**RFP 21-66211**

**TECHNICAL PROPOSAL**

**ATTACHMENT F3**

Please supply ***all*** requested information ***in the yellow-shaded areas*** and indicate any attachments that have been included. See **Appendix – Attachments** at the end of this document for an alphabetic listing of the attachments and identification of the section, item and page number where it is referenced within this document.

**3.1 General Information**

1. How long have you provided data warehouse services?

We first offered the employer data warehouse solution, including health data analytics to the employer market in 1982. It has evolved as the delivery of health care has transformed over the years and influenced data, reporting and analytics.

1. How many clients do you currently serve?

We currently support 529 employer groups with our data collection/integration, reporting and analytic services.

1. Please describe your experience serving State government plan sponsors or other large municipalities.

Optum has served State government plan sponsors, along with federal agencies and county government plan sponsors, with our data warehouse solution for more than 25 years. We understand the specific needs of government plan sponsors. Our support of their needs ranges from routine reporting and trend analysis to rate setting initiatives through our team’s direct support, including ad hoc reporting and analysis.

1. Describe any equity, financial or other interests you hold in vendors, suppliers, consultants, and other business with which you have a commercial relationship related to your operations.

The operations for our data warehouse solution do not involve any external vendors, suppliers, consultants or other businesses.

1. What is your experience working with Anthem Blue Cross Blue Shield (Anthem), CVS Caremark, and other national or regional health insurers and administrators? Do you have agreements in place with Anthem and CVS Caremark?

We have more than 20 years of experience working directly with Anthem and CVS Caremark and have legal agreements with both.

Our experience with benefit vendors as a data integrator spans three decades across medical, drug, dental, vision, lab results, health management and wellness programs and disability data. We integrate medical benefits data on behalf of our customers across all national health plans, third-party administrators (TPAs) and many regional health plans with whom we have legal agreements.

Our experience with PBMs also spans decades and includes CVS Caremark, Express Scripts, OptumRx, MedImpact, Prime Therapeutics and ARGUS Health System, as well as the legacy organizations who have been integrated into these national PBMs through mergers and acquisitions. In addition, we have agreements in place to receive prescription drug data from national and regional health plans that integrate prescription drug coverage as part of their medical benefits.

1. Within the last 3 years, has your organization experienced any privacy or security breaches resulting in release of confidential member data? If yes, please describe the incident and corrective actions taken.

As a matter of practice, UnitedHealth Group does not disclose details concerning security or privacy incidents except to comply with the US Department of Health & Human Services (HHS) breach regulations. This includes posting breaches involving more than 500 individuals to the HHS Breach Website and an annual filing of small breaches with HHS Office for Civil Rights.

UnitedHealth Group takes any alleged or confirmed incident seriously. When we become aware of a potential or actual incident, a systematic investigation is promptly undertaken to analyze, contain, recover, and implement post-incident management including the review of any customer, member, and regulator notification obligations. Corrective action often includes employee retraining, coaching, and review to determine if disciplinary action is appropriate.

1. Identify each member of the proposed account team and explain their role in providing services to the State.

The proposed account team and their roles are described below.

**Client Manager**: The client manager manages the strategic account relationship for the

proposed solution with the State of Indiana (the State).

**Ken Webb** is the proposed client manager. He brings 13 years of experience in this role for the proposed solution. Ken will work with your decision makers and stakeholders to make sure the State is receiving value from their investment. He is responsible for contract management, including approving all invoices that will be provided to the State. In addition, Ken is your first level of escalation for concerns associated with

deliverables and service.

**Senior Analyst**: The senior analyst is the primary contact for State users and analysts.

**Katelyn Bowling** is the proposed senior analyst for the State. She brings more than nine years of experience as the subject matter expert in the use of the proposed solution with applied expertise working with all types of benefits data. Katelyn is responsible for providing day-to-day user, technical and analytic support, navigation guidance, reporting, analysis, report interpretation, training and all other general application questions. More specifically, the senior analyst provides project management oversight of our internal processes and delivers status on a recurring basis. Katelyn will create and generate report results for the routine and specialized reporting and analytics to support your needs. She provides users with insights and understanding of our analytic methodologies, including assisting with the interpretation of your results.

**Data Manager**: The data manager is responsible for all data integration and ongoing data management actives and the related processes.

**Sejal Shah** is the proposed data manager for the State. She brings 10 years of experience in this role for the proposed solution. Sejal will work directly with your benefit vendors to establish secure file transfer protocols (SFTP) and educate them on our data requirements as part of establishing the data layouts for the files that will be provided to us on behalf of the State. The data manager is responsible for initial data quality assessment, an in-depth analysis of the raw data in the supplied test data files, verifying the information provided is complete, accurate, valid and reasonable to provide the optimal results for the State. When the raw data is deemed usable, the data manager will request the full historical data file for integration processing. Sejal is a primary user of our ETL tool that facilitates the integration of data and evaluates the data quality based on our rules and thresholds established during the in-depth data quality assessment with input from the data supplier and the State. Upon completion of implementation, Sejal is responsible for ongoing data quality validation, including control total tie outs and review of the established data validation applied during processing. She is also is responsible for data investigations when necessary.

**3.2 Data Warehouse Services**

1. Please describe the data warehouse solution you are proposing to the State.

The proposed data warehouse solution will provide the State the quality results through an easy-to-use reporting platform with the wrap-around services required to manage, measure and monitor the collection of benefits you provide to employees and their covered dependents to support their health and wellness needs.

State users will access the power of the integrated results through Benefits Analytic Manager, our comprehensive cloud-based data and analytics platform. We will apply our proven data integration management expertise and enhance those results with the result from our analytic methodologies to provide the information you need when you need it. Our experienced team will support the State and your users with guidance and assistance to measuring the performance of your benefits to make sound decisions to support the health and wellness of your covered population.

As the State already knows, the key to the successful implementation of an integrated data warehouse is in the data foundation. This is one of the areas where Optum excels. We have established relationships with hundreds of data suppliers supporting more than 300 unique data layouts across the spectrum of benefit types. Through those existing relationships, we can begin to engage with the State’s benefit vendors on your behalf as soon as you provide your authorization for them to engage with us.

Our data warehouse is a standard data model supporting eligibility information including coverage by benefit type, claims detail, lab results (biometrics), health assessment results at the questions and answer level, health and wellness program case-level detail and disability case-level detail. Our data integration approach does not include requiring your business associates to create new extracts according to our specifications. Rather, we prefer to leverage established layouts from benefit vendors with whom we have an existing relationship. Should we engage with a vendor we have previously not worked with, we will provide them with our required and optional data elements to leverage one of their existing extracts. The foundation to our data warehouse is the eligibility data as this provides the information necessary to connect the unrelated data files at the member level. This is also where the information about the State benefits, organization and work force resides. Our solution anchors on this information, enabling it to be used across the varying types of benefit information. This is also the basis for the State’s reporting structure that can be used to slice, dice and filter results as needed to support your reporting and analytic needs.

An integral part of our solution is the value-add analytic results produced from the eligibility, medical and drug data we receive on your behalf. These results provide powerful information about the health and wellness of your covered population and their adherence with evidence-based treatment guidelines. Analysis of these results yields insights about the conditions that are prevalent and those that are driving the most cost. These results also help to understand the segment of the population who is driving a high proportion of cost. Your senior analyst has the expertise required to guide and assist you in leveraging these results to tell the story about what is driving cost trends as well as the why and inform potential changes to benefit strategy now and in the future.

