse of children, the elderly or infirm and crimes against property, including robbery, burglary and felony theft. The policy does not apply to convictions for misdemeanor (other than the above-listed types of crimes), traffic violations (except DUI or reckless homicide/manslaughter), theft or unlawful possession of a controlled substance." This statement can be found at the following URL:

https://www.nremt.org/nremt/about/policy_felony.asp

While there is a layer of cost associated with requiring criminal background checks, this action mitigates legal risks of situations arising at the local level and escalating to the IDHS due to the lack of safe guards being established to protect the public.

Ensuring that EMS providers are free from major criminal and/or felonious activities upon licensure will show that IDHS has put measures in place to mitigate risk and proactively safeguard the public from a potentially dangerous, albeit small, proportion of EMS professionals. This is another area where the labor market analysis provides some insight from EMS providers around Indiana.

The vast majority of participants who responded to the survey following the town hall style meetings that transpired in October were supportive of background checks. Of the 130 responses to this specific item, 111 (85%) favored fingerprint background checks for licensure. Of note, a list of 50 licenses that require a criminal background check reveals that every other healthcare provider in the state of Indiana is required to have a criminal background check. The list includes registered nurses, optometrists, real estate appraisers, security guards, and veterinarians. The entire list can be found at the following URL:

http://www.in.gov/pla/files/CRIMINAL_BACKGROUND_CHECK_REQUIRED-Webpage_doc%283%29.pdf

Priority Number *100.08*

Description: Establish a fee structure for provider and personnel licensing that meet the intent of the Indiana General Assembly.

Status: Under ICSS 16-31-1 the EMS Commission has clear statutory authority to establish a fee structure for the provision of licenses. The Commission has not acted on this authority and as a result, the Indiana EMS system and EMS branch are not being funded as intended by the Indiana General Assembly.

This particular priority is one where feedback was sought from EMS personnel around the state. The statement, I would be willing to pay a nominal fee for my re-certification for EMS system development, training, and support, was addressed by 3,163 individuals. Respondents had mixed reviews on this item, 53% disagreeing or strongly disagreeing, 23% remaining neutral, and 24% agreeing or strongly agreeing. Considering the subset of volunteers that responded to this question (N=744), 54% disagreed or strongly disagreed with the statement, 26% remained neutral, 21% agreeing or strongly agreeing with fees.

The RHIC recommends the EMS Commission enact a fee structure for the provision of licenses and certifications. These funds can be redistributed back to the local level to foster training, education, and equipment needs on an ongoing basis, as well as offset the costs related to human resource needs to accurately monitor licensure and certification compliance at the IDHS.

Priority Number *100.09*

Description: Work jointly with the ISDH to develop a comprehensive plan for managing emerging infectious diseases. The planning process should include hospitals, EMS agencies, and other responders, and address identification, treatment, and transportation of individuals with serious infectious diseases.

Status: The RHIC recommends the creation of a bi-agency working group (ISDH/IDHS). This working group should be established by the end of summer 2016.

Priority Number *100.10*

Description: Evaluate air medical utilization on patient outcomes.

Status: Establish air medical special working group by the end of summer 2016. The group should work in collaboration with the Indiana Association of Air Medical Services. At a minimum, IDHS needs to

collaborate with community stakeholders and rural health partners to address the creation of a standard for activation and regulation for air medical services. The air medical working group should also conduct a systematic review of the evidence surrounding the proper use of air medical transport and evaluate Indiana's air medical health outcomes.

Priority Number *100.11*

Description: The IDHS, ISDH, and Indiana Emergency Medical Services for Children (IEMSC) should clarify the legal aspects related to Community Paramedicine/Mobile Integrated Healthcare and seek to establish legislation and/or promulgate rules and regulations as necessary.

Status: The special working group will be established and convene prior to the end of summer 2016. It is anticipated that legislation will move forward in the 2017 legislative session. The labor market analysis solicited feedback on this item in the town hall meetings. There is overwhelming support for community paramedicine and a significant level of activity in the state. Of the 130 participants who responded to the question about whether there should be legislation to advance community paramedicine in Indiana, 97 (75%) of respondents were in favor of this approach.

The RHIC has been very active on the community paramedicine front, meeting with Joe Moser the director of Family Social Service Administration (FSSA), Governor Mike Pence's staff, and Representative Kirchhoffer to make them aware of community paramedicine activity in the state of Indiana. There have also been preliminary discussions with Ivy Tech Community College leadership to ascertain their interest in developing a certificate course for community paramedicine.

Priority Number *100.12*

Description: Assess fees for inspections and authorization processes to provide funding for EMS system technical assistance, regional system planning and compliance.

Status: To be handled internally within the Governor's office.

Priority Number *100.13*

Description: Enforce the existing statewide communication interoperability plan to ensure seamless field communications.

Status: Communications between hospital and EMS providers takes place on a variety of platforms including VHF, UHF, 800MHz and cellular devices. All ambulances are required by rule to be equipped with VHF communications equipment however there are instances where this requirement can be waived. This item was specifically addressed in the town hall forum and in the subsequent survey, where 128 respondents provided input. The majority of responses (73%) indicated that the current statewide communication plan was not being enforced.

This failure to enforce the communications plan results in fragmentation of the system coupled with the inability for ambulances operating outside their immediate service area to communicate effectively. Communication interoperability issues have great potential to result in dire consequences for patient outcomes and contribute to a lack of coordination of multi-agency response to mass casualty events.

The RHIC recommends that IDHS staff review and engage recommendations for this priority. The absence of a proactive system to monitor compliance on this front places the individuals in need of out-of-hospital medical services in harm's way and poses a risk to public safety.

Priority Number *100.14*

Description: Provide training and education for EMS educators to ensure that they understand and are able to utilize National Education Standards (NES).

Status: Internal IDHS staff will review and engage recommendations. The RHIC recommends the development of alternative solutions such as virtual classrooms to disseminate education and training opportunities. State of the art, high-fidelity human patient simulators should also be used to teach, maintain, and assess technical and cognitive competency. This should be considered a best practice to enhance skill performance, validate competency, and to address the issue of cognitive skill decay and its impact on patient safety. Furthermore, the authors recommend that IDHS should review the effectiveness of its primary instructor program to ensure educators understand how to implement the NES in EMS courses.

Priority Number *100.15*

Description: Develop a formal medical director education and orientation program that is required for all medical directors.

Status: While physicians are well trained to handle the medical aspects associated with engaging in the uniquely challenging role of EMS medical director, dealing with the nuances involved with the direction of EMS requires specialized training, skills and abilities. Congruent with these facts, the American Board of Medical Specialties has recognized EMS as a formal physician subspecialty. The vast majority of EMS medical directors likely engage in this activity due to an innate desire to help patients and communities in need however, this coupled with their specialized medical training alone are insufficient to adequately prepare them for the multifaceted role of EMS medical director. This also leads to an inconsistent approach regarding the oversight of providers across organizations.

Item number 37 in the EMS study, My EMS director provides sufficient oversight, addressed one aspect of medical direction. Only 10% of the 3,174 respondents felt that oversight was insufficient, while 23% were neutral, 67% agreed or strongly agreed that oversight was sufficient. Item 38, My EMS director is actively involved, also addresses medical direction. Only 14% disagreed with this statement, while 23% were neutral, and 63% agree or strongly agreed.

The RHIC recommends that a formalized EMS Director training be developed and coordinated by Dr. Olinger and internal IDHS staff. This training could be loosely based upon guidelines provided by the Federal Emergency Management Association (FEMA) in March 2012 in the Handbook for EMS Medical Directors. This resource can be found at the following URL:
https://www.usfa.fema.gov/downloads/pdf/publications/handbook_for_ems_medical_directors.pdf

An EMS Medical Director course would serve as a vital tool to help open up lines of communication between various agencies and districts around the state, providing important training to physicians who lead our EMS system. Districts often have multiple medical directors with some only serving as directors for BLS non-transport units and volunteer services. This sporadic involvement leaves a void of potentially fragmented service provision that is not in alignment with current practice standards or expectations. A

course combined with subsequent annual or biannual meetings would help manage the risk that isolation poses to the system. The course could also serve as a source of revenue, drawing participants from the region and perhaps nationally.

Priority Number *100.16*

Description: Further develop and support regionalized system development within the individual districts.

Status: The RHIC recommends that outreach forums continue to be developed for providers, medical directors, and instructors by IDHS. Areas such as District 1 and District 10 should be utilized as "model" systems for other districts to emulate.

Priority Number *100.17*

Description: Establish requirements for EMS instructors that are standardized with additional specifications detailing criteria for other EMS educational roles, such as adjunct faculty, lab aides and clinical preceptors.

Status: The RHIC recommends that IDHS review EMS education standards using documents such as the Commission on Accreditation of Allied Health Education Programs (CAAHEP) guidelines. These guidelines should be utilized as a template for all EMS course levels. This resource can be found at the following URL: http://coaemsp.org/Documents/EMSP-April-2015-FINAL.pdf

It is further recommended that IDHS analyze the gaps in the education system, particularly in the rural areas and develop alternative solutions such as virtual classrooms, to fill those gaps. Congruent with our recommendations in 100.14, state of the art, high-fidelity human patient simulators should also be used to teach, maintain, and assess technical and cognitive competency. This should be considered a best practice to enhance skill performance, validate competency, and to address the issue of cognitive skill decay and its impact on patient safety.

Responses to the post town hall style meeting survey indicate broad support for establishing requirements for EMS instructors to instruct all course levels. Of the 130 responses on this item, 69% were supportive of this action.

Priority Number *100.18*

Description: Evaluate and revamp the Emergency Medical Dispatch (EMD) program standards including dispatcher certification and medical direction oversight

Status: Work collaboratively with the academy to determine potential implementation. As noted by the NHTSA (2015) reassessment, Indiana has made great strides to improve the access to EMS care to the public through the E911 system since its initial state assessment in 1989. However, no statewide training and certification standards exist for dispatchers. State law (IC 16-31- 3.5-3) requires public safety answering points (PSAPs) that provide EMD to use dispatchers that have received training that meets or exceeds the standards established by NHTSA.

The lack of promulgated rules prohibits analysis of data and enforcement of the EMD requirements. It is estimated by IDHS staff that in excess of 95% of the PSAPs voluntarily comply with IC 16-31-3.5. The extent of medical director involvement with EMD systems in Indiana varies and is not guaranteed.

Indiana Labor & Market Analysis

Indiana Emergency Medical Services is home to just over 24,000 responders and 800 EMS service providers ranging from BLS Non-Transport to Paramedic Ambulance services. This report was designed to provide information about the current status of the job market and training for emergency medical responders (EMR), emergency medical technicians (EMT), advanced emergency medical technicians (AEMT) and paramedics.

From June 15, 2015 to November 15, 2015 EMS service providers and individuals were surveyed to develop a strategic plan for Indiana EMS. This report is an analysis of the responses from 3611 individuals and 94 service providers. No identifying information was collected from the survey respondents. All survey information for the individuals was compiled in an anonymous format. Multiple email "blasts" were utilized to drive up the response rate with the final response rate totaling approximately 15% of Indiana EMS professionals. The individual survey gathered information which can be used to better identify the population of emergency medical service responders around the state.

The average age of an EMS responder recorded was 41.9 with the lowest age at 18 and the highest being 100. Table 1.1 displays the distribution of age by license type. More than 73% of Indiana EMS professionals are male with nearly 27% being female. Additional information can be found in figure 1.2. A small percentage of respondents chose not to answer this question with a small subset selecting transgendered as a response. Recent data from the 2011 National EMS Assessment indicate that the national EMS gender composite is similar to Indiana with a split of 67% male to 33% female. The mean number of years that EMS personal (N=3570) have been certified in the Indiana EMS systems was 13.5 years with a standard deviation of 10.2, minimum value of 2 months, and maximum value of 60 years.

Table 1.1 Distribution of age by licensure type

	Mean	Standard Deviation	Minimum	Maximum
EMR	44.29	13.289	18	100
EMT-B	40.55	12.862	18	80
EMT-A	43.38	12.779	19	80
Paramedic	42.66	10.959	21	73

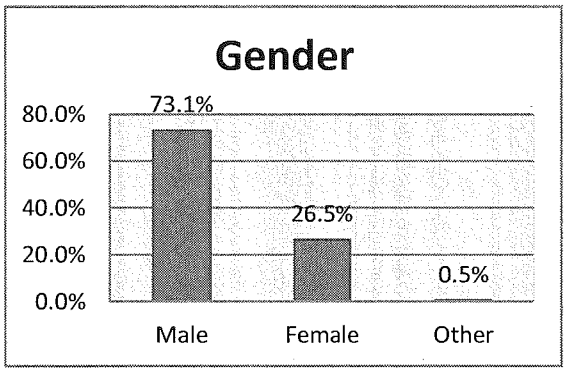
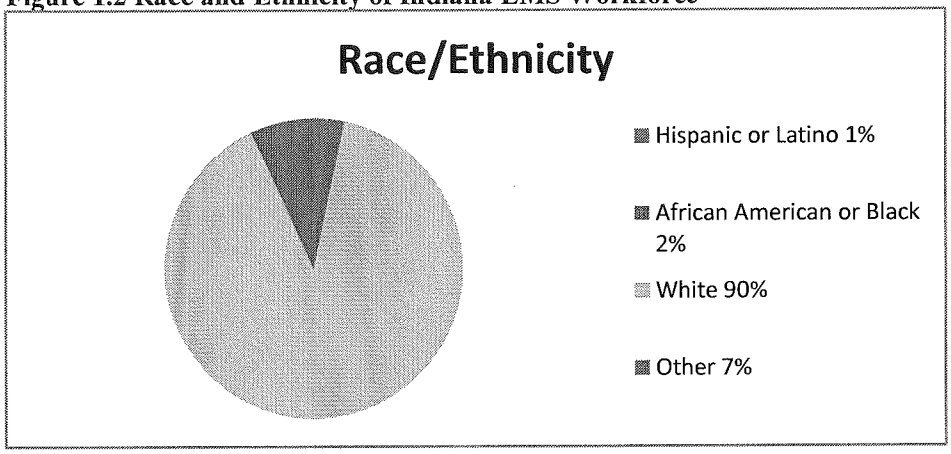


Figure 1.1 Gender composition of Indiana EMS workforce.

Indiana's EMS population does not represent a largely diverse population in gender or race/ethnicity. With 90% of self-identified entries noted as white there is wide variance between the demographic compositions of the Indiana populous when compared to the EMS professionals that serve said populous.

Nationally, 75% of the EMS workforce are White/Caucasian, 8% Black/African American, 5% Asian, and 4% American Indian or Alaska Native. Race and ethnicity specifics can be found in table 1.2.

Figure 1.2 Race and Ethnicity of Indiana EMS Workforce

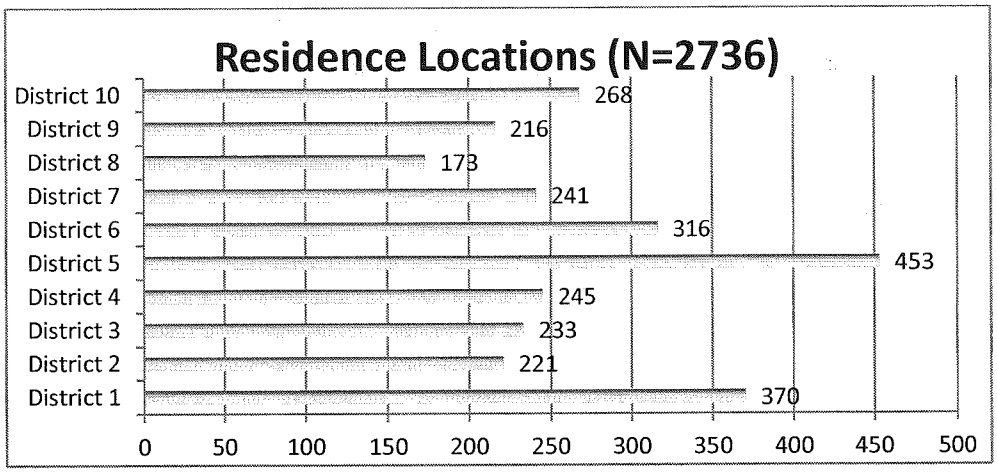


The geographical distribution of respondents' district of residence appears to mirror the distribution of EMS professionals around the state. Detailed information regarding respondents by district can be found in Figure 1.3. This information was generated from a question soliciting input about each EMS providers' district of residence.