State authorized users will access all results using the reporting and analytics user interface. It provides powerful reporting and analysis features designed to support business users who have working knowledge of benefits information.

The interactive reporting system includes dashboard-style reports organizing results to meet the needs of those who are responsible for benefits management and benefit strategy. As a single solution, it offers a combination of reporting to support routine trend reporting focused on cost, utilization and the prevalence of chronic conditions across your covered population. The solution, coupled with the support of your senior analyst and client manager, delivers the results for routing reporting and the ad hoc type of analysis and reporting necessary to further understand the data and what is driving trend from a population health and wellness perspective.

The standard visual and interactive dashboard capabilities included in Benefits Analytic Manager are flexible and configurable. Users can personalize them as needed to support analytic and reporting needs. The full complement of dashboard-style views of information provide a holistic value story through insights about the benefit offering experience that resides in your integrated data warehouse.

Interactive filters let the user compare population segments without running and exporting multiple reports. Point and click drill-down capabilities provide an easy user experience. Analytics and drill-down capabilities are available across various dimensions.

Each standard dashboard focuses on a specific analytic objective intended to provide answers to common questions quickly and easily. The dashboards provide the analytic insight needed to manage financial risk, measure utilization, evaluate benefits and promote health and wellness for your population.

1. Which components of your solution are in-house and which components are outsourced?

We design, develop and manage all components of our solution in-house. This includes the data integration and mapping tool used by our data managers, the underlying data warehouse and its design, the user-facing reporting and analytics platform and the experienced team previously described who will work directly with the State.

1. Describe any hardware and software that will be required by the State to support the proposed data warehouse solution.

State users will access the solution through a supported Web browser with a high-speed Internet connection. Supported browsers include Chrome, Microsoft Edge and Safari.

1. Describe your network and database configuration.
2. Databases and virtual network (VNet) resources are hosted in Microsoft Azure public cloud subscriptions.
3. Database – three main database layers:

a. Batch layer - intake/transformation/load processing from sources

b. Hosting layer - user-specified subsets of data for front end queries

c. Various app-layer DBs for driving UI components

3. Network

a. VNets are isolated by environment, with each major component having its own subnet for further isolation.

b. Each subnet has its own network security group (NSG) resource to control inbound and outbound traffic flows, conforming to minimum-use standards.

1. Where are the data housed (e.g., mainframe, client server, local, data center, cloud)?

The data warehouse is housed, and data is stored in a UnitedHealth Group secure data centers. The reporting data sets are housed in the Microsoft Azure public cloud within an Optum-managed location.

1. Describe the storage technology and an estimate of storage type and size required to support the State’s data warehouse.

We will use:

1. Azure blob storage for any files/backups at rest that are not in the database.
2. Size scales with need, with no material upper limits
3. Is your data warehouse “read-only” by default?

Yes. The underlying database for the data warehouse is read-only by default.

1. Describe your data management approach, including: data definitions and organization, data standards that you intend to adhere to within the warehouse, and how you intend to enforce data consistency standards across the warehouse.

As previously described in our response to item 1 within this section, our standard data model coupled with our preference to leverage established layouts, enables us to reuse data mappings and easily apply modifications when they are necessary. Should we engage with a vendor we have previously not worked with, we will provide our data elements list that provides definitions with the identification of required and optional attributes. It is our experience that most organizations have an existing layout that meets our solution’s data requirements. Please see **Attachment 1– Optum DW Data Elements List** for data definitions and organization of the data elements by subject area.

**Data Management Approach**

Our data management team uses our internal Extract Transform and Load (ETL) tool for file management, data integration and systematic quality review. The ETL tool organization is by data type to identify variances in quality across sources. The tool includes monitoring of the data integration process with alerts throughout the process based on the tollgates and established data thresholds. The integrity of the data is just as important to us as it is to you. Therefore, an extensive quality review is completed for each data file as part of initial implementation and carried forward into ongoing production updates.

The four phases of data quality focused validations and reviews include:

**I. Raw File Review –** Completed as part of the initial implementation of a data file. This is typically done with a test file that is provided by the data supplier. When implementation of a data feed has completed, raw data file validation will apply.

Your data manager will review each raw data feed file upon receipt for completeness by validating against the data supplier’s control totals.

* When an issue is detected with the file in this phase, we notify the data supplier and request a replacement file.
* We will notify the State project team if there is an impact to the timeline.

**II. Data Quality Assessment**

We perform a comprehensive data quality assessment on each data feed after the raw data has been mapped into our standard layout for the data type. This review evaluates each file for completeness, reasonability/acceptability, validity and accuracy using tools that scan data elements for data issues. This automated process, with information obtained from the State and the data suppliers will detect most errors.

The outcome of this phase is documentation of findings including discussion with the supplier, with notification to you. The data manager works directly with the data supplier to resolve the items that impact the use of the information for reporting and decision-making. We will keep you informed of the status of those discussions if nobody from your organization attends.

**Importance of Industry Standard Codes in Data Integrity**

The Optum employer data and analytics solution includes methodology enrichments built into the standard solution. We base the value-added results on standard claims attributes, associated industry-standard code sets and related mappings. We use the following types of attributes to support the methodology enrichments, which we describe in the following text:

* Industry-standard procedure codes (CPT4, HCPCS, Revenue Code) mapped to internally defined Service Types
* Place of Service mapped to CMS standard point-of-service (POS)
* Industry-standard CPT and HCPCS Procedure Modifiers
* National Drug Codes (NDC) mapped to Service Type = Drug (Pharmacy)

These standard industry code sets and related mappings are the foundation for the analytic enrichments. Our clinical coding experts update the underlying mappings regularly (no less than annually) for diagnostic, procedural and place of service industry-standard code sets. The NDC reference information is updated monthly.

**III. Data Integration Quality Review**

The ETL tool systematically manages the data integration quality review process using the following thresholds:

* Thresholds determined by data supplier
* State-informed thresholds
* Data type-specific quality rules based on industry-standard and experience driven benchmarks

Our internal ETL tool provides notification when a field does not meet the threshold or fails a quality rule. We also produce a report identifying potential data quality issues and proceed as described below:

* The data manager reviews the ETL quality report with the Optum team to determine next steps, if any. We document findings that do not affect reporting should they arise again.
* Issues that could have negative impact on reporting are further reviewed to identify root cause of the issue. The resolution process is determined based on the source of the issue:
* Raw data root cause**:** The data manager works directly with the data supplier to determine resolution. We share the proposed resolution with our team for the State. This team and the State will discuss for agreement on next steps. Depending on the severity of the issue and scope of impact, additional fees may apply.
* Integrated data root cause**:** The data manager determines how to resolve the issue. Optum will correct the issue and resume the process at no cost to you. The State is notified anytime there is an impact to the timeline.

**IV. Data Validation in Benefits Analytic Manager**

The final phase is validation of the data in the reporting platform system to make sure the level of quality aligns with what was observed in phase 2 and phase 3. The senior analyst will evaluate distribution of counts and amounts by time period, your reporting structure attributes, employee attributes, plan/program attributes, service classifications and Optum-derived results (value-added). We will investigate findings, if any, to determine root cause. We will take the necessary steps to resolve, which can include going back to the data supplier, and notify you as appropriate.