Marion County, located in District 5, contains the Indiana State Capital, Indianapolis. It is a densely populated urban area and therefore contains a larger emergency responder community. This is followed up by District 1 which is an overflow out of the Chicago area in Lake County. Multiple respondents failed to indicate the district in which they resided.

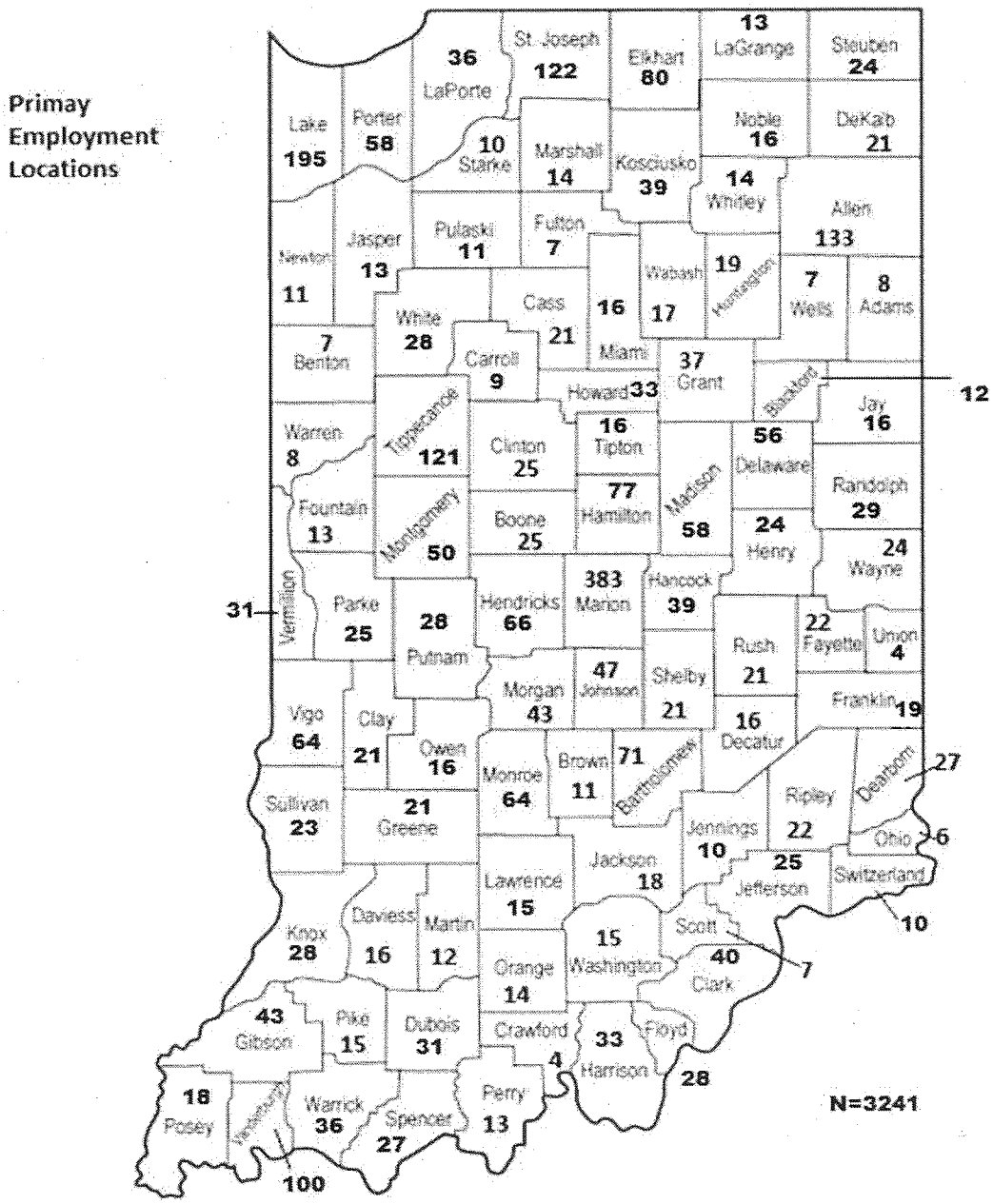
The Collaborative also looked at data reported by respondents on where their primary place of employment was. The data very closely resembles reported locations by residence. County of primary employment can be found in Figure 1.4.

Figure 1.3 District of residence by EMS Workforce Study respondents.



The survey responders were also asked to select the type of provider that they are currently primarily affiliated with as a certified individual. The largest concentration of EMS respondents (N=3391) are volunteer (24%), followed by public/fire-based, private/for-profit, and public/municipal with 17%, 16%, and 11% respectively. Figure 1.5 displays the primary employment type information.

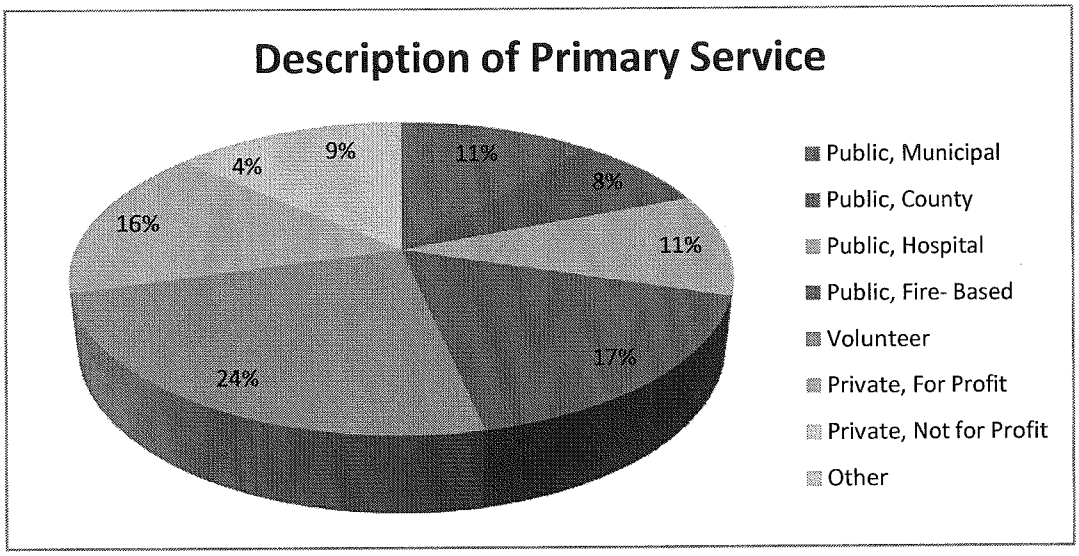
Figure 1.4 County of primary employment by EMS workforce study respondents



There has often been discussion that many responders hold multiple positions in addition to their primary means of employment. In addition to asking about primary occupation the survey asked respondents to state if they held secondary and tertiary employments. Of the 3370 individuals responding to this item,

1005 stated that they held a secondary response and 148 stated they held a tertiary position. Table 1.2 lists the number of hours respondents work in in their primary position by licensure type.

Figure 1.5 Primary employment by service type



Paramedics were also asked if they are employed in a hospital setting with 181 of 965 (19%) responding positively. None identified reported that they worked in a cath. lab and most worked in the emergency department. Approximately 25% of these medics reported that they were also registered nurses. Medics employed in a hospital setting performed a variety of tasks. The following list highlights the most common responses: IV insertion, performing EKGs, IO placement, intubation, administration of IV, PO, and IM medications, urinary catheter placement, local anesthesia, wound closure, and NG tube placement.

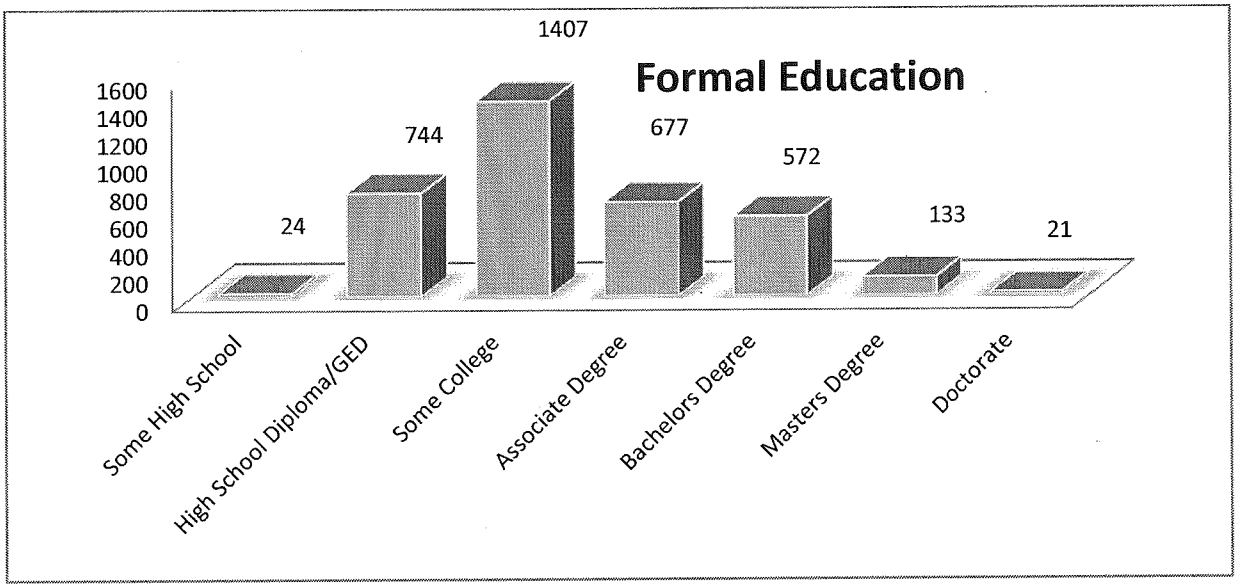
Table 1.2 Number of hours worked in primary position by licensure.

	EMR	EMT	AEMT	Paramedic
Mean (Avg.)	25.26	35.43	42.22	47.12
Median	18	40	45	48
St. Div.	24.89	23.63	20.92	17.52
Min	0	0	0	0
Max	168	168	127	144

Indiana allows for an individual to become certified in the Emergency Medical Responder roles as early as 14 years of age. Due to this age level some responders may have less than a high school diploma. Figure 1.6 depicts the current educational level of responders (N=3578) surveyed. Each responder was asked to identify their highest level of education. The largest concentration of EMS personnel (39%) stated that they had some college preparation.

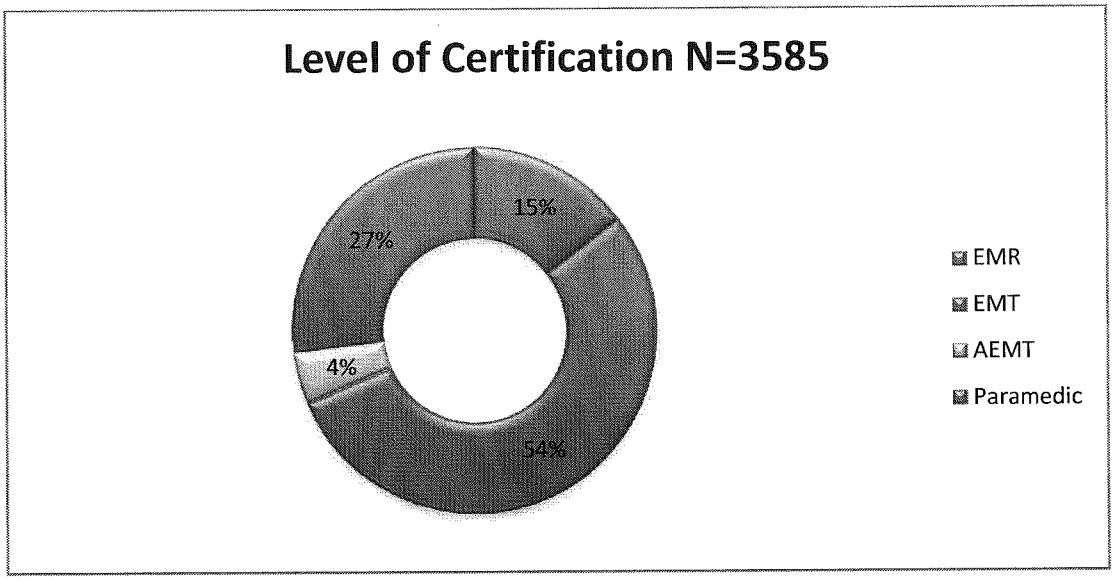
Of particular interest to IDHS, was the number of paramedics who had either a bachelor of science, a master's degree, or were physicians. The Collaborative found that 62 (6%) of paramedic respondents met this threshold and would therefore meet the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP) criteria for primary instructor.

Figure 1.6 Formal Education of respondents



Responders were also asked to identify their current, highest level of certification or licensure and the number of years that they had been certified in EMS. Certification levels represented are displayed in figure 1.7.

Figure 1.7 Level of certification



Respondents were also asked to answer which training certificates that they currently held. Listed below in table 1.3 are various trainings and certifications held for each licensure and for all who responded to this item.

Table 1.3 Training and Certifications by licensure type.

	EMR		EMT Basic		EMT Advance		Paramedic		Overall	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
EMR	494	94.10%	93	4.81%	7	4.32%	10	1.04%	604	16.85%
EMT	8	1.52%	1898	98.19%	78	48.15%	391	40.52%	2375	66.25%
AEMT	2	0.38%	20	1.03%	145	89.51%	40	4.15%	207	5.77%
Paramedic	0	0.00%	6	0.31%	0	0.00%	943	97.72%	949	26.47%
PHTLS	8	1.52%	160	8.28%	50	30.86%	635	65.80%	853	23.79%
AMLS	0	0.00%	27	1.40%	8	4.94%	305	31.61%	340	9.48%
BCON	0	0.00%	3	0.16%	1	0.62%	7	0.73%	11	0.31%
LEFR	1	0.19%	7	0.36%	1	0.62%	7	0.73%	16	0.45%
TCCC	3	0.57%	33	1.71%	5	3.09%	59	6.11%	100	2.79%
PEPP	0	0.00%	81	4.19%	29	17.90%	345	35.75%	455	12.69%
PALS	3	0.57%	114	5.90%	35	21.60%	791	81.97%	943	26.30%
NRP	0	0.00%	15	0.78%	2	1.23%	198	20.52%	215	6.00%
ITLS	0	0.00%	23	1.19%	7	4.32%	165	17.10%	195	5.44%
BTLS	9	1.71%	110	5.69%	28	17.28%	136	14.09%	283	7.89%
CCEMTP	0	0.00%	2	0.10%	0	0.00%	80	8.29%	82	2.29%
ACLS	2	0.38%	108	5.59%	41	25.31%	910	94.30%	1061	29.60%
Fight Paramedic	0	0.00%	1	0.05%	0	0.00%	56	5.80%	57	1.59%
Primary Instructor	3	0.57%	56	2.90%	17	10.49%	163	16.89%	239	6.67%
Fire Fighter 1	272	51.81%	990	51.22%	85	52.47%	502	52.02%	1849	51.58%
Fire Fighter 2	247	47.05%	975	50.44%	87	53.70%	501	51.92%	1810	50.49%
Fire Investigator	24	4.57%	187	9.67%	16	9.88%	90	9.33%	317	8.84%
Fire Officer	60	11.43%	362	18.73%	42	25.93%	210	21.76%	674	18.80%
Instructor 1	59	11.24%	353	18.26%	43	26.54%	193	20.00%	648	18.08%
Instructor 2/3	28	5.33%	177	9.16%	23	14.20%	101	10.47%	329	9.18%
HAZMAT Awareness	279	53.14%	1050	54.32%	104	64.20%	548	56.79%	1981	55.26%
HAZMAT Operations	213	40.57%	791	40.92%	93	57.41%	441	45.70%	1538	42.90%
HAZMAT Technician	47	8.95%	291	15.05%	32	19.75%	184	19.07%	554	15.45%
Technical Resource	96	18.29%	426	22.04%	46	28.40%	196	20.31%	764	21.31%
Safety Officer	52	9.90%	235	12.16%	20	12.35%	135	13.99%	442	12.33%
Law Enforcement Officer	21	4.00%	135	6.98%	11	6.79%	37	3.83%	204	5.69%
Registered Nurse	3	0.57%	43	2.22%	3	1.85%	43	4.46%	92	2.57%
Community Paramedic	0	0.00%	2	0.10%	0	0.00%	16	1.66%	18	0.50%
EVOC	65	12.38%	550	28.45%	67	41.36%	437	45.28%	1119	31.21%

The National Registry is used as the certifying exam for two levels in Indiana: AEMT and Paramedic. In order to receive initial advanced life support (ALS) certification in Indiana a responder must pass and obtain national registration as a method of reciprocity. Once a responder obtains ALS certification they are not required to maintain this to continue to renew their certification or licensure.

The levels of EMR and EMT are verified through an approved state exam administered through IDHS. A responder may choose to take the EMR and EMT exam through the National Registry as an additional certification or with reciprocity. Only 991 of (N=3348) those surveyed reported they were currently maintaining a National Registry certification. Table 1.4 displays the number of respondents nationally registered by licensure.

Table 1.4 National registry by licensure type

Nationally Registered	Yes	No
EMR	111 (23.5%)	360
EMT-B	207 (11.6%)	1,579
EMT-A	112 (73.2%)	41
Paramedic	556 (60.8%)	2339

Continuing education is encouraged through the provider and supervising hospitals of all certified personnel. Responders can obtain continuing education through a variety of delivery mechanisms. Each person surveyed was asked to rank there method of obtaining continuing education. 2744 people selected their preferred method for obtaining continuing education hours for recertification. The most popular method for obtaining required continuing education by rank are as follows: department in-service, fish fry, online courses, refresher courses, attendance at EMS courses, conferences, and district sponsored conferences. Table 1.5 show responses by licensure type. A lower score indicates the training is more desirable or more frequently utilized.

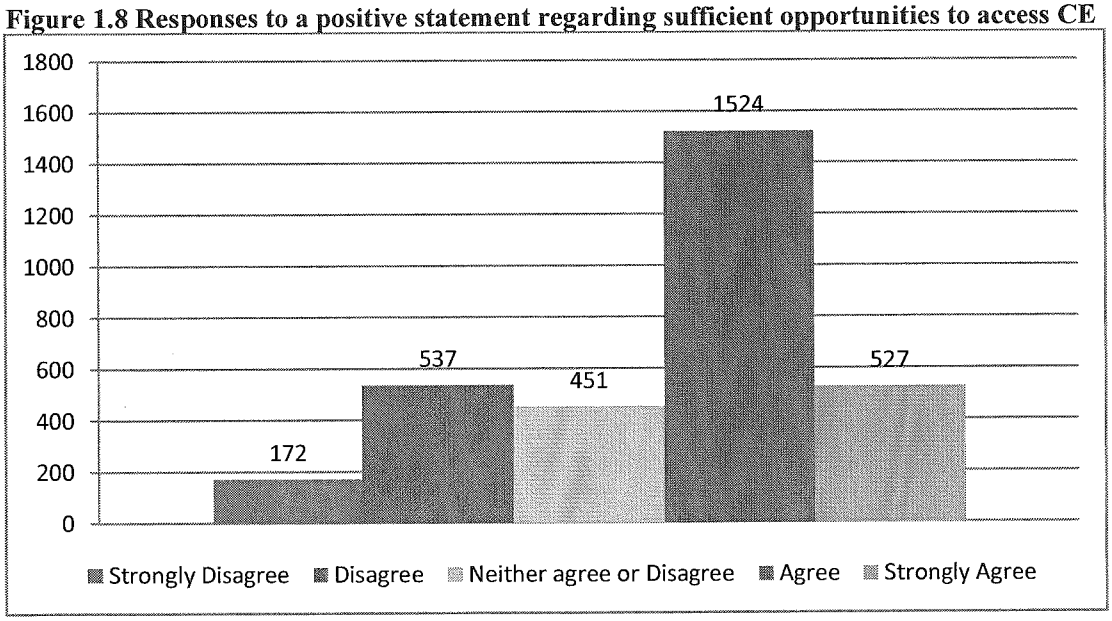
Table 1.5 Preferred continuing education methods by licensure type

	Overall Mean	**EMR-Specific Mean**	**EMT B Specific Mean**	**AEMT Specific Mean**	**Paramedic Specific Mean**
Online Course	2.54	2.46	2.43	2.62	2.75
Refresher Course	3.26	2.59	3.31	3.28	3.49
Department In-Service	1.95	1.99	2.02	1.77	1.82
Attend Current Course	3.84	4.30	3.68	3.50	3.95
Conference	4.61	4.91	4.71	4.83	4.25
District Sponsored Conference	5.16	5.24	5.11	5.39	5.18
Other	6.65	6.52	6.73	6.61	6.56

A Likert scale was used to determine some of the additional items for the survey. For each of these items participants were given a statement and asked to rate it with the following levels: Strongly Disagree, Disagree, Neither Agree or Disagree, Agree and Strongly Agree.

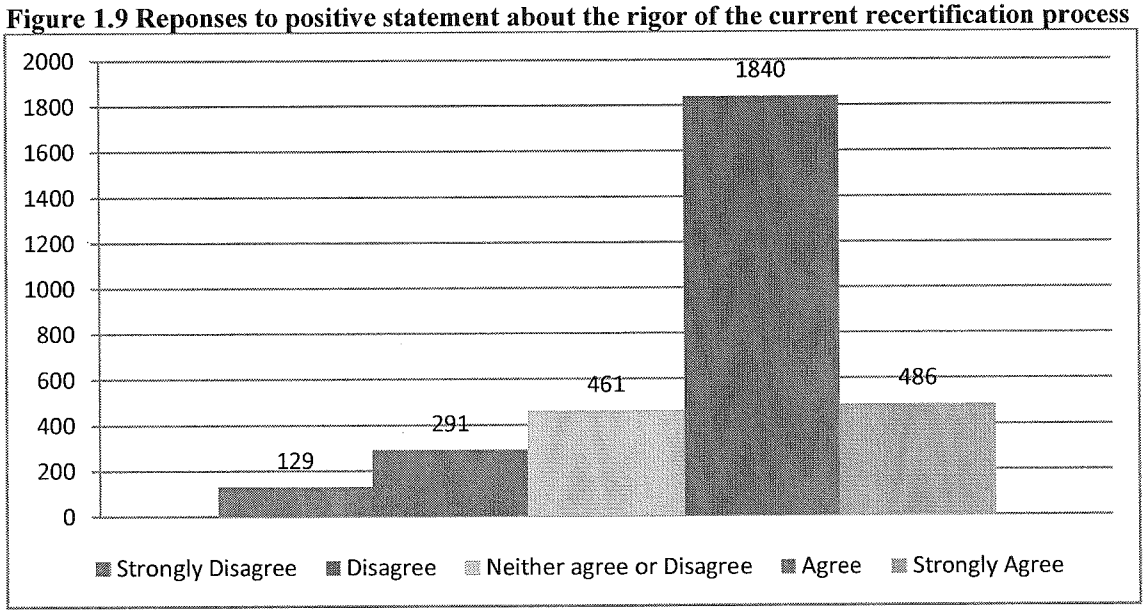
The statement, there are sufficient opportunities for me to access continuing education (CE) and training, was asked to participants. Their responses are shown in figure 1.8.

Figure 1.8 Responses to a positive statement regarding sufficient opportunities to access CE



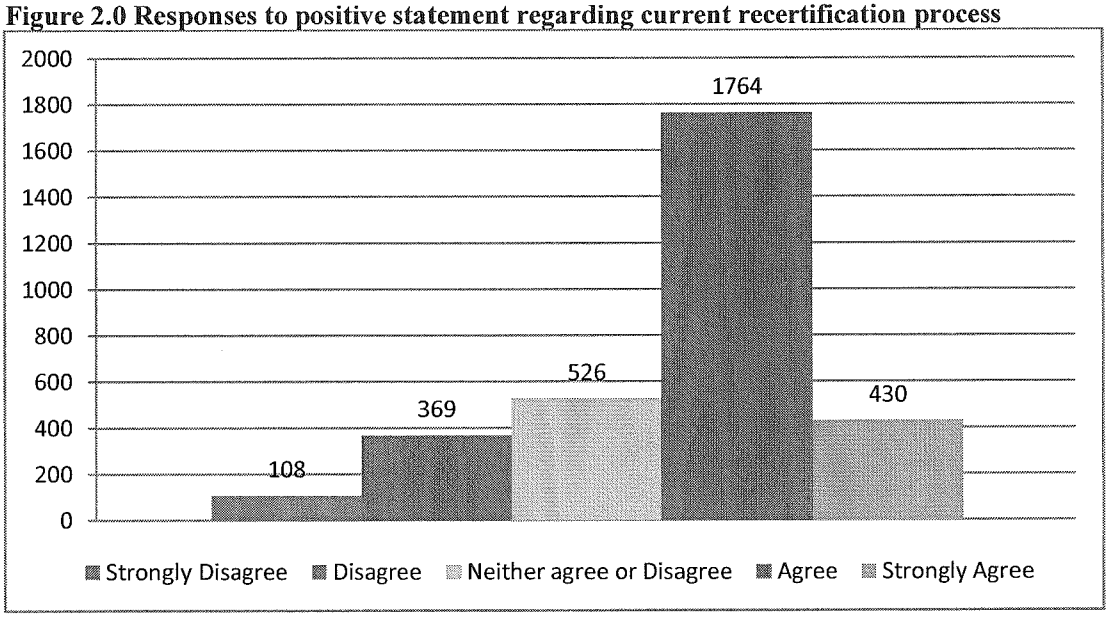
The statement, the current requirements for re-certification ensure that providers are well trained to meet ongoing needs of the patients we serve, was asked to participants. Their responses are shown in figure 1.9.

Figure 1.9 Reponses to positive statement about the rigor of the current recertification process



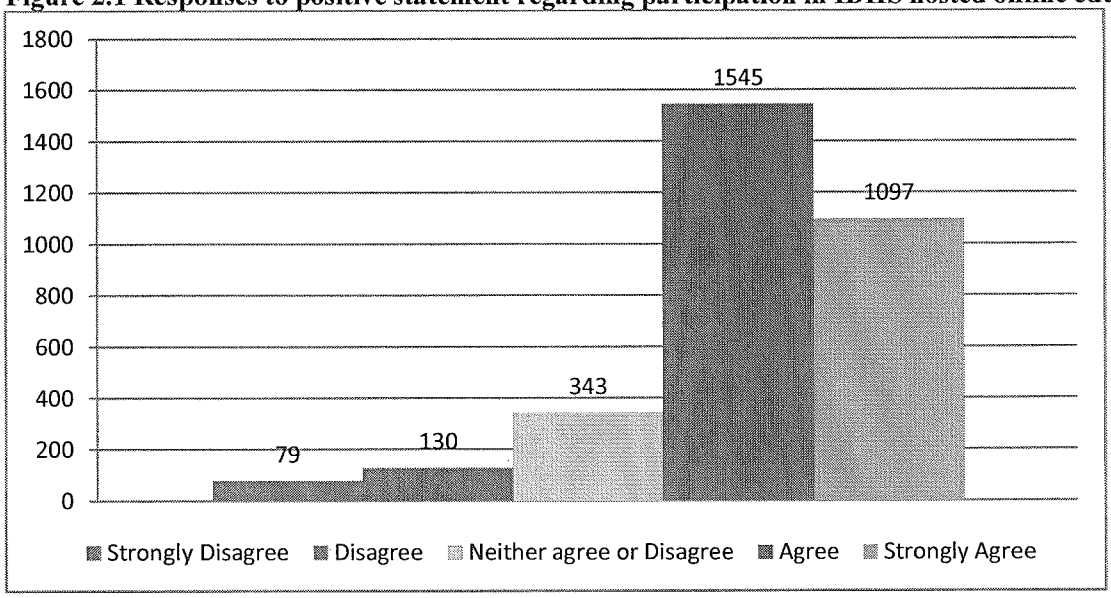
The statement, the current process for recertification ensures that providers are well trained to meet the ongoing needs of the public, was asked to participants. Their responses are shown in figure 2.0

Figure 2.0 Responses to positive statement regarding current recertification process



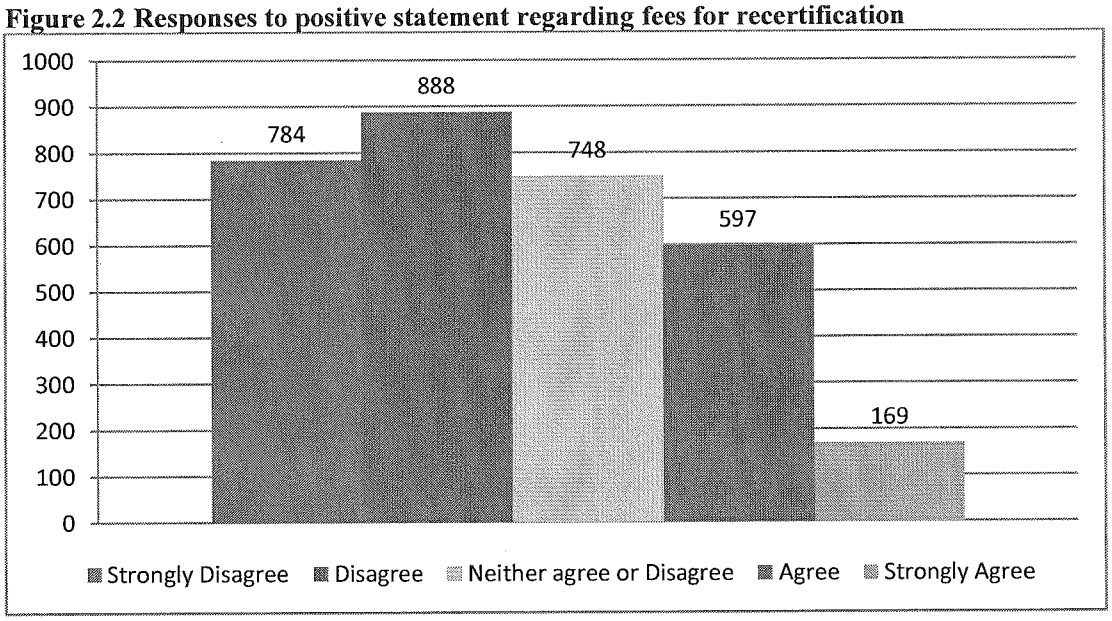
The statement, I would be interested in participating in educational opportunities provided through an online platform hosted by IDHS, was asked to participants. Their responses are shown in figure 2.1

Figure 2.1 Responses to positive statement regarding participation in IDHS hosted online education