**Ongoing Data Management and Consistency**

As data integration experts, we assess the analytical impact of supplier-related data quality issues for their ability or inability to provide complete and accurate data and convey these impacts to our customers. Wherever possible, we recommend alternatives/workarounds to overcome any such obstacles. We ask our customers to provide feedback on how critical any resulting analytical shortcomings are for their specific objectives.

Throughout the data quality review process, we analyze data elements for completeness, accuracy, acceptability and validity. In addition, each data field has a set of benchmarks we can customize according to your population and reporting needs. Benchmarks fall into the following major categories: Accuracy, Completeness, Validity, Consistency, Reasonability and Timeliness. Our data integration team can detect most errors using ETL tool to scan all critical data elements for data issues. When detected, the team quickly troubleshoots to identify a root cause and works with the data suppliers to address any issue.

There are certain instances where data falling outside the threshold is still accurate based on customer reporting needs. Therefore, acceptable thresholds are set during the implementation and monitored during ongoing updates. We verify deviations from expected levels with the data supplier and investigate, as necessary, before loading new output to the data warehouse. We may ask you to help confirm observations to a data source if findings differ significantly from previous submissions or known caveats.

1. How flexible is your system architecture?

The proposed solution is a commercially available hosted solution with a proven production method that is that is stable and scalable. The solution currently supports the benefits information for more than 10 million covered individuals. We have more than 250 licensed users accessing the system on a regular basis. The technology support team can adjust the cloud computing power on demand. The Microsoft Azure real-time monitoring tools are configured to notify our network and support teams when usage is trending above or below a defined threshold. This helps them adjust the computing power based on observed usage.

1. Describe your experience receiving and integrating historical data files maintained by the previous data warehouse vendor, including output files such as risk scores and custom cohort lists.

Optum has experience transitioning customers from existing vendors. Our approach is to collaborate directly with you and the existing vendor to leverage existing artifacts and strategies. We accomplish this through meetings and conference calls with your existing vendor to understand the current reporting they implemented for you. Our team will then work directly with you to understand what is and is not working. This will help us tailor our solution to best support your analytic and reporting strategy.

While it is our preference is to receive the raw data as it was provided prior to processing by the prior vendor so we can build out our processes based on the file layout for the data source, we will work with the State and the current vendor to facilitate a smooth transition. This approach could affect our standard implementation timeline because it includes the assumption of establishing layouts and connectivity with the benefit data supplier as part of an early phase of the project.

While we have successfully implemented new customers through obtaining historical data from another data warehouse vendor, our experience is that it generally takes longer because it may be necessary to involve the original data supplier along the way. However, with your support and engagement, we can work through any challenges that occur.

1. Confirm all raw data received will be made available to the State upon request.

Confirmed.

1. Confirm all raw data will be preserved and not subject to retention policies.

Confirmed.

1. Describe how the State will have input on the data hierarchy and organization.

The underlying fields that define the contents of the interactive on-demand segmentation filters are sourced from your eligibility data, including demographics and State attributes that are necessary to support your reporting and analytic needs. The content hierarchy will be based on how your data is currently organized. The reporting structure includes a combination of standard and custom fields.

Standard fields include employee and organizational attributes common to most employers, such as work location, business unit, employee type and employment status. While we refer to them as standard fields, the content/values will be specific to the State.

The custom fields comprise 10 open fields designed to capture reporting dimensions specific to your work force, organization and plan information sourced from eligibility information. Our reporting structure supports the creation of groupings or rollups for these attributes to provide flexible summarizations of common attributes offering expanded use and flexibility. Further, these reporting fields can combine to create Custom Groups for cohort focused analysis adding additional attributes specific to the State.

1. Describe your capabilities for standardizing and integrating data from multiple sources.

Our data management team has nearly four decades of cumulative experience standardizing and integrating data across eligibility, medical, prescription drug, vision, behavioral and dental benefits from hundreds of different sources.

• **Eligibility/Enrollment:** Experience includes receiving data direct from the benefit sponsor, benefit administrators and health plans.

• **Claims:** Experience spans all national health plans including Kaiser, associations of plans, independent plans and many of the well-known regional plans, TPAs and on-site clinic vendors who submit claims for payment.

• **Non-claims type of data:** Our more than 15 years of experience integrating and standardizing other types of data includes lab results, health management programs, wellness programs, health assessment/survey results, short- and long-term disability, workers’ compensation and FMLA across more than 70 established and start-up vendors.

We also have extensive experience with vendor platform changes due to mergers, acquisitions and technology advancements.

1. Describe your methodology for linking data files provided without a unique ID (e.g. SSN).

To protect individual patient and employer identification, our solution integrates and links all data through the assignment of a unique individual identifier using our proprietary algorithm. This algorithm requires a unique person identifier to be present in all data received on behalf of the State in order to connect the unrelated data sources. Our algorithm was developed based on Social Security number (SSN) but is flexible and will accept non-SSN unique numerical identifiers.

When a benefits data supplier is not able to provide the State-defined identifier, we will work with the State and the data supplier(s) to identify a viable solution. Through our years of experience, when this challenge does present itself from time to time and with the exception of truly non-identifiable data, we are able to find a workable resolution.

1. Describe your capability for integrating multiple file types (flat file, different delimiters).

We have experience integrating multiple file types. Currently, we handle fixed-width flat files and delimited files (comma, pipe and so forth). Our data intake process is flexible, allowing our data managers to specify the file type included delimiter, when applicable as part of the file specific intake configuration.

1. Describe any limitations on file formats for sending and receiving data.

There is no limitation on file formats for sending and receiving data.

1. Explain how unstructured data elements (e.g., emails, imaged documents, forms, reports, etc.) are managed.

Optum does not request unstructured data elements such as emails, imaged documents, forms or reports from data suppliers. We have not encountered a situation where a data supplier provides these types of unstructured data.

1. What is your process for determining "clean" data before it is loaded into the databases?

Optum performs multiple levels of data quality review before loading data to the warehouse. As part of the implementation process, we will share financial and reporting structure information with the State to verify the data received from the vendors is complete and accurately represents your reporting structure. Additionally, we perform a series of data quality checks on each file individually, as well as in aggregate before loading, confirming the data meets expected tolerance levels.

If data fails our quality measures or we find issues or discrepancies during the process, we perform root-cause analyses immediately. We present issues to the data supplier, with a copy to the State (if desired) to determine the best course of action for resolution. Turnaround times will vary depending on the severity and complexity of the issue. We routinely emphasize the need for prompt resolution to the data suppliers and offer our assistance to collaborate with them to provide information/feedback for a timely resolution.

Additionally, once the data layout of the raw data file is finalized and outstanding issues are addressed, the layout and contents are deemed usable. This becomes the standard by which we expect data to be provided as we compare subsequent production files. Unexpected shifts or trends are shared with the data supplier and the State prior to loading data to the warehouse.

1. How do you reconcile the data in the database to the State’s records from its vendors (i.e., claims paid, enrollment counts)?

Optum balances the proposed solution’s detail to control totals provided by each data supplier. This occurs with each load of data during implementation and the ongoing production data updates. This is the first data validation step completed when logging a file.

These control totals are the basis for ongoing data validation at critical milestones throughout our established processes as outlined in the following text.

**Implementation Data Validation**

Optum provides control total expectation during the early phase of the implementation project. For example:

* Eligibility data is the total number of records; it can also include a breakout by coverage type.
* Claims-based data controls are most often the total number of records and the sum of paid dollars.

The steps within the process where we validate data against the control totals include:

* We compare the data supplier provided control total to the file contents of the received data file.
* We process data file through the ETL tool and compare ETL controls to the data supplier control information.
* The data manager generates a report to provide the total number of records and paid amounts by the paid month/year for customer validation and acceptance.
* After loading data into the data warehouse for use in reporting, we produce a report to compare the totals in the reporting tool to the totals validated by the customer.

**Production Control Total Process**

The production process follows the same general process with added trending month over month, such as:

* Comparison of the data supplier provided control total to the file contents of the received data file
* Process data file through ETL and compare ETL controls to the data supplier control information
* Compare current month control totals to previous month and baselines established during implementation as part of trend review
* After loading data to the proposed solution’s reporting tool, we produce a report to compare the totals in the reporting tool to the totals validated in ETL.

1. Describe how your system links data from multiple sources to one integrated record per individual in the data warehouse.

We create a unique 16-digit individual ID as part of our data integration process. The person-specific identifier received from the State data suppliers is scrambled and converted to a 10-digit number, which is the basis for our unique individual ID that is brought forward for reporting. This Optum-derived individual ID is the persistent key that connects the benefit results in the warehouse to that individual.

1. Describe your methodology for handling activity data on vendor files that cannot be linked to an existing census record.

The activity data not linked to an existing census record is quality reviewed, enriched and loaded to Benefits Analytic Manager for reporting and analysis in the same manner as activity linked to an existing census record. The only difference is with the report results. Activity data not linked to a census record is classified as unknown when slicing the report by eligibility sourced reporting structure attributes. The activity data is accessible from our Custom Reports ad hoc reporting component.

1. Describe your turnaround time regarding the following activities:
   1. Receipt of data from vendors
   2. Data validation
   3. Clean data uploaded to data warehouse
   4. Total turnaround time (when data is ready for the State to view and run reports)

Routine production data warehouse updates for a given period are typically completed with data available for reporting within eight business days from receipt of the final usable data file.

1. Optum requests data suppliers send their data files within 10 business days of the close of the month (or quarter). Based on our experience with your current benefit service providers, all data files should be received within 10 business days as expected.
2. Intake of raw data files, control total validation, data integration/processing, apply enrichments and quality reviews are completed for all data types within five business days assuming no data integrity issues are detected.
3. The integrated data including enrichments is loaded, and final data validation is completed within three business days.
4. The total turnaround time from the receipt of the final usable data file to data being available in Benefits Analytic Manager is eight business days.
5. Describe internal controls implemented to prevent and detect data integrity issues. For each control, designate if it is a manual or automated process and how errors are resolved.

As detailed in our response to **Question 8** in **Section 3.2**, our data management team uses our proprietary ETL tool for file management, data integration and systematic quality review. The tool includes monitoring of the data integration process. It alerts the data manager throughout the process based on the established tollgates and established data thresholds.

The following controls are implemented to prevent and detect data integrity issues.

**I. Raw File Review**

Our data team manually reviews each raw test data feed file upon receipt during initial implementation for completeness by validating the files against the data supplier’s control totals. If an issue is detected with the file in this phase, we notify the data supplier and request a replacement file.

II. **Data Quality Assessment**

We perform a comprehensive data quality assessment on each data feed after the raw data has been mapped into our standard layout for the data type. This detailed level quality review evaluates each file for completeness, reasonability/acceptability, validity and accuracy using automated tools to scan data elements for data issues.

The data manager works directly with the data supplier to resolve the items that impact the use of the information for reporting and decision-making.

III. **Data Integration Quality Review**

Out internal ETL tool manages the data integration quality review process using the following:

* Thresholds determined by data supplier
* Customer-informed thresholds
* Hundreds of data type-specific quality rules based on industry-standard benchmarks

The ETL tool systematically notifies the data manager when a field does not meet the threshold or fails a quality rule. We also produce a report identifying potential data quality issues and proceed as described below:

* The data manager reviews the ETL quality report with the Optum team to determine next steps, if any.
* We relay issues that do not affect reporting to the State and document accordingly.
* We will investigate issues that can have a negative impact on reporting further to identify root cause of the issue. The resolution process based on the source of the issue includes:
* Raw data root cause: The data manager works directly with the data supplier to determine resolution. We share the proposed resolution with the greater Optum team. This team and the State will discuss for agreement on next steps. In some cases, additional fees can apply.
* Integrated data root cause: The data manager determines how to resolve the issue. Optum will correct the issue and resume the process at no cost to you. We notify you when there is an impact to the timeline.

**IV. Data Validation in Benefits Analytic Manager**

The final validation phase in the update cycle confirms the data presented in the reporting system to aligns with the level of quality observed in phases 2 and 3. Your senior analyst will leverage predefined reports to validate distribution of counts and amounts by time period, the State’s reporting structure attributes, employee attributes, plan/program attributes, service classifications and Optum-derived results (value-added). We will investigate unexpected findings, if any, to determine root cause and take the necessary steps to resolve, which can include going back to the data supplier. We will notify the State when there is an impact to the warehouse update deliverable.

1. Describe the database update process. How do you communicate to clients when new data is uploaded and ready to be accessed?

We intake data from data suppliers using our SFTP gateway into our secure data center. After receiving a file, the data is logged and landed in the solution’s file structure and assessed for raw data validation. Upon receiving and validating the raw data file, all data is data integrated and processes through our ETL tool. This is our automated tool for data quality review, transformation and file management across eligibility, claims and case-level data types and suppliers. It monitors the processing of data feeds using customer- and carrier-specific information, as well as thousands of data quality rules. After we complete and verify the quality reviews, we apply Optum data enrichments.

When all data files for the production update have gone through the data validation process, we load the data to Benefits Analytic Manager where we apply additional enrichments. We perform a final data quality review in Benefits Analytic Manager before the account team notifies the customer, by email, the updated data is ready for reporting.

1. Describe what planned outages are required, including maintenance, backup cycles, and production changes. How do you ensure there is minimal downtime during normal working hours?

It is our practice to schedule system maintenance, including releases, during non-business hours. Optum averages eight scheduled releases per year requiring a minimal system outage, typically lasting between 30 minutes and two hours. We notify users through a notice on the login screen at least five business days prior to scheduled release requiring an outage. The notice will detail the duration of the outage.

A typical system outage will include, but is not limited to, at least one of the following:

* Routine system maintenance
* Report-level enhancements
* User interface enhancements
* Online help maintenance

1. How many years of data are typically maintained on the production database?

Five years of history plus the current year is typically maintained within the data warehouse and available for reporting.

We can support online access of up to 10 years of data within the reporting application.

There is no limit to the years of data that can be maintained in the underlying physical data warehouse.

1. How many years of data can be maintained in archive?

There is no limit to the number of years of historical data we can maintain in archive.

1. What is the process for retrieving or accessing data in the archive?

If you need to retrieve archived data, submit a request in writing to your client manager or senior analyst. They will facilitate getting the process imitated within our organization. We can generally have raw data to you faster than if we needed to reload it into the data warehouse, which takes approximately 10 business days from receipt of the written request.

1. The State may change vendors periodically, and the upload of data to be integrated may require changes. Please describe your ability to handle changes to integration processes.