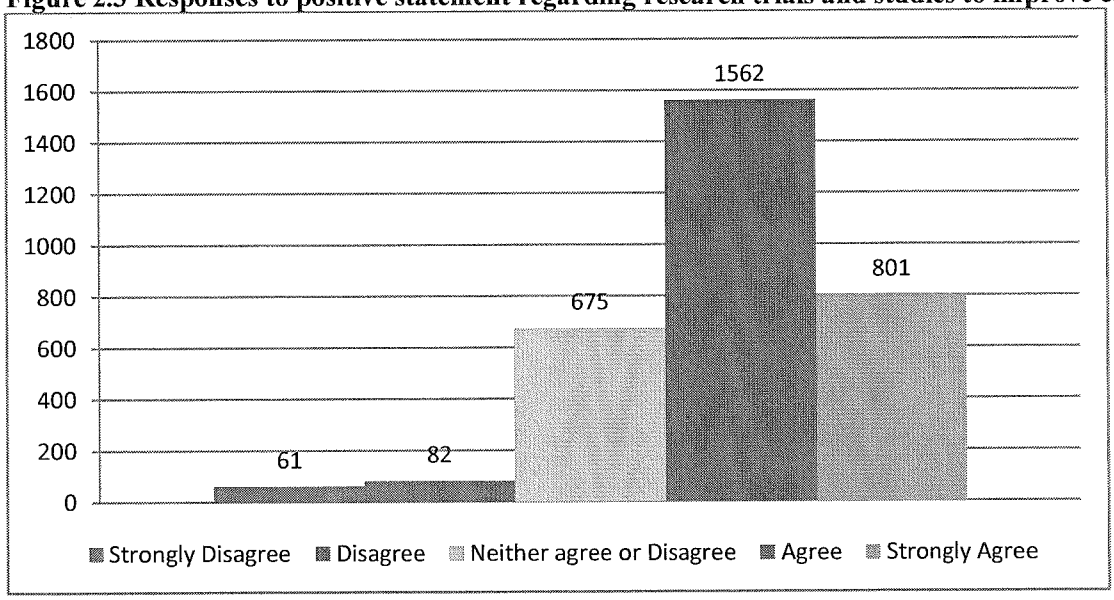
The statement, I would be willing to pay a nominal fee for my recertification for EMS system development, training, and district support, was asked to participants. Their responses are shown in figure 2.2

Figure 2.2 Responses to positive statement regarding fees for recertification



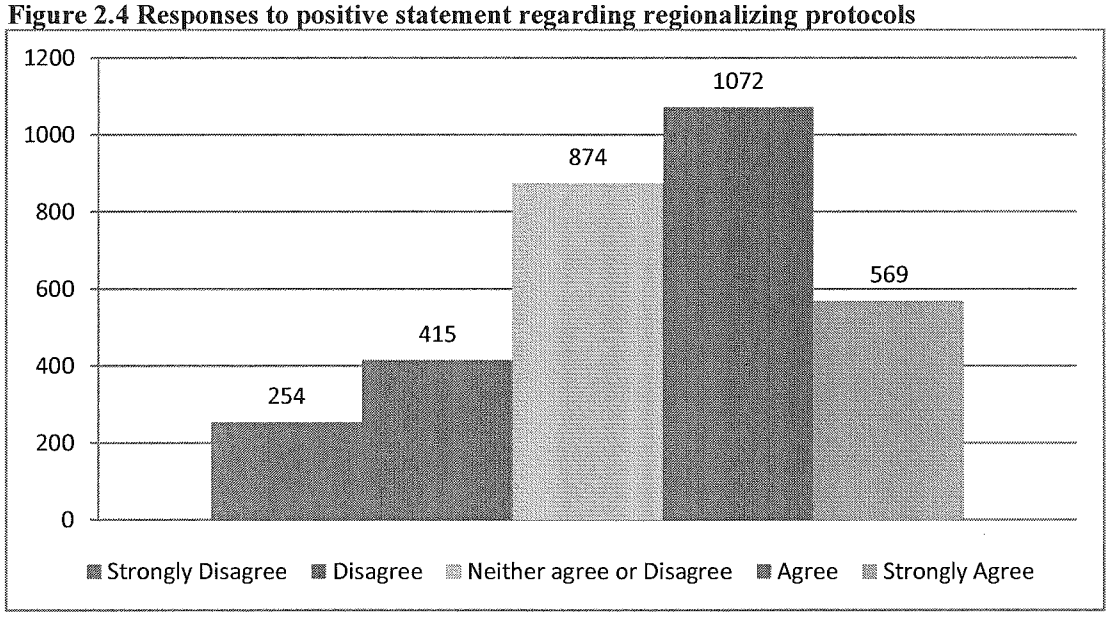
The statement, I would like to see the Indiana EMS system involved in trials/studies to help improve patient care, was asked to participants. Their responses are shown in figure 2.3

Figure 2.3 Responses to positive statement regarding research trials and studies to improve care



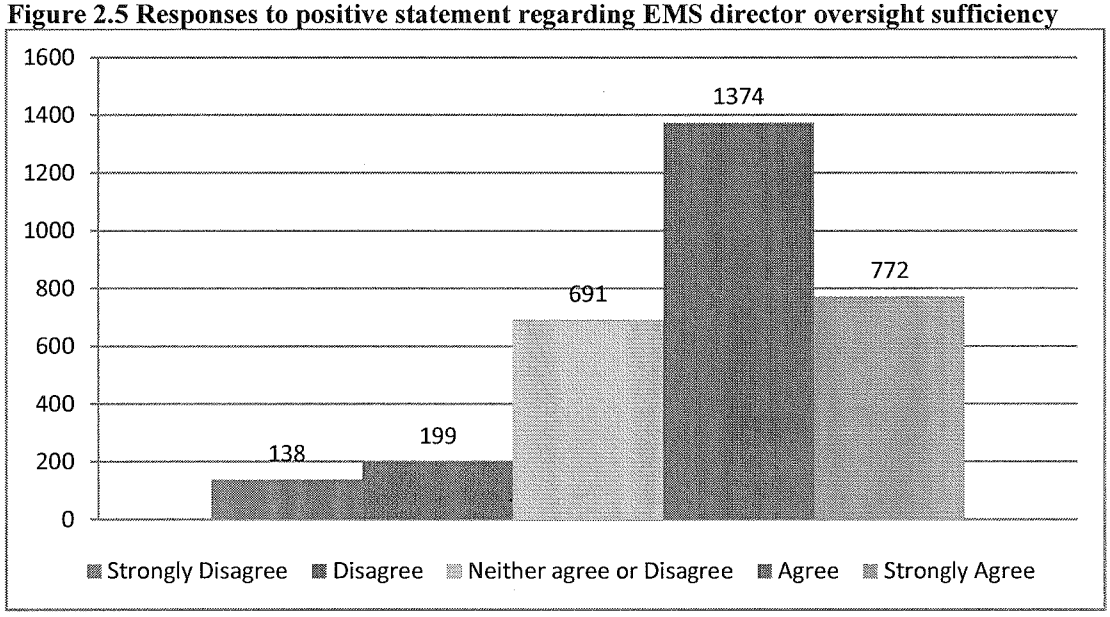
The statement, I would like to see the Indiana EMS system regionalize protocols, was asked to participants. Their responses are shown in figure 2.4

Figure 2.4 Responses to positive statement regarding regionalizing protocols



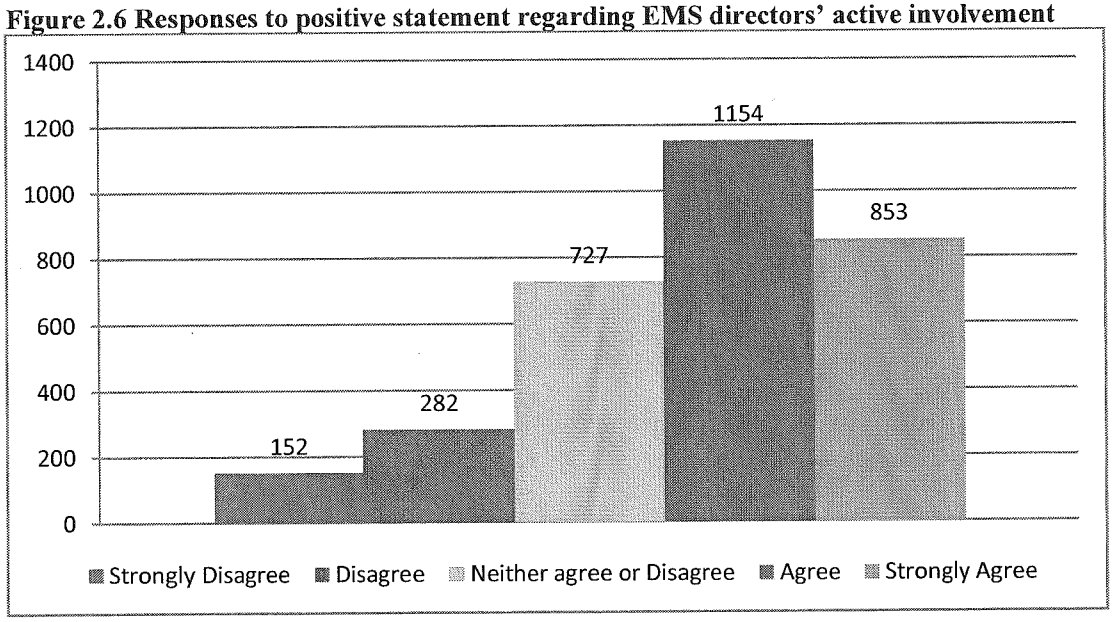
The statement, my EMS medical director provides sufficient oversight, was presented to participants. Their responses are shown in figure 2.5

Figure 2.5 Responses to positive statement regarding EMS director oversight sufficiency



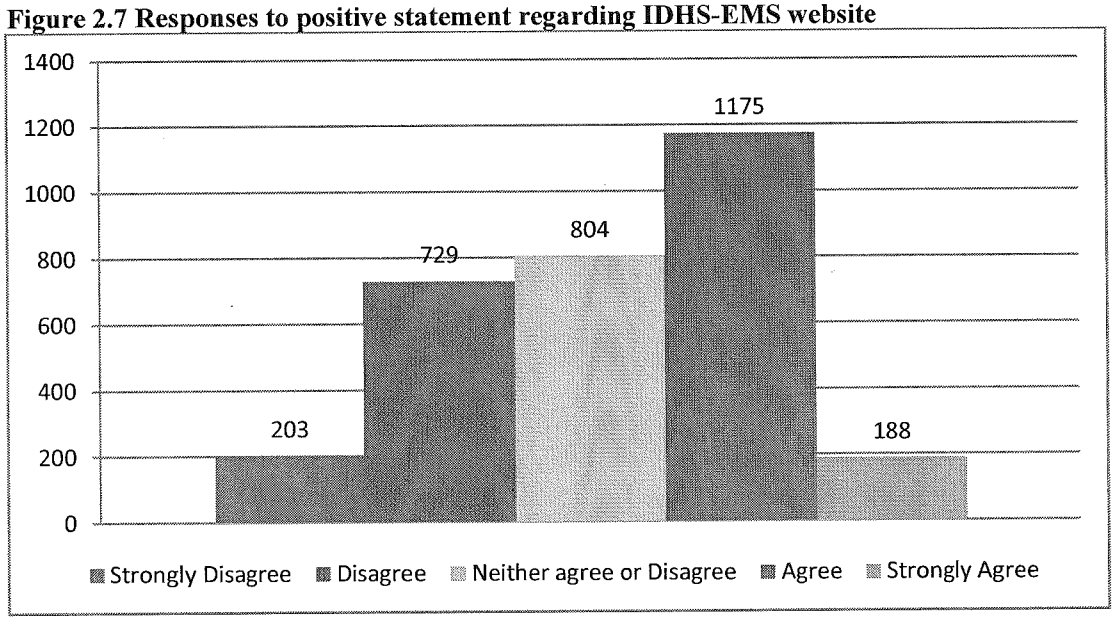
The statement, my EMS medical director is actively involved, was presented to participants. Their responses are shown in figure 2.6

Figure 2.6 Responses to positive statement regarding EMS directors' active involvement



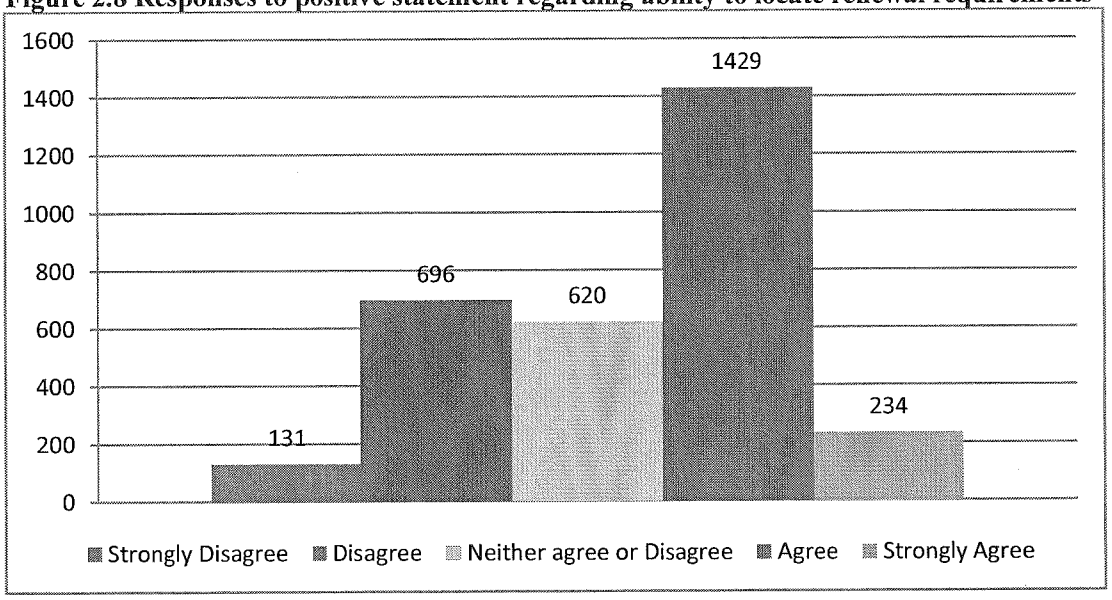
The statement, the IDHS-EMS website is easy to navigate, was presented to participants. Their responses are shown in figure 2.7

Figure 2.7 Responses to positive statement regarding IDHS-EMS website



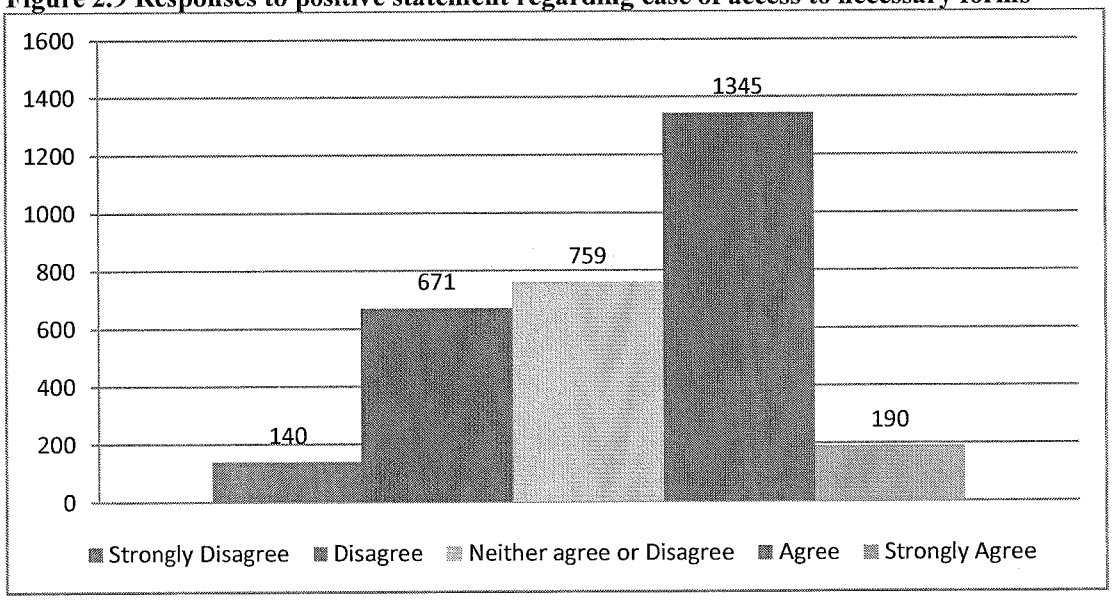
The statement, I can easily locate renewal requirements, was presented to respondents. Their responses are shown in figure 2.8

Figure 2.8 Responses to positive statement regarding ability to locate renewal requirements



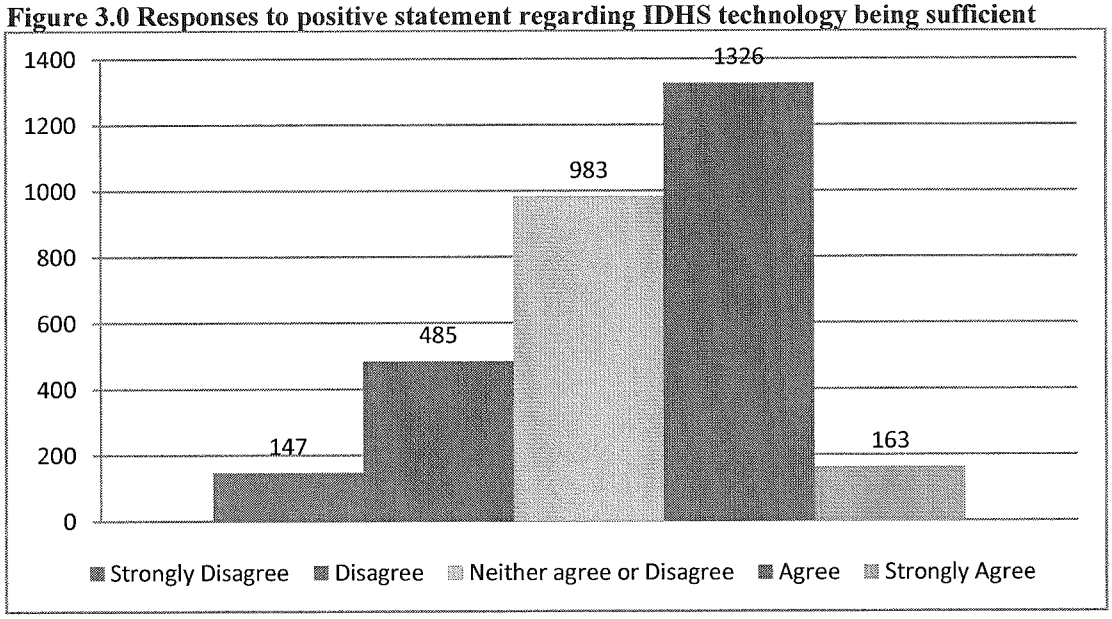
The statement, necessary forms are easily accessible, was presented to respondents. Their responses are shown in figure 2.9

Figure 2.9 Responses to positive statement regarding ease of access to necessary forms



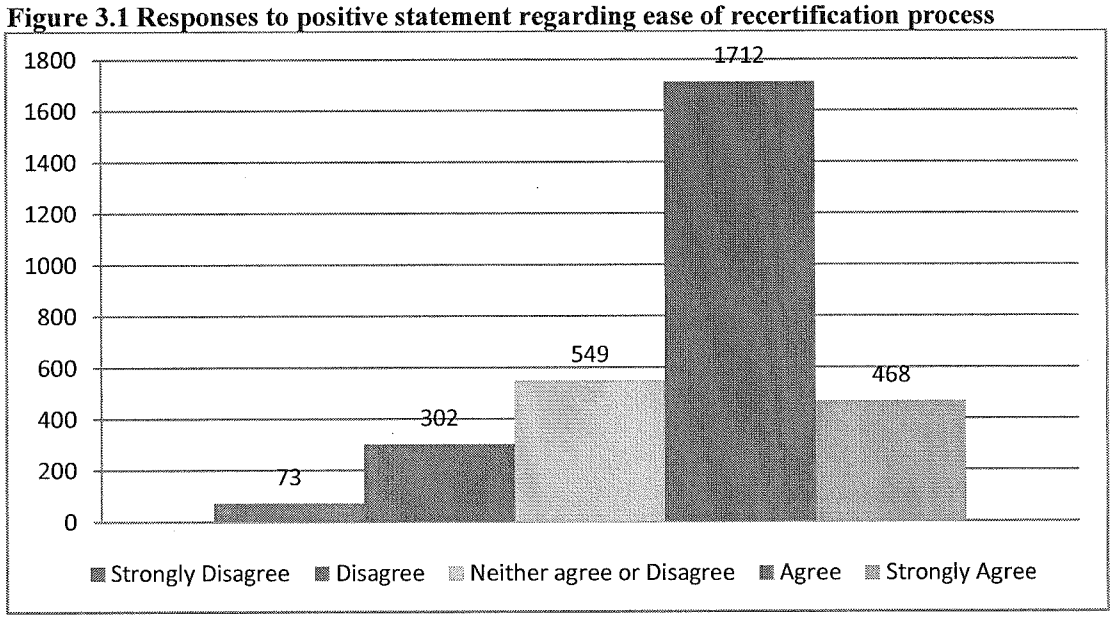
The statement, the technology used by IDHS is sufficient, was presented to respondents. Their responses are shown in figure 3.0

Figure 3.0 Responses to positive statement regarding IDHS technology being sufficient



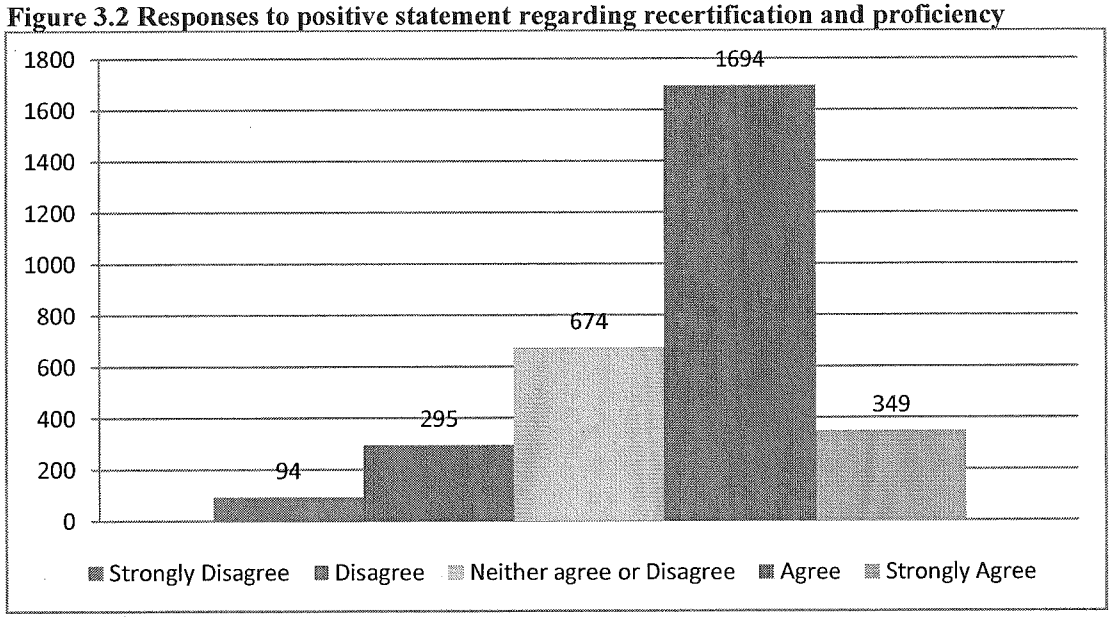
The statement, recertification is easily completed, was presented to respondents. Their responses are shown in figure 3.1

Figure 3.1 Responses to positive statement regarding ease of recertification process



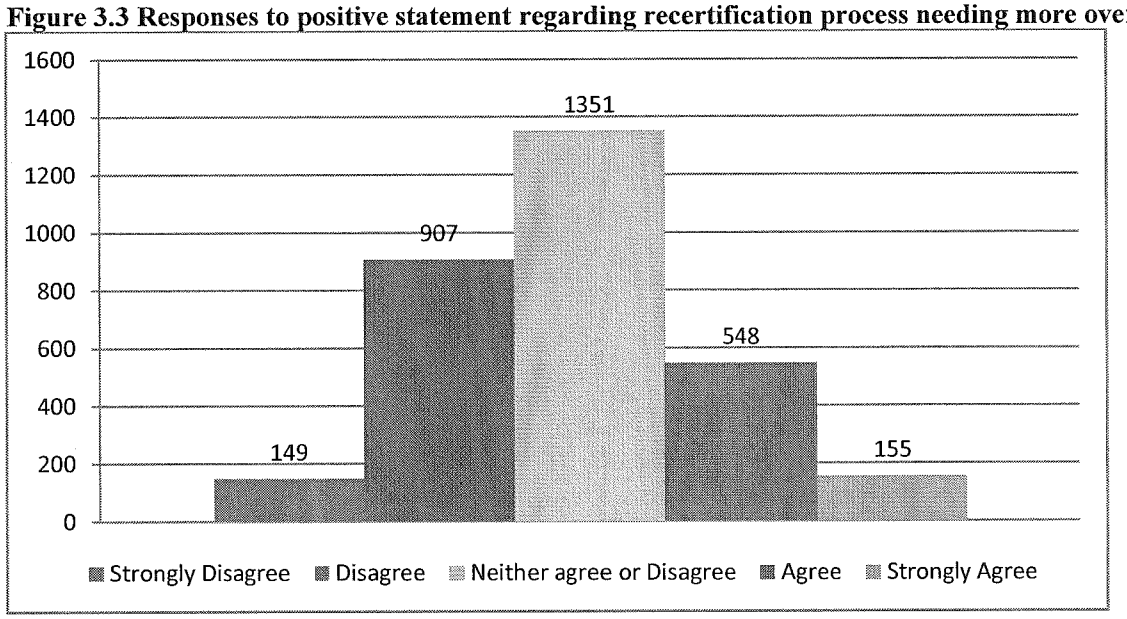
The statement, the recertification process is sufficient to maintain proficiency, was presented to respondents. Their responses are shown in figure 3.2

Figure 3.2 Responses to positive statement regarding recertification and proficiency



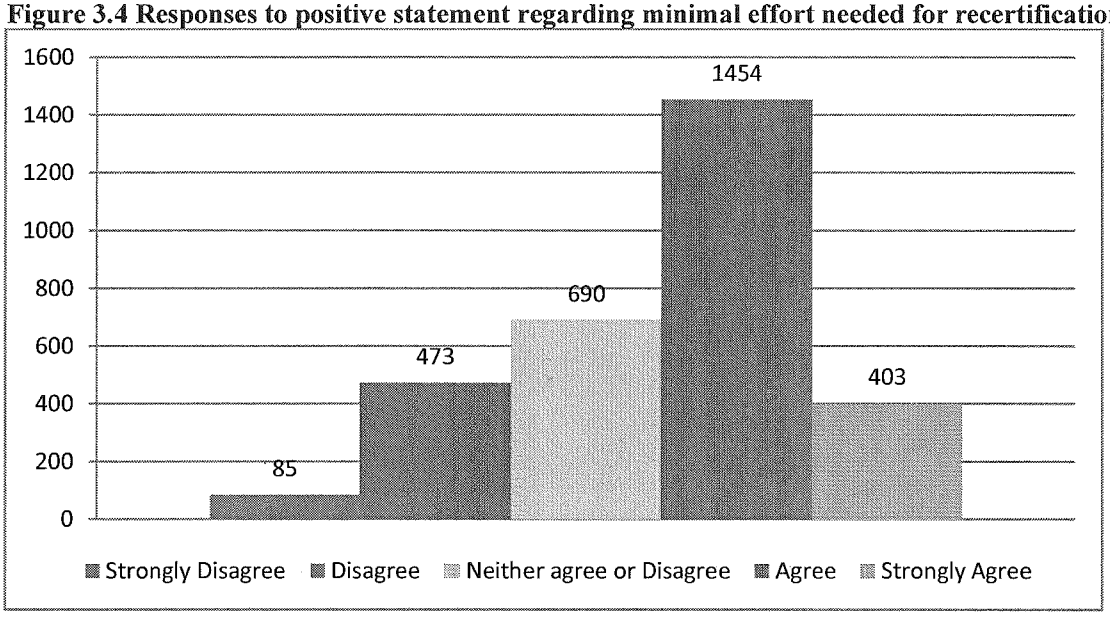
The statement, the recertification process needs more oversight, was presented to respondents. Their responses are shown in figure 3.3

Figure 3.3 Responses to positive statement regarding recertification process needing more oversight



The statement, the recertification process can be completed with minimal effort, was presented to respondents. Their responses are shown in figure 3.4

Figure 3.4 Responses to positive statement regarding minimal effort needed for recertification



This report also examines wages of EMS personnel around the state of Indiana. Wage information is challenging to obtain and while the team worked to provide accurate information, there remain inherent strengths and weaknesses to the varying methods utilized to collect wage information. Salary and wage information are subject to large fluctuations in the data reported on an annual basis. Historically, survey samples have also been shown to inflate wage information or to report other sources of income into the total for their primary position.

Wage information should be collected on an annual basis to help highlight outside factors that may lead to inconsistencies or inaccuracies. The authors of this report would recommend repeating salary surveys routinely to avoid the danger of adjusting wages based upon an inaccurate reflection of the prevailing wage or market demand. When looking at compensation, both salary and hourly for the primary position we see a broad distribution in wage. Hourly and salary wages by position type may be found in table 1.6 and 1.7 respectively. Figures 3.5 and 3.6 show this information graphically.