The average length of incremental changes to the data warehouse for existing customers is typically 18 weeks, outlined by the following milestones. We will provide status to the State during the established status meetings:

* Data supplier meeting occurs (virtual).
* Optum and data supplier partner establish data layout and format (three weeks).
* Data supplier prepares and delivers test data file (three weeks).
* Optum performs data quality assessment; provides findings to data supplier; maps raw data to our standard layout (four weeks).
* We will communication data caveats that can affect reporting or integrity of the Optum value-add results to you (milestone).
* Data supplier prepares and delivers historical data file (three weeks).
* Optum integrates historical data, including additional quality review (four weeks).
* Integrated historical data is available for reporting (one week).
* We will provide virtual training, if needed, to your users.

1. Confirm you can integrate new file feeds as requested by the State. Explicitly define any related fees within your cost proposal.

Confirmed.

1. Describe your customer support services including your overall support model, business hours, user support and training, query assistance, data navigation, report creation, and notifications about changes to the system.

We provide a personal approach to support. We do not expect a general help desk or call center to support your related inquiries. The State’s customer team will be readily available to provide the technical support and analytic guidance your authorized users require to fully use the powerful reporting and analytic capabilities our solution provides. You will have direct access to your client manager and senior analyst Monday through Friday during normal business hours, 8 a.m. to 5:30 p.m. local time.

Your senior analyst is available to provide training, run reports for you and will answer your questions regarding query assistance and data navigation as soon as possible. Please see our response to **Question 3** in **Section 3.5 Implementation & Transition**, which details our new user training and on-going training model. We include these support services in the core offering under analytic support services.

In addition to the direct access to your customer team, the proposed solution includes both a user portal and online help resources to help answer questions, right at users’ fingertips.

1. Describe your system’s ability to integrate with a case-mix risk system (e.g. Johns Hopkins ACG) used to perform predictive modeling, risk stratification and risk scores, population health risk flags, diagnosis groupings, etc.

Included in the proposed solution are result generated from the Symmetry suite of clinically based methodologies. The units of analysis produced from this suite provide the case-mix results to support risk stratification, risk migration, risk groups and predictive modeling.

**Symmetry Episode Risk Groups (ERGs):**

Symmetry ERG is an episode-based risk assessment methodology designed to identify current and future utilization of services for treating the health conditions in your population, as well as demographic factors that influence future resource consumption. A retrospective risk score is assigned to each utilizing member and a prospective risk score to each enrolled member to support analysis. These individual risk scores are available to analyze in the reporting application and are used to calculate on-demand population average risk. To assist with analysis, the reporting application enriches the data and creates a reportable attribute, which groups individuals into one of three risk group cohorts: Low, Moderate or High.Pairing the risk-based results with analysis of catastrophic cases (high-cost claimants) will provide further insight into the health-related drivers of cost to determine what portion could be impacted by better chronic condition management or the need for polychronic care management, for example. Likewise, it assists in the identification of health-related costs that are not predictable such as premature births, major traffic accidents and sports related injuries.

Furthermore, applying a population relative cost factor such as a PMPM to the prospective risk score at an individual level and aggregating to a population level supports evaluate of predicted future cost for population with the highest relative health risk.

**Symmetry Episode Treatment Groups (ETGs):**

ETG is the condition classification and episode of care methodology for identifying diseases, illnesses and injuries present within the population on individuals for a given time period based on the diagnostic and related service information from medical and prescription drug claims. ETGs roll up into Major Practice Categories to support analysis from a care delivery perspective.

**Symmetry Evidence-Based Medicine Connect (EBM Connect):**

EBM Connect is the evidence-based measurement methodology that evaluates adherence and non-adherence to standard treatment guidelines at the individual level. The guidelines are based on published research and nationally recognized practice standards for chronic disease management. The guidelines span over 700 clinical rules published by NCQA, NQF, medical societies, professional organizations and other research organizations. The rules are organized into more than 130 conditions/cases segmented by rule classifications, including national standards, disease management, medication adherence, patient safety and care patterns.

Adherence is generally an indicator of conditions being optimally managed. However, the lack of adherence is indicative of gaps in care that identify the potential opportunity for intervention through direct mail, digital platforms and other forms of patient education. Non-adherence may indicate the need for a managed care program or a potential issue with an existing program that should be addressed for optimal management of chronic conditions.

1. Describe your case-mix system’s capabilities to map medical claim data into diagnostic categories.

The proposed solution includes two key methodologies and that produce case-mix results based on the diagnostic information captured in claims information.

**Admissions and Diagnosis Related Groups (DRGs):**

Our Admission methodology provides the complete cost of care (facility and physician) associated with a patient’s uninterrupted stay in an inpatient setting from admission to discharge. After the admission summary record is produced, a severity adjusted DRG is assigned to each admission to identify meaningful diagnostic groups, with similar resource consumption patterns. DRGs are organized into **Major Diagnostic Categories** (MDC) providing mutually exclusive principal diagnosis units of analysis.

**Episode Treatment Groups**, as described in our responses to the previous item (33) and the next item (35), produce the most comprehensive grouping of medical and prescription drug services into diagnosis categories.

On the opposite side of the spectrum related to diagnostic categories is the mapping of principle diagnoses into **Diagnostic Chapters** and **Diagnostic Categories** defined by the **Agency for Healthcare Research and Quality (AHRQ)**, an agency within the U.S. Department of Health and Human Services (HHS). The benefit of this mapping is a consistent method for associating cost and utilization of medical services to diagnostic groupings independent of prescription drug experience.

1. Describe your case-mix system’s capabilities to flag identified diseases and utilization patterns?

The powerful, clinical analytics built into our solution provide value-added metrics for evaluating the effectiveness of care for chronic conditions. Symmetry ETG, the market-leading episode of care methodology, links together all medical and prescription drug claims related to the treatment of a specific condition for a specific patient. This gives the ability to evaluate the services provided at a condition level.

ETG connects the services linked to each episode. This enables users to drill down and analyze the cost and utilization of specific services (e.g., emergency room visits, MRIs, selected drugs or any procedure of interest) as necessary to understand utilization of services associated with a specific disease that exists across members of the population.

Additionally, Symmetry EBM Connect results provide the information needed to evaluate the quality of care for chronic conditions as defined by evidence-based medicine treatment protocols.

1. Describe your case-mix system's capabilities to track individuals across inpatient and outpatient settings and across databases.

The Optum data warehouse service classification methodology organizes key pieces of information to classify services: Service Type, Place of Service, and specific codes and modifiers where appropriate for assignment and an associated service count.

* The methodology assigns each detail service record into mutually exclusive categories to support reporting and analysis of service utilization across common groupings of services, such as inpatient, outpatient, emergency department/room, urgent care, telemedicine, lab services and radiology/imaging. When the service category is assigned, the service dates from the service records are used to determine the service count for a service at the individual level.
* The result is a consistent identification of inpatient services, outpatient surgeries, office visits, emergency room visits, urgent care visits, telemedicine services, lab services and radiology/imaging services.

1. Describe your case-mix system’s capabilities to use predictive modeling to identify lead lists for case management.

The Optum-owned Symmetry methodologies embedded with the solution support predictive analytics. The member-level prospective risk score assigned by the ERG analytic methodology is a standard component of Benefits Analytic Manager.