Table 1.6 Hourly wage distribution for primary employment

	EMT	AEMT	Medic
Mean	$13.80	$14.64	$19.11
Median	$12.00	$13.60	$18.01
Mode	$10.00	$13.00	$15.00
Min.	$7.25	$8.00	$8.00
Max.	$40.00	$32.00	$40.00
N	750	75	512

Figure 3.5 Hourly wage distribution for primary employment

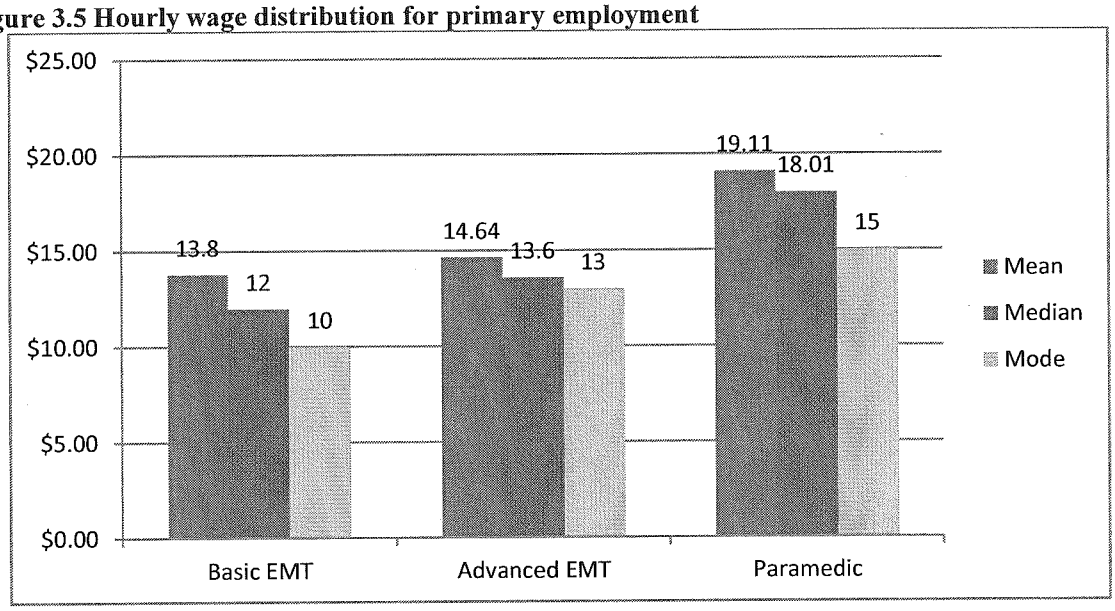
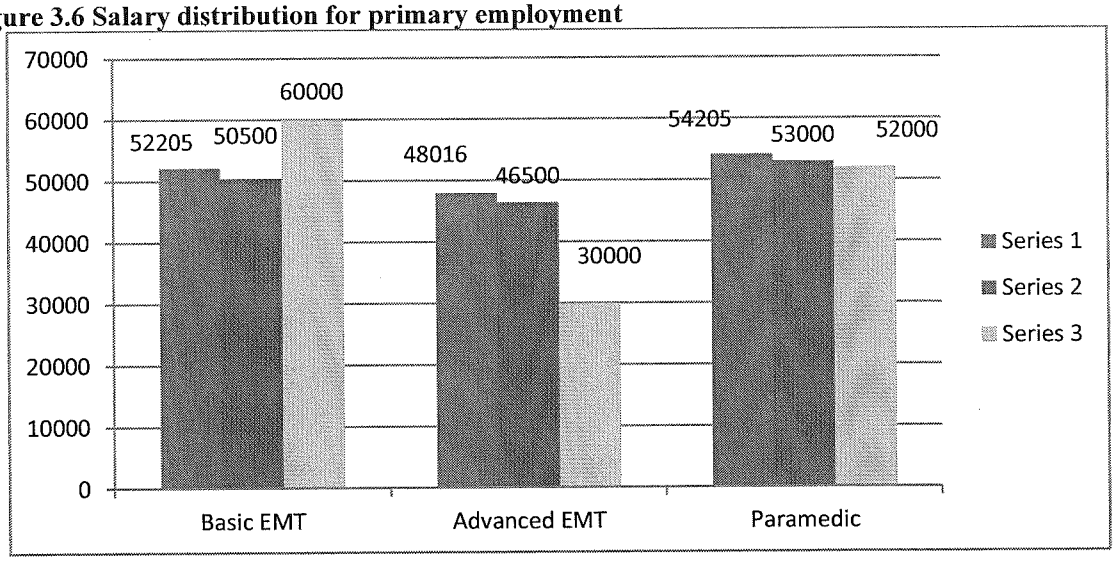


Table 1.7 Salary distribution for primary employment

	EMT	AEMT	Medic
Mean	$52,205	$48,016	$54,205
Median	$50,500	$46,500	$53,000
Mode	$60,000	$30,000	$52,000
Min.	$16,000	$30,000	$28,000
Max.	$110,000	$85,000	$130,000
N	308	38	313

Figure 3.6 Salary distribution for primary employment



In addition, respondents were requested to list how many hours they worked at their primary employment. This, similar to wages, was difficult to determine reliability of responses as many listed 24/7 in response to this question. Overall, it was found that individuals worked 37.58 hours (n=3,295) at their primary employment. This average varied from 25.26 for EMR, 35.43 for EMT, 42.22 for AEMT, and 47.12 for paramedic.

Respondents were asked if they worked a second position utilizing their EMS training. A total of 1,005 (26.5%) of respondents reported that they worked a second job. This percentage was highest among AEMT (43.9%), paramedic (42.1%), EMT (26%), and EMR (17.5%). Overall, only 3.9% of respondents reported working more than three jobs utilizing their EMS training. Having multiple jobs within the EMS highlights the fragility of the EMS system in Indiana. The loss of a single person from the system has the potential to negatively impact multiple EMS providers. This should continue to be followed on an annual basis by the EMS commission.

Indiana EMS Provider Survey

A secondary survey was distributed to the EMS service providers to collect information about their primary service areas and employment practices. A total of 94 surveys were returned, figure 3.7 displays the types of services that responded and figure 3.8 displays the description of the provider.

Figure 3.7 Types of services responding to provider survey

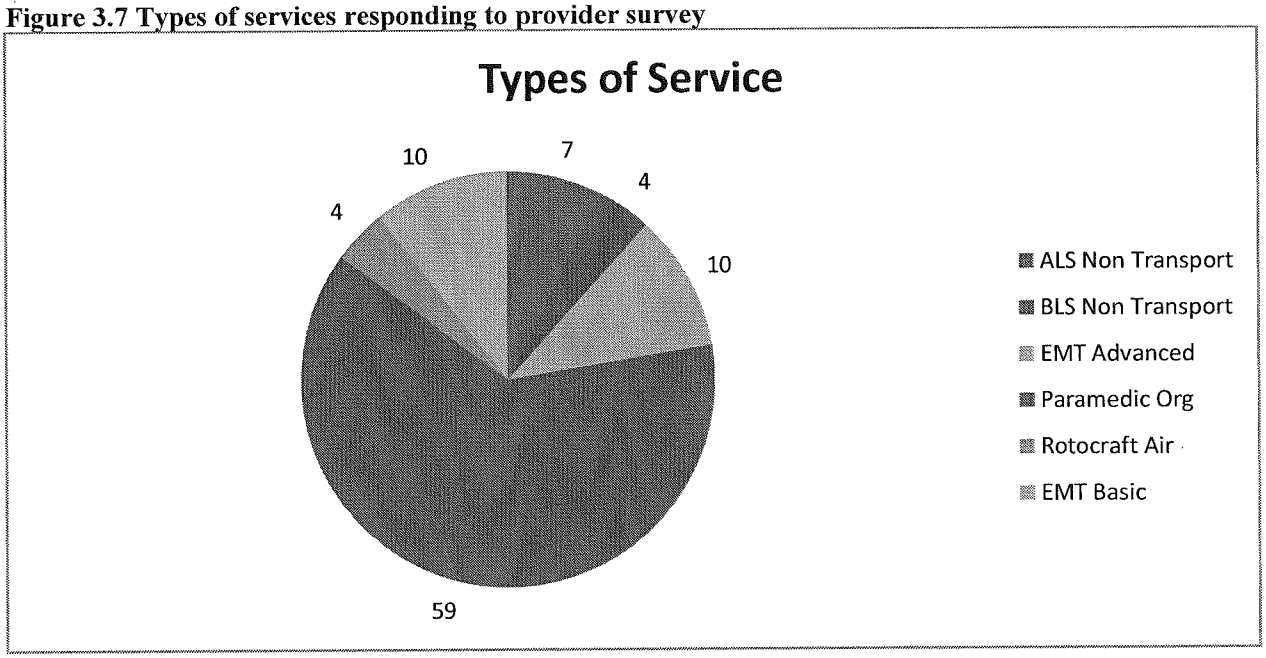
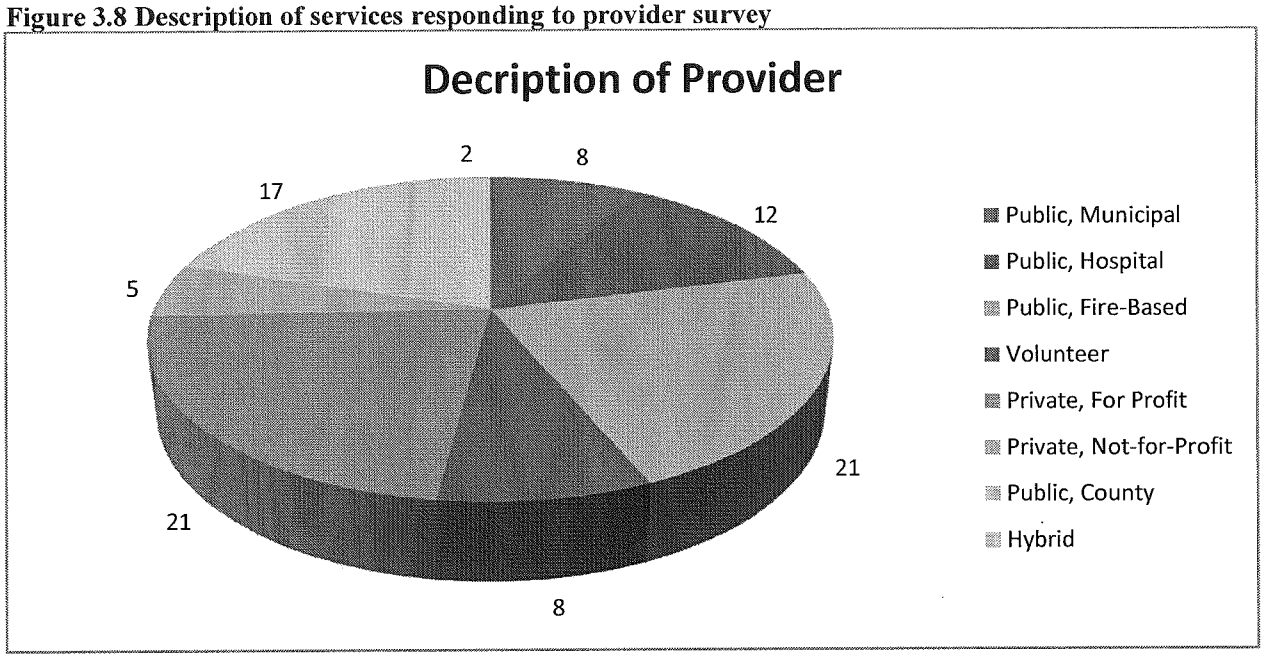
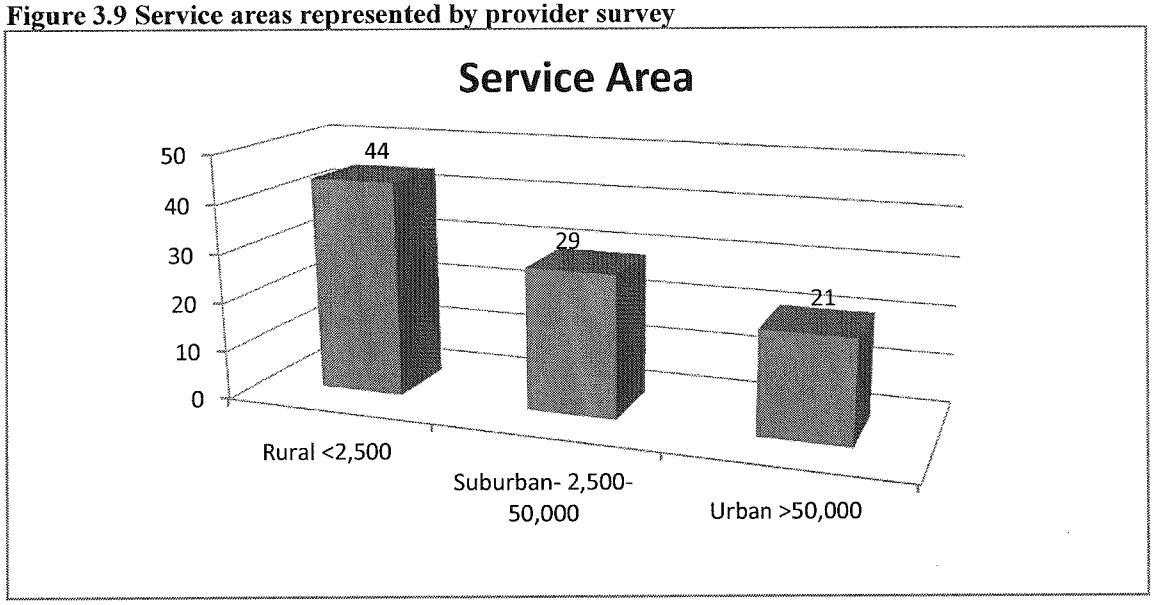


Figure 3.8 Description of services responding to provider survey



Indiana is identified as a rural area within most of its borders. The US Census 2010 identified only a handful of urban and suburbanized areas in Indiana. Figure 3.9 is a representation of the service area self-identified by the providers taking the survey.

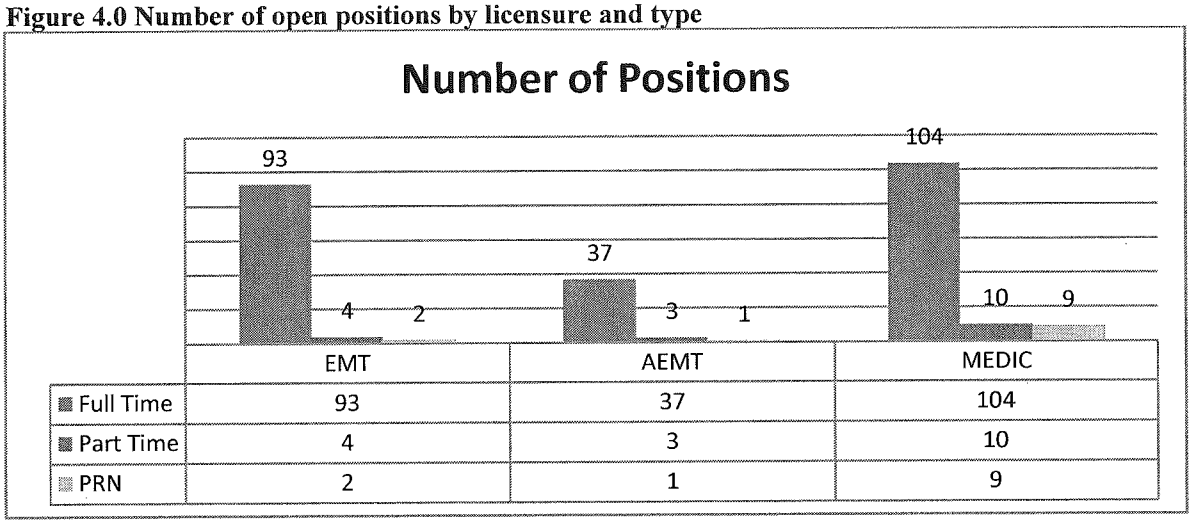
Figure 3.9 Service areas represented by provider survey



Number of Services: Of the 94 services that responded to the survey 71 reported that they have openings at this time. Each service was asked to identify the type of position that they had open: 5 services had openings for EMRs; 35 services have EMT positions; 18 services have AEMT positions; 41 have

paramedic positions. Many of the services identified that they had openings in more than one certification level. Figure 4.0 indicates the number of positions open by licensure and full-time, part-time, or as needed.

Figure 4.0 Number of open positions by licensure and type

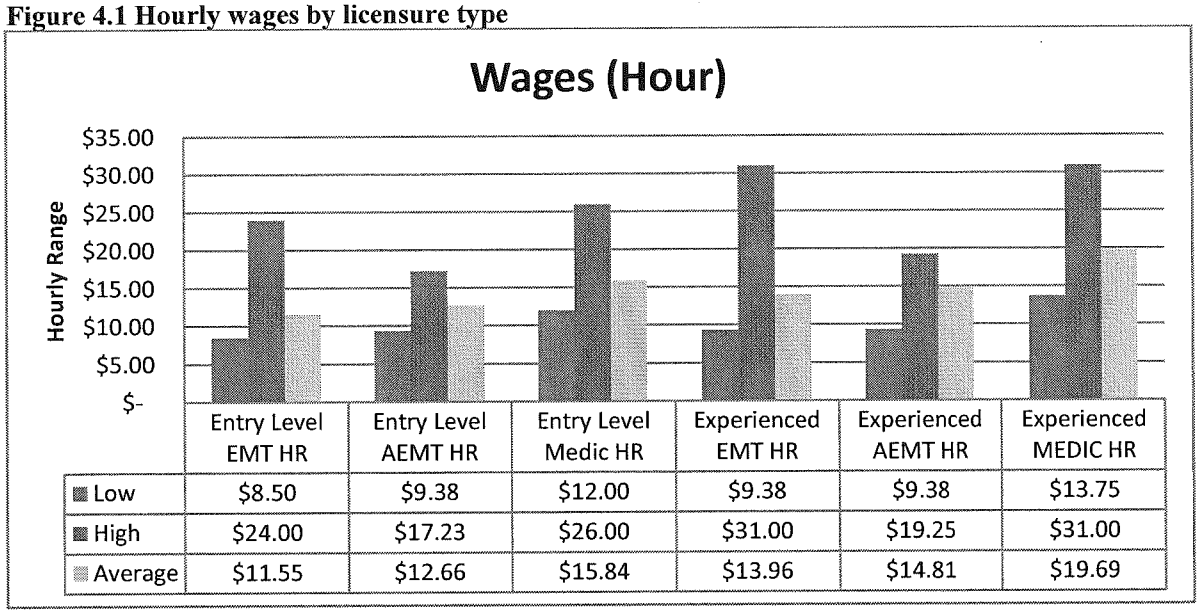


	EMT	AEMT	MEDIC
Full Time	93	37	104
Part Time	4	3	10
PRN	2	1	9

Wages were categorized by two areas due to some employers only classifying on a salary basis and not on an hourly pay scale. In order to get a closer look at the experienced wage section services were asked to only report information that does not relate to being in a supervisory role or as an administrator.

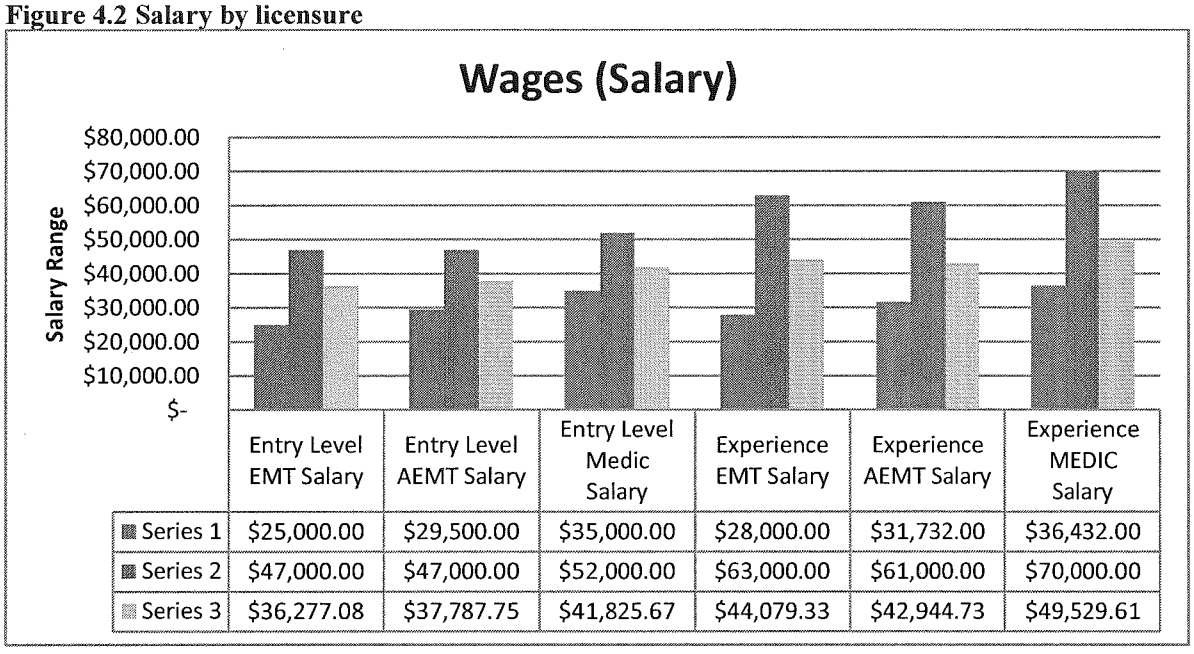
At the EMT level, 44 services provided information for the entry level wages. When asked about the experienced EMT wages 40 services were able to quantify this amount. Due to the lower amount of services that are utilizing the AEMT level around the state, only 26 services reported having a pay scale for entry level AEMT certifications and 24 services conveyed an experienced wage. Paramedic licensure wages at the entry level were recorded by 41 services. The experienced paramedic level garnered 40 responses. Hourly and salary wage information can be found in figures 4.1 and 4.2 respectively.

Figure 4.1 Hourly wages by licensure type



	Entry Level EMT HR	Entry Level AEMT HR	Entry Level Medic HR	Experienced EMT HR	Experienced AEMT HR	Experienced MEDIC HR
Low	$8.50	$9.38	$12.00	$9.38	$9.38	$13.75
High	$24.00	$17.23	$26.00	$31.00	$19.25	$31.00
Average	$11.55	$12.66	$15.84	$13.96	$14.81	$19.69

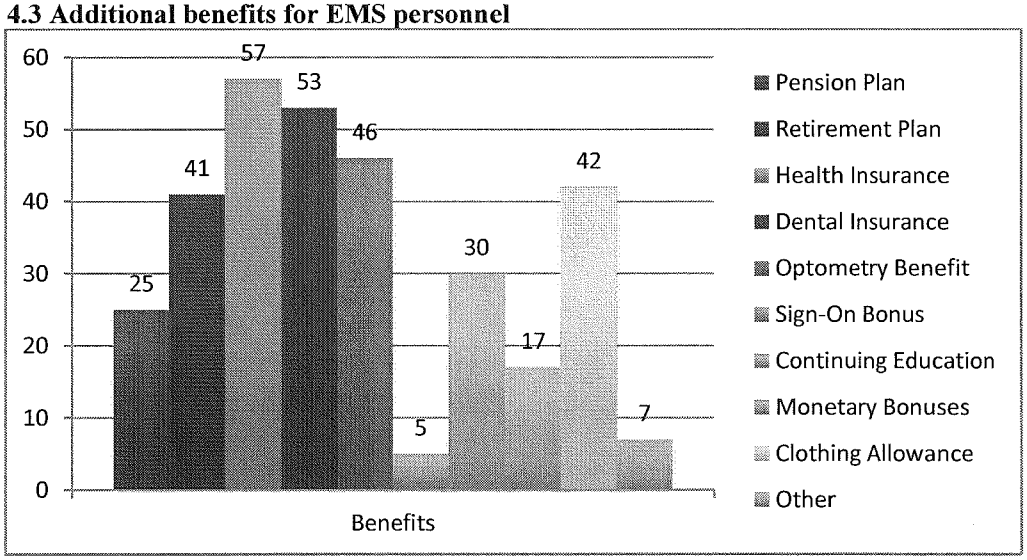
Figure 4.2 Salary by licensure



	Entry Level EMT Salary	Entry Level AEMT Salary	Entry Level Medic Salary	Experience EMT Salary	Experience AEMT Salary	Experience MEDIC Salary
Series 1	$25,000.00	$29,500.00	$35,000.00	$28,000.00	$31,732.00	$36,432.00
Series 2	$47,000.00	$47,000.00	$52,000.00	$63,000.00	$61,000.00	$70,000.00
Series 3	$36,277.08	$37,787.75	$41,825.67	$44,079.33	$42,944.73	$49,529.61

Providers were asked to choose from a variety of additional benefits that are offered to employees as incentives. Figure 4.3 displays the responses to this item. Additional programs were identified such as: holiday pay, certification bonus, life insurance and college assistance plans.

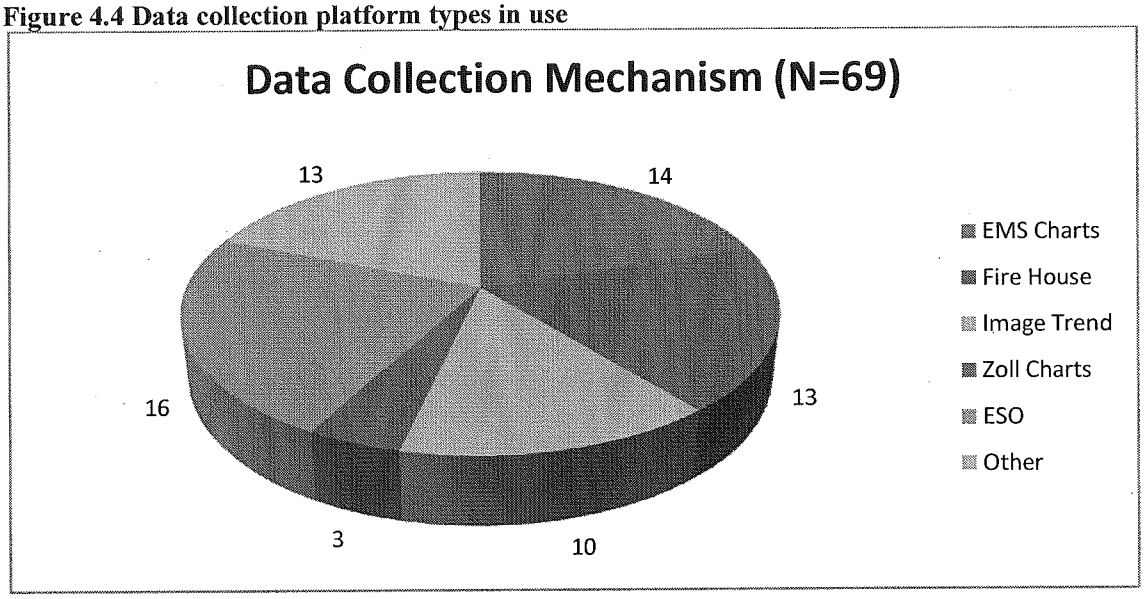
Figure 4.3 Additional benefits for EMS personnel



In an effort to determine the priority of public education, providers were asked to pinpoint whether they provided any type of a public education program on EMS within their communities. Of the 68 services responding to this question, 43 stated that they had a public education programming in place currently while 25 do not have any existing mechanism available. Data collection has been identified as an important part of the EMS system. Indiana has wide diversity in regard to data collection mechanisms in

place and no standard program for data collection is required of providers. Each provider is allowed to choose their reporting mechanism with the condition that they must be able to upload the required data elements to IDHS in the prescribed method. Figure 4.4 shows a representation of the data collection systems used by providers.

Figure 4.4 Data collection platform types in use



Conclusion

The NHTSA reassessment and this project have generated a significant amount of much needed conversation, energy, and momentum around the provision of emergency medical services in the state of Indiana. We have an amazing work force of gifted and talented professionals who are dedicated to helping friends, family, and more commonly strangers in need. There are tremendous opportunities to infuse creativity, to collaborate, and to innovate to improve patient outcomes and maximize efficiencies. The opening exists to rethink the way that the Hoosiers go about the business of delivering timely, high-quality, evidence-based care to out-of-hospital patients in need. It is imperative that the state agencies that play a role in the health and well-being of Hoosiers come together to take every step possible to embrace change and to think about the EMS delivery system in new ways. The foundation is in place for system wide change. It is time to innovate, lest we stagnate.

Acknowledgements

The Rural Health Innovation Collaborative (RHIC) would like to thank the Indiana Department of Homeland Security's (IDHS) Emergency Medical Services division for the opportunity to complete an in-depth assessment and prioritization plan for emergency medical services in the state of Indiana. The RHIC would like to express gratitude for the time, effort, and resources that were provided for this project by: Michael Garvey, IDHS EMS Director, Elizabeth Westfall, IDHS EMS District Manager, the EMS Commission, the Indiana Rural Health Association, Southard & Associates, LLC, and the multiple emergency medical services responders from across the state that participated in the survey and town hall meetings conducted throughout the study phase. The RHIC is excited to know that the proactive efforts taken by the IDHS Emergency Medical Services division will potentially have a tremendous impact upon the emergency medical service providers who risk their lives and give their time and talent on a daily basis for the health and safety of all Hoosiers.

Appendix A

Indiana Department of Homeland Security's Emergency Medical Services Division

NHTSA Reassessment Priority Plan

Number	Indiana Reassessment Recommendation	Priority	Description
100.00	Continue to refine the Labor Market Analysis survey. Data from survey should be incorporated into strategic planning efforts	4	Complete
100.01	Enact legislation to extend hospital peer-review protection to EMS QA activities	1	Creation of special legislative working group to be formed by the end of Summer 2016
100.02	Establish a memorandum of understanding with the ISDH that utilizes the epidemiological resources of the ISDH to analyze EMS data, and provide linkages with other relevant data sources.	1	Creation of a bi-agency working group (ISDH/IDHS). This working group will be established by the end of Summer 2016.
100.03	Consider the creation of other advisory groups to ensure that specific interests and stakeholders are given adequate consideration	1	Recommended groups include: Legislative, Rural, Air Medical, Community Paramedicine
100.04	Revise the administrative rules relevant to the definitions and operations of the EMS provider organizations to match current practice and demands	1	Creation of special legislative working group to be formed by the end of Summer 2016
100.05	Consider the creation of a rural EMS task force to clearly identify issues of concern for the more rural portions of Indiana, and develop long term solutions for sustainability	1	Creation of special working group focused on rural EMS.
100.06	Ensure continued epidemiologic support for EMS registry analysis and integration and coordination of trauma registry data analysis with ISDH	1	Creation of a bi-agency working group (ISDH/IDHS). This working group will be established by the end of Summer 2016.
100.07	The IDHS and the Indiana EMS Commission should seek explicit statutory authority to conduct criminal background checks for all candidates for licensure at the EMR, EMT, Advanced EMT and Paramedic levels	1	To be completed by the end of Summer 2016. 90% of survey respondents agreed that criminal background checks should be instituted.
100.08	Establish a fee structure for provider and personnel licensing that meets the intent of the Indiana General Assembly	1	To be handled with the Governor's office. 69% of survey respondents agreed that a fee should be established. 31% were opposed.
100.09	Work jointly with the ISDH to develop a comprehensive plan for managing emerging infectious diseases. The planning process should include hospitals, EMS agencies, and other responders and address identification, treatment, and transportation of individuals with serious infectious diseases	1	Creation of a bi-agency working group (ISDH/IDHS). This working group will be established by the end of Summer 2016.

Number	Indiana Reassessment Recommendation	Priority	Description
100.10	Evaluate air medical utilization on patient outcome	1	Establish Air Medical special working group by the end of Summer 2016. This group will working in collaboration with the Indiana Association of Air Medical Services.
100.11	The IDHS, ISDH, and IEMSC should clarify the legal aspects related to Community Paramedicine/Mobile Integrated Healthcare and seek to establish legislation and/or promulgate rules and regulations as necessary.	2	The special working group will be established and convene prior to the end of the Summer 2016. It is anticipated that legislation will take place in 2017.
100.12	Assess fees for inspections, and authorization processes to provide funding for EMS system technical assistance, regional system planning and compliance	2	To be handled internal and with the Governor's office.
100.13	Enforce the existing statewide communication interoperability plan to ensure seamless field communications.	3	Implementation plan available in February 2016 report
100.14	Provide training and education for EMS educators to ensure they understand and are able to utilize NES	3	Internal IDHS staff will review and engage recommendations.
100.15	Develop a formal medical director education and orientation program that is required for all medical directors	3	To be coordinated by Dr. Olinger/internal IDHS staff
100.16	Further develop and support regionalized system development within individual districts	3	Internal IDHS staff will review and engage recommendations.
100.17	Establish requirements for EMS instructors that are standardized with additional specifications detailing criteria for other EMS educational roles, such as adjunct faculty, lab aides and clinical preceptors.	3	To follow current accreditation standards. Internal IDHS staff will review and engage recommendations.
100.18	Evaluate and revamp EMD program standards including dispatcher certification and medical direction oversight	3	Work collaboratively with the Academy to determine potential implementation.