The clinically based ERG prospective risk model results use the Symmetry ETG (sourced from medical and pharmacy claims experience) coupled with enrollment data. This enables the identification of overall health risk and the assessment of future risk and related resource consumption. The ETG identification of individuals with evidence of receiving care for a confirmed diagnosis is the basis for identifying lead lists for case management.

1. What data inputs influence risk scores? What types of risk scores are available? How often are risk scores updated?

Inputs to Symmetry ERG that influence risk include enrollment, demographics (age/gender), episodes of care comprised of medical and prescription drug experience and member-level severity. This severity is determined by the interactivity and impact to care that exists for an individual who has multiple chronic conditions each impacting the resource consumption and how whole person care is provided by their care team. Complications and comorbidities identified by the specific ETG will directly influence risk scores.

There are three risk model outputs available for reporting and analysis:

* **Retrospective** generates a risk score based on what is observed from a clinical condition perspective (ETG) in the previous 12 months, at the time the results are produced.
* **Prospective** predicts the relative resource consumption for an individual over the 12 months based on gender, age band and the health conditions (ETGs) for which the person has received treatment in the past 12 months.
* **Demographic** identifies the age band, plus gender relative risk score. This score should not be used in analytics. It is provided to serve as an indicator of risk when there is insufficient claims experience to create clinically relevant episodes of care.

The standard for 96 percent of our customers is to update the risk scores for the population twice annually, which is the basis for our standard offering. The remaining 4 percent have results for their population updated quarterly.

1. Describe your ability to create custom population health flags outside of the case-mix system.

Benefits Analytic Manager supports the creation of individual-level indicators through the built-in cohort capability. The benefit of this feature is the flexibility to use combinations of existing attributes to define the cohort group or a list of individuals obtained through analysis performed within the ad hoc reporting capability. The featured details are provided in our response to **Question 41**.

1. Describe how you translate medical coding data into user-friendly descriptions.

The Optum employer data and analytics solution includes methodology enrichments built into the standard solution. We base the value-added results on standard claims attributes, associated industry-standard code sets, and related mappings. The following types of attributes are used to support the methodology enrichments and described:

• Industry-standard procedure codes (CPT-4, HCPCS, Revenue Code) mapped to internally defined Service Types

• Place of Service mapped to CMS standard Place of Service

• Industry-standard CPT and HCPCS Procedure Modifiers

• National Drug Codes (NDC) mapped to Service Type Pharmacy

These standard industry code sets and related mappings are the foundation for the analytic enrichments described next. Our coding experts update the underlying mappings on a regular basis—no less than annually—for diagnostic, procedural and place of service industry standard code sets. The NDC reference information is updated monthly.

The descriptions associated with the standard code sets are typically understandable to a non-clinical user, meaning they are user-friendly. However, there are times when clinical abbreviations are supplied that are not readily known to a non-clinical person. This is why we include business-friendly mappings of information. Our team is well-versed in health care data, and we have resources we can tap into whenever there is a description that needs defining.

Additionally, we apply analytic methods to make eligibility and claims data make sense and support common analysis such as high-cost claimants. We call these catastrophic cases, as described below with additional value-added individual attributes.

**Individual Level**

In addition to service and clinically based enrichments, our solution includes member-level attributes providing valuable information to assist in understanding the dynamics of a population as it relates to coverage and benefit use. The following attributes are available for filtering and assigned to each individual:

* Catastrophic Case: This member-level indicator is assigned to individuals who exceed a threshold of accumulated costs from claims of $50,000 or $100,000 for the current time period. Users can define the assignment to be based on medical services only or medical and prescription drug services. This identification at the member level supports consistent analysis of what have been traditionally referred to as high-cost claimants.
* Catastrophic Case History (status): This attribute identifies whether there were prior indications that a member could become high cost in the reporting period. Possible attribute values include High Cost in Prior Period, Elevated Risk in the Prior Period or No Previous Indicators.
* Catastrophic Migration: This attribute describes the individual’s catastrophic status in the prior and current periods. Possible designations are catastrophic in the current and prior periods, catastrophic in prior and non-catastrophic in current, non-catastrophic in prior and catastrophic in current, or non-catastrophic in the current and prior periods.
* Continuous Enrollment: This indicator relative to enrollment is assigned to each individual enrolled in medical, drug and dental types of coverage for a specified time period. The population can be segmented using this indicator attribute for analysis and reporting. In addition to identifying continuous enrolled, other attribute values identify new enrollment, gap in enrollment, enrollment ended and enrollment unknown.
* Payment Bands: Each individual is assigned to the payment bands determined by the summarized paid amounts in the current time period. The non-pharmacy payment bands can be configured based on medical claims only or the combination of medical and prescription drug claims. Three bands are available:
* Payment Band (wide bands)
* Payment Band detail (narrower bands)
* Pharmacy payment band (prescription drug claims only)
* Risk Groups: Each individual is assigned to a Risk Group of High, Moderate, Low or No Risk (score) based on their retrospective risk score for the reporting period. The risk groupings are based on the ERG percentiles. High represents the top 10 percent. Moderate represents the 50th to 90th percentile. Low represents the 1 to 49th percentiles. No Risk represents individuals with no retrospective risk score.

1. Describe the functionality to create and manage cohort groups based on input criteria.

The on-demand population segmentation filters sourced from your eligibility data, including demographics, customer-specific reporting structure fields is available throughout Benefits Analytic Manager for filtering results, thereby creating a cohort group using existing attributes. These filters can be saved with a report template for future ease of use with the ability to modify when desired.

Users can perform custom cohort analysis through three key system capabilities.

1. The built-in population segmentation filters include more than 60 member-based attributes available on demand for filtering across benefit-specific results, thereby creating a cohort group using existing attributes. These filters can be saved with a report template for future ease of use with the ability to modify when desired.

This collection of attributes is sourced from your eligibility data, including demographics, customer-specific reporting structure fields and common attributes, such as business unit, work location, benefit plan, coverage tier and relationship. These attributes are specific to your organizational structure and work force. Also included are Optum generated results, such as continuously enrolled members, current and prior period high-cost members, member classifications by payment bands and the clinical conditions from ETG.

1. Establishing a cohort group by filtering results to specific list of individuals based on filter criteria defined by service or case-level attributes by data type. This is achieved through the multi-value select feature or through a file import of up to 50,000 values on any of the detail level attributes, such as member ID, procedure, diagnosis, provider type, program type, case type and ZIP codes. Saving the report design will allow you to reuse the filters for further analysis.
2. The Custom Groups advanced feature of Benefits Analytic Manager. There are two ways to use this functionality:
3. Through the application when it is necessary to create a new attribute for cohort identification and continue to access to the rest of the population.
4. As part of data set definition when the desire is to limit the entire data set to the contents of the cohort group.

Through this advanced functionality, a user uploads a table (Excel) with the necessary information to define the cohort group. It is also possible to create a unique grouping using an existing attribute, or a combination of one or more of the existing member-level attributes to define an attribute identifying a distinct grouping of members.

The process includes defining the name of the new attribute. When the new attribute is created through the tool, the resulting element can be used to filter results to that grouping and to generate detailed results for the cohort across all data types.

During the creation of Custom Groups in Benefits Analytic Manager, the user determines which value is assigned to each individual ID or subscriber ID. This provides the opportunity for random assignment of a control group using the results in Benefits Analytic Manager.