Priority Legend

Priority	Color Code
1: LESS THAN 6 MONTHS- Implementation Plan/Review	
2: 6 MONTHS TO 1 YEAR- Implementation Plan/Review	
3: GREATER THAN 1 YEAR- Implementation Plan/Review	
4: COMPLETE	

Appendix B

State EMS Assessment

Q1 06/15/2015 The State of Affairs: EMS Assessment and Workforce Study You are being invited to participate in a survey about the status of Indiana's Emergency Medical Services System. This survey is being conducted by Dr. Erik Southard, DNP, FNP-BC, Stephanie Laws, RN, MS, and Cody Mullen with sponsorship and guidance from the Indiana Department of Homeland Security. There are no known risks if you decide to participate in this survey. There are no costs to you for participating in the survey. The survey is aimed at learning more about the state EMS workforce and the needs in the communities around the state. The survey will take about 15 minutes to complete, depending on how you answer the questions. The information collected may not benefit you directly, but the information learned in this survey will provide knowledge that will help the Department of Homeland Security and the State EMS Commission to make informed decisions about improving the state of EMS in Indiana. Your responses will be kept completely confidential. We will not know your IP address when you respond to the survey. We will not ask you to include any personal identifying information or an email address during the initial survey. Should the survey data be published, the data will only be published in aggregate form and no individual information will be disclosed. Your participation in this survey is voluntary. Should you agree to participate, simply choose 'Yes' and proceed to the survey. By doing so, you are indicating consent and you are voluntarily agreeing to participate. You are free to withdraw your participation from the survey at any time without penalty. At the end of the survey, you will be redirected to a completely new web link and a separate survey. If you would like to have a Continuing Education certificate worth 2 hours of credit sent to your email you will need to enter your first name, last name, and email address. Responses entered in the second survey cannot be linked to your responses in the first survey.vvThese records will only be kept for the purpose of awarding credit. You must complete the entire survey to receive your certificate. Participants completing the survey by June 20th will be entered into a drawing for a $25.00 Visa gift card. If you have any questions about the survey, please contact Erik Southard, Department of Advanced Practice Nursing, 217 Landsbaum Center for Health Education, Terre Haute, IN 47807, by phone at 812-237-7919, or by email at erik.southard@indstate.edu

- ❍ Yes, I agree to participate in the survey. (1)
- ❍ No, I prefer to not participate in the survey (2)

If No, I prefer to not partici... Is Selected, Then Skip To Thank you for your time and considera...

Q24 What is your age in years? (Please use numbers and do not spell out.)

Q51 What is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Transgendered (3)
- ○ I prefer not to answer (4)

Q26 What is your race?

- ☐ Hispanic or Latino (1)
- ☐ American Indian or Alaska Native (2)
- ☐ Asian (3)
- ☐ Black or African American (4)
- ☐ Native Hawaiian or Other Pacific Islander (5)
- ☐ White (6)
- ☐ Race/ethnicity Unknown (7)

Q67 Select the highest level of education that you have completed:

- ○ Some High School (7)
- ○ High School Diploma/GED (1)
- ○ Some College (2)
- ○ Associate Degree (3)
- ○ Bachelors Degree (4)
- ○ Master's Degree (5)
- ○ Doctorate (6)

Q22 Select your level of certification/licensure?

- ○ Emergency Medical Responder (2)
- ○ EMT Basic (3)
- ○ EMT Advanced (4)
- ○ Paramedic (5)

Answer If Select your level of certification/licensure? Paramedic Is Selected

Q72 Do you work in a hospital setting?

- ○ Yes (1)
- ○ No (2)

Answer If Do you work in a hospital setting? Yes Is Selected

Q74 What is your primary department at the hospital?

- ○ Emergency room (1)
- ○ Cath lab (2)
- ○ Other (3) _____

Answer If Do you work in a hospital setting? Yes Is Selected

Q75 Please select from the following list the functions which you perform in your hospital department as a paramedic:

- ☐ IV Insertion (1)
- ☐ Catheter Insertion (2)
- ☐ Administration of PO medications (3)
- ☐ Administration of IV medications (4)
- ☐ Intubation (5)
- ☐ IO placement (6)
- ☐ Local Anesthesia (7)
- ☐ Wound closure (8)
- ☐ Injections (9)
- ☐ EKG Tracings (10)
- ☐ NG tube placement (11)
- ☐ Other (12) _____

Q25 How many years have you been certified in the Indiana EMS system? (Please use numbers and do not spell out.)

Q59 Training/Certifications currently held (Select all that apply):

- ❑ EMR (1)
- ❑ EMT (2)
- ❑ AEMT (3)
- ❑ PARAMEDIC (4)
- ❑ PHTLS (5)
- ❑ AMLS (6)
- ❑ BCON (7)
- ❑ LEFR (8)
- ❑ TCCC (9)
- ❑ PEPP (10)
- ❑ PALS (11)
- ❑ NRP (12)
- ❑ ITLS (13)
- ❑ BTLS (14)
- ❑ CCEMTP (15)
- ❑ ACLS (16)
- ❑ FLIGHT PARAMEDIC (17)
- ❑ PRIMARY INSTRUCTOR (18)
- ❑ FIRE FIGHTER 1 (19)
- ❑ FIRE FIGHTER 2 (20)
- ❑ FIRE INVESTIGATOR (21)
- ❑ FIRE OFFICER (22)
- ❑ INSTRUCTOR 1 (23)
- ❑ INSTRUCTOR 2/3 (24)
- ❑ HAZARDOUS MATERIAL AWARENESS (25)
- ❑ HAZARDOUS MATERIAL OPERATIONS (26)
- ❑ HAZARDOUS MATERIAL TECHNICIAN (27)
- ❑ TECHNICAL RESCUE (28)
- ❑ SAFETY OFFICER (29)
- ❑ LAW ENFORCEMENT OFFICER (30)
- ❑ REGISTERED NURSE (31)
- ❑ COMMUNITY PARAMEDIC (32)
- ❑ EVOC (33)
- ❑ DRIVER OPERATOR (34)

Q27 In your primary employment/position what City, State, and County do you work in? (Please indicate state with two letters, i.e. Indiana=IN)

City (1)
State (2)
County (3)
District (4)

Q54 How many hours do you typically work for this service on a weekly basis? (Please use numbers and do not spell out.)

Q71 Which of the following best describes this service?

- ❍ Public, Municipal (1)
- ❍ Public, Hospital (2)
- ❍ Public, Fire-based (4)
- ❍ Volunteer (5)
- ❍ Private, For-Profit (6)
- ❍ Private, Not-For-Profit (7)
- ❍ Public, County (8)
- ❍ Other (9) _____

Q59 Please enter your wage (hourly or salary) for your primary employment. If this position is a volunteer position or "uncompensated" please select either hourly or salary and enter a 0 to indicate this.

- ❍ Hourly (1) _____
- ❍ Salary (2) _____

Q28 Do you have a second position?

- ❍ Yes (10)
- ❍ No (11)

If No Is Selected, Then Skip To Are you currently nationally registered?

Q68 In your secondary employment position what City, State, and County do you practice in? (Please indicate state with two letters, i.e. Indiana=IN)

City (4)
State (5)
County (6)
Distict (7)

Q55 How many hours do you typically work for this service on a weekly basis? (Please use numbers and do not spell out.)

Q70 Which of the following best describes this service?

- ❍ Public, Municipal (1)
- ❍ Public, Hospital (2)
- ❍ Public, Fire-based (4)
- ❍ Volunteer (5)
- ❍ Private, For-Profit (6)
- ❍ Private, Not-For-Profit (7)
- ❍ Public, County (8)
- ❍ Other (9) _____

Q60 Please enter your wage (hourly or salary) for your primary employment. If this position is a volunteer position or "uncompensated" please select either hourly or salary and enter a 0 to indicate this.

- ❍ Hourly (1) _____
- ❍ Salary (2) _____

Q29 Are you employed in a third position?

- ❍ Yes (9)
- ❍ No (10)

If No Is Selected, Then Skip To Are you currently nationally registered?

Q69 In your third position what City, State, and County do you practice in? (Please indicate state with two letters, i.e. Indiana=IN)

City (1)
State (2)
County (3)
District (4)

Q56 How many hours do you typically work for this service on a weekly basis?(Please use numbers and do not spell out.)

Q72 Which of the following best describes this service?

- ❍ Public, Municipal (1)
- ❍ Public, Hospital (2)
- ❍ Public, Fire-based (4)
- ❍ Volunteer (5)
- ❍ Private, For-Profit (6)
- ❍ Private, Not-For-Profit (7)
- ❍ Public, County (8)
- ❍ Other (9) _____

Q61 Please enter your wage (hourly or salary) for your primary employment. If this position is a volunteer position or "uncompensated" please select either hourly or salary and enter a 0 to indicate this.

- ❍ Hourly (1) _____
- ❍ Salary (2) _____

Q30 Are you currently nationally registered?

- ❍ Yes (9)
- ❍ No (10)

Q58 What type of service are you employed by in your primary position:

- ❍ ALS NON-TRANSPORT (1)
- ❍ BLS NON-TRANSPORT (2)
- ❍ EMT ADVANCED ORGANIZATION (3)
- ❍ FIXED WING AIR AMBULANCE (5)
- ❍ PARAMEDIC ORGANIZATION (6)
- ❍ RESCUE SQUAD ORGANIZATION (7)
- ❍ ROTOCRAFT AIR AMBULANCE (8)
- ❍ EMT BASIC SERVICE PROVIDER (9)
- ❍ Other (10) _____

Q63 Please select your district of residence from the following list.

- ❍ District 1 (1)
- ❍ District 2 (2)
- ❍ District 3 (3)
- ❍ District 4 (15)
- ❍ District 5 (16)
- ❍ District 6 (17)
- ❍ District 7 (18)
- ❍ District 8 (19)
- ❍ District 9 (20)
- ❍ District 10 (21)

Q64 Please rank the methods that you use to obtain your continuing education certification hours. Rank the most frequently used method as number one and the least used method as number 7. (For example clicking and holding the button down on online courses first and dragging online courses under refresher courses will indicate that you use refresher courses first and online courses as your second method to obtain hours) Clicking and holding will allow you to reorder all responses. The top response when you are finished will be the source you use most followed by the next response on the page.

_____ Online Courses (1)
_____ Refresher Course (2)
_____ Department Sponsored In-service (3)
_____ Attend Current EMT/Paramedic Courses (4)
_____ Conferences (5)
_____ District Sponsored Courses (6)
_____ Other (7)

Q65 For the next series of items please rate your level of agreement with the statements:

Q66 There are sufficient opportunities for me to access continuing education and training.

- ❍ Strongly Disagree (4)
- ❍ Disagree (5)
- ❍ Neither Agree nor Disagree (6)
- ❍ Agree (7)
- ❍ Strongly Agree (8)

Q69 The current requirements for re-certification ensure that providers are well trained to meet the ongoing needs of the patients we serve.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q67 The current process for re-certification ensures that providers are well trained to meet the ongoing needs of the patients we serve.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q68 I would be interested in participating in educational opportunities provided through an online platform by the Department of Homeland Security.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q70 I would be willing to pay a nominal fee for my re-certification for EMS system development, training, and support.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q76 I would like to see the Indiana EMS system involved in trials/studies to help improve patient care practices and protocols.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q77 The Indiana EMS system should regionalize protocols.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q78 My EMS medical director provides sufficient oversight.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q79 My EMS medical director is actively involved.

- ❍ Strongly Disagree (6)
- ❍ Disagree (7)
- ❍ Neither Agree nor Disagree (8)
- ❍ Agree (9)
- ❍ Strongly Agree (10)

Q71 Please rate the following items (1 indicates "complete disagreement" and 5 indicates "complete agreement")

	Strongly Disagree (6)	Disagree (7)	Neither Agree nor Disagree (8)	Agree (9)	Strongly Agree (10)
This number "1" is the number one. (8)	❍	❍	❍	❍	❍
The IDHS-EMS website is easy to navigate. (1)	❍	❍	❍	❍	❍
I can easily locate renewal requirements. (2)	❍	❍	❍	❍	❍
Necessary forms are easily accessible. (3)	❍	❍	❍	❍	❍
The technology used by IDHS is sufficient. (5)	❍	❍	❍	❍	❍
Re-certification is easily completed. (6)	❍	❍	❍	❍	❍
The re-certification process is sufficient to maintain proficiency. (7)	❍	❍	❍	❍	❍
The re-certification process needs more oversight. (9)	❍	❍	❍	❍	❍
I can complete my re-certification with minimal effort. (10)	❍	❍	❍	❍	❍

Q80 What topics would you like to see the EMS Training Section address and facilitate continuing education on?

Answer If 01/19/2015 The Professional Perspective: Views of Community Paramedicine You are bein... No, I prefer to not participate in the survey Is Selected

Q73 Thank you for your time and consideration!

Appendix C

EMS Regional Assessments

Q1 The Rural Health Innovation Collaborative, the Indiana Rural Health Association, and the Indiana Department of Homeland Security's EMS Division are partnering to gain additional information to help guide strategic planning efforts and quality improvement initiatives to advance the state EMS system.There are no known risks if you decide to participate in this survey. There are no costs to you for participating in the survey. The survey is aimed at learning more about the state EMS workforce and the needs in the communities around the state. The survey will take less than 5 minutes to complete. The information collected may not benefit you directly, but the information learned in this survey will provide knowledge that will help the groups to make informed decisions about improving the state of EMS in Indiana. Your responses will be kept completely confidential. We will not know your IP address when you respond to the survey. We will not ask you to include any personal identifying information or an email address. Should the survey data be published, the data will only be published in aggregate form and no individual information will be collected nor disclosed. Your participation in this survey is voluntary. Should you agree to participate simply begin answering the questions. By doing so, you are indicating consent and you are voluntarily agreeing to participate. You are free to withdraw your participation from the survey at any time without penalty.

Q2 Please select the district that you are employed in for your primary EMS employment.

- ❍ District 1 (1)
- ❍ District 2 (2)
- ❍ District 3 (3)
- ❍ District 4 (4)
- ❍ District 5 (5)
- ❍ District 6 (6)
- ❍ District 7 (7)
- ❍ District 8 (8)
- ❍ District 9 (9)
- ❍ District 10 (10)

Q3 Would you be willing to pay a fee for licensure if those funds were utilized for training?

- ❍ Yes (1)
- ❍ No (2)

Q4 Would you support the creation of advisory groups for various special interests.

- ❍ Yes (1)
- ❍ No (2)

Q5 Should the national registry exam be adopted for the EMT level?

- ❍ Yes (1)
- ❍ No (2)

Q6 Is the existing statewide communication interoperability plan enforced to ensure communication?

- ❍ Yes (1)
- ❍ No (2)

Q7 Should the EMS rules be revised to reflect current EMS practices and demands?

- ❍ Yes (1)
- ❍ No (2)

Q8 Should there be statewide clinical protocols established as a floor for stemi/stroke/trauma?

- ❍ Yes (1)
- ❍ No (2)

Q9 Should standards be created to better define work place safety equipment and training?

- ❍ Yes (1)
- ❍ No (2)

Q10 Do you support the use of fingerprint-based criminal background checks for licensure?

- ❍ Yes (1)
- ❍ No (2)

Q11 Do you support establishing requirements for EMS instructors to instruct all course levels?

- ❍ Yes (1)
- ❍ No (2)

Q12 Should there be legislation enacted to advance community paramedicine in Indiana?

- ❍ Yes (1)
- ❍ No (2)

Q13 Do you feel there is a current shortage of EMTs?

- ❍ Yes (1)
- ❍ No (2)

Q14 Do you feel there is a shortage of paramedics?

- ❍ Yes (1)
- ❍ No (2)

Q15 Would you like to be provided outcome reports from the data you submit to the state?

- ❍ Yes (1)
- ❍ No (2)

Q16 Please provide any additional comments or constructive feedback here.