The user can use the application’s features for analyzing the study group to identify the desired common attributes of the study population that will be used to define the comparison group.

After the information is collated with assigned values for two or more groupings using Excel for example, it can be uploaded to create the new attribute with distinct groupings of individual IDs. Users can then use this new attribute as an attribute to report on or to apply as a filter for cohort analyses.

1. Describe your system’s capabilities to create individual risk profiles that could be used by onsite clinic health care providers to review recent care, diagnoses, risk score or band, and gaps in care. Provide an example.

Benefits Analytic Manager supports the business need for individual risk profiles as described. The common data element across all results necessary to connect utilization of services, related diagnostic information, member risk scores and risk grouping as well as gaps in care determined by non-adherence with care standards, is the persistent individual ID assigned to each individual during data integration. Please refer to **Attachment 2 – Benefits Analytic Manager Sample Individual Risk Profile** for an example.

1. Please describe your system’s capabilities for data mining for health care fraud and its ability to apply these processes over multiple providers.

Our system provides access to the detail service level fields across all claims data necessary to support fraud, waste, and abuse analysis and data mining. Your senior analyst will support you in the design and creation of ad hoc report(s) to support this type of analysis. When a user saves the report design (template), it can be shared with one or more authorized users within the reporting application.

Templates created and saved or shared can be reused. Through this capability, it is possible to leverage the templates over and over modifying the components of the reporting including geographic locations, workforce segmentations and more. Saving a version as they go, users can reuse these templates, modify and save (overwritten) or save with a new name thereby creating a new template. The saved and re-shared templates become the basis for further analysis across different types of services (rows), units of measurements (columns), place of service filters and provider ID filters. Users can include the attributes used as filters as a row or as a grouping of the results.

**3.3 Data Security**

1. How do you ensure the confidentiality and security of member information, medical records and data?

To protect sensitive customer data, UnitedHealth Group employs a combination of logical, physical, and procedural controls:

Logical access controls are implemented at the operating system, network, database, and/or application layers depending on the architecture of the application. These verify users are able to access only the data and functions required to perform their assigned duties. These controls also prevent users from being able to access operations systems file systems. Sensitive data is not stored on servers located within the DMZ network segments. Externally facing Web application servers obtain sensitive data through calls to servers located within the secure internal UnitedHealth Group network. Development, test, and production environments are separated physically to reduce the risk of accidental change or unauthorized access to production software and data.

Physical controls safeguard physical access to areas, media, and equipment that contain or process sensitive data is restricted to only authorized individuals.

Procedural controls include access management processes to verify users are granted access to only the minimum amount of data needed to perform their assigned duties, secure disposal of sensitive materials and media, and security awareness training to make sure users are aware of appropriate and secure practices.

1. Please describe your data encryption. Is sensitive data cryptographically hashed?

UnitedHealth Group requires that only industry-standard asymmetric/dual encryption protocols must be used for key exchange algorithms or cipher signing. Approved asymmetric/dual key encryption exchange algorithms include Rivest, Shamir, and Adelman (RSA), Elliptical Curve Diffie-Hellman Ephemeral (ECDHE), Elliptical Curve DiffieHellman (ECDH), and Diffie-Hellman Ephemeral (DHE) with a minimum of 2048 bits. Approved cipher signing algorithms include Rivest, Shamir, and Adelman (RSA), Elliptical Curve Digital Signature Algorithm (ECDSA), and Digital Signature Algorithm (DSA) with a minimum of 2048 bits. Symmetric encryption protocols must, at minimum, have a key length of 256 bits. Secure Hash Algorithms (SHA) must, at a minimum, have a message digest length of 256 bits. Transport Layer Security (TLS) is the approved protocol to establish a secure channel between systems, and to authenticate one or both systems.

1. Full/whole disk encryption is required on all UnitedHealth Group-owned or managed workstations, on all infrastructure devices within the United States (in accordance with local laws and regulations), and strongly encouraged for all other devices, in accordance with local laws and regulations. Encryption is required on all removable storage devices when Confidential or Protected information is saved to the devices.
2. Encryption is required for Protected data sent externally unless approved by the appropriate UnitedHealth Group Business Organization pursuant to the appropriate Legal, Compliance, or Privacy review processes.
3. Explain your system’s capabilities to safeguard privacy in compliance with Health Insurance Portability and Accountability Act (HIPAA) and other regulations.

UnitedHealth Group understands the responsibility it has to protect confidential and proprietary information and to maintain the availability and integrity of information systems and data assets. This commitment is integral to the relationships we have with customers, vendors, and other shareholders.

The UnitedHealth Group Privacy and Security Programs are designed to comply with federal, state privacy laws, and where applicable, international standards and regulations, including as applicable the Health Insurance Portability and Accountability Act (HIPAA), Health Information Technology for Economic and Clinical Health Act (HITECH), Gram-Leach-Bliley Act (GLBA), Childrens Online Privacy Protection Rule (COPPA) and state privacy laws.

1. Please provide a copy of your most recent SOC2 report as an attachment.

The SOC 2 report pertains to the Analytic Visualization and Reporting Capability (AVRC). Azure SOC 2 Report is available at

**https://docs.microsoft.com/en-us/microsoft-365/compliance/offering-soc?view=o365-worldwide.**

1. Confirm that your organization is compliant with all HITRUST CSF requirements? Is your organization HITRUST CSF Validated? Does your organization currently have a valid HITRUST CSF Certification?

Confirmed. Yes, we are certified, however, we do not release the certification externally. We are happy to discuss further and provide an attestation of certification.

1. Confirm your compliance with the cybersecurity insurance included in the contract.

Confirmed. UnitedHealth Group carries a cyber-liability insurance policy with limits of $10M each claim and aggregate.

1. Provide a bio for your Privacy or Compliance officer.

The responsibilities of the Chief Privacy Officer include:

* Leading enterprise privacy operations
* Developing privacy policies and procedures
* Developing and conducting training programs on privacy policies and procedures
* Receiving and responding to complaints concerning the privacy practices described in UnitedHealth Group's Notice of Privacy Practices
* Investigating and correcting violations of privacy policies and procedures
* Working with the Enterprise Information Security (EIS) Organization, segment, and regional Privacy Offices and Business Organizations in development and maintenance of the Security Policy and standards regarding data privacy
* Providing data privacy counsel to the organization
* Coordinating privacy compliance activities between Business Organizations and regions
* Providing consolidated reporting to the Chief Compliance and or Legal Officer

1. What type of security protection training do you conduct for employees?

It is the responsibility of the EIS Organization to provide UnitedHealth Group employees and contractors with ongoing information security awareness training and briefings.

The training and awareness program is subject to the following requirements:

* Security education is ongoing, and all employees and contractors will complete formal education requirements on an annual basis
* UnitedHealth Group must retain completion records for formal employee and contractor training sessions per the Enterprise Records and Information Management (ERIM) Data Retention Schedule. Training programs will be tailored to appropriate audiences. Security reminders will be sent out periodically on subjects including, but not limited to:
* Acceptable use of information assets and information technology (IT) systems
* Password and user identity (ID) practices
* Social engineering
* Internet access
* Email usage
* Who to contact for additional information
* Information classification guidelines
* UnitedHealth Group monitoring policies
* Overview of the EIS Program
* Legal/regulatory requirements

Security awareness training will:

• Integrate with new hire orientation

• Include a program on managing Protected Information

• Be reviewed on a periodic basis

1. Do you employ two-factor authentication before personnel can access sensitive records?

Multi-factor authentication (MFA) is an element of layered security controls to reduce risk associated with high-risk online activities. MFA must have at least two of the three following factors:

* Something the user knows, e.g., a passcode or PIN
* Something the user has, e.g., a smart card, hard token, or registered device
* Something the user is, e.g., a biometric characteristic, such as a fingerprint or voice imprint

All MFA patterns must be approved by Enterprise Information Security (EIS) prior to implementation.

All Optum Technology-issued laptops or workstations must require a UnitedHealth Group-issued second factor (factor two) to gain access to the device.

1. Who will have access to the State's data (and specifically access to sensitive member healthcare and financial data) in your organization?

Optum restricts direct access to the data in the State’s warehouse to internal staff for the purpose of general data management by database administrators. Temporary read-only access is provided to dedicated system support personnel when it is necessary.

Authorized licensed users of the reporting application are limited to the Optum team who supports the State and the licensed users identified by the State. These users are able to access the detail level information including claims financial data and health care data by diagnosis, service and date.

All Optum employees are required to comply with our corporate data security policies, related trainings and established policies and procedures for data management.

1. Will those individuals in your organization who have access to the State's data be assigned role-based security access? Will they be able to view details at the individual claim level?

Yes. Individuals in our organization will be assigned role-based security access to the State’s data, and only those individuals dedicated to data management activities and analytics for this solution will be granted access. These individuals will have the ability to view the claim level detail.

1. Will subcontractors be used to perform services related to the State’s data? If so, in what capacity?

Optum does not use subcontractors to perform services related to the State’s data. The scope of work Microsoft Azure provides as our cloud service provider is limited to providing the infrastructure managed by Optum employees.

1. How will you monitor and audit access to the data warehouse as well as detect and manage unauthorized access?

Per UnitedHealth Group Security Logging and Monitoring policies and standards, audit trail logs are enabled and protected from unauthorized access, modification, or destruction. Successful and failed login attempts and logoffs are activities that are logged, monitored, and retrievable for review by appropriate employees and contractors.

Logging systems are designed or configured to allow only the insertion of new records. Record deletion or updates is not allowed. Event logs collect sufficient detail to reconstruct past events and associate events to specific individuals and processes. These include, but are not limited to:

* Account ID creating the event
* Date and time of the event
* Type of event
* Success or failure of the event

1. How will you protect the data warehouse from malware and malicious attempts like phishing attacks and ransomware?

Network Intrusion Detection System (IDS) and Intrusion Prevention System (IPS) solutions are deployed within the UnitedHealth Group infrastructure to detect and prevent malicious traffic. The IDS/IPS systems detect known attack characteristics of malware and report into UnitedHealth Group’s formal incident response process. IPS systems prevent action of detected malicious traffic and report all incidents per the process.

UnitedHealth Group Optum Technology manages IDS/IPS devices throughout its infrastructure with a dedicated security team. All IDS/IPS devices report to a central management system for day-to-day support, maintenance, and signature updates. Signature updates are examined in coordination with signature releases. IDS/IPS signatures are updated, as needed, for each environment with a minimum of monthly.

UnitedHealth Group uses commercial IDS/IPS and subscribes to best practices for all known signatures and behaviors. Specific details on the internal workings of IDS and IPS are confidential and not supplied outside of UnitedHealth Group Optum Technology Security Services.

In addition, UnitedHealth Group Optum Technology monitors the following sites: CERT, ISS, Microsoft Patch Tuesday, Adobe Patch updates, iDefense Labs threat feed, and others for newly released vulnerabilities. All IDS/IPS' report to UnitedHealth Group's Security Event Information Management (SEIM) solutions for event correlation.

1. Describe the proposed security architecture and how it will secure communications between the data warehouse and any transactional databases.
2. Data is fully encrypted in transit and at rest, throughout the architecture.
3. Network security mentioned in previous question
4. Authentication required for all connections, with regular key rotation adherent to UnitedHealth Group standards.
5. How you will provide encryption services for data at rest?

The controls in place at UnitedHealth Group to protect data at rest on end user devices are described below.

Workstations/Removable Media and Portable Storage Devices/Mobile Devices: All UnitedHealth Group owned, and managed desktops/laptops have industry standard hard drive full disk encryption software installed as part of the device configuration. The software is consistent with National Institute of Standards & Technology (NIST) encryption standards for end user devices. UnitedHealth Group's standard workstation build has the writable functions for USB ports disabled. In addition, a typical user's laptop/desktop does not contain a writable CD/DVD component.

**Strategy – Data at Rest**

UnitedHealth Group invests significant resources in its information security program and uses a number of network, security monitoring and encryption technologies to protect our environment and maintain the confidentiality and integrity of the data and information entrusted to us. In both mainframe and distributed environments, UnitedHealth Group’s strategy is to encrypt data at rest without regard to its content or type at the storage media (device) level on both disk and tape.

The standard/methodology utilized for encryption is Data at Rest Encryption (DARE) using Self Encrypting Drives (SED) with a minimum AES-256 bit cypher key and validated FIPS 140-2 compliance.

DARE leverages a FIPS 140-2 compliant cryptographic module (RSA BSAFE) for key generation, hashing, and random number generation. The VNX2 D@RE hardware encryption has also received FIPS 140-2 level 1 certification.

1. How you will provide encryption services for data in transit?

UnitedHealth Group's Information Security Policies and Standards require that standard encryption solutions and protocols be employed in the external transmission of confidential and proprietary information. This includes without limitation:

* Secure Shell (SSH)
* Secure File Transfer Protocol (SFTP) (FTP over SSH)
* HTTPS (HTTP over Secure Sockets Layer {SSL})

Information Security Policies, standards, procedures, technical protocol and operation protocols maintain the control of secured information transmissions. Selected encryption algorithms used to protect data must be industry tested and peer-reviewed according to best practice standards (i.e., Advanced Encryption Standard {AES} 256 bits). This provides verification of strength against known attacks along with validation of sufficient key length and random key distribution to minimize brute force attack and mathematical analysis of keys.

In addition, UnitedHealth Group encryption technology standards require a minimum key length of 256 bits for secret (symmetric) encryption and 2,048 bits for public/private (asymmetric) encryption. These are the minimum standards. Longer key lengths may have been implemented within specific environments, based on risk. Secure hash algorithms are used to create a message digest with a minimum length of 256 bits.

1. How will you ensure the physical security to the data center and any corresponding facilities?

Physical security controls must be in to protect all non-public areas from unauthorized access. The controls for restricting access to non-public areas are commensurate with the risk to each area.

* Unauthorized individuals are prohibited from being in non-public areas.
* UnitedHealth Group's data centers are staffed with contracted security guard personnel 24 hours a day, seven days a week.
* The cameras must monitor the entrances to all Data Center and Critical Facilities and must be viewable by onsite security.
* Camera images must be viewable by off-site company personnel (e.g., Portfolio Operations Center or United Command Center).
* Servers with video images must be secured and separate from servers in the data center and a copy of the camera images must be stored off-site.

1. Describe the backup process and frequency of backup.

Company information must be backed up on a regularly scheduled basis to make sure Company information is available and limit data loss in the event of an outage. UnitedHealth Group Optum Technology or the business organization information technology groups are responsible for developing, documenting, and implementing backup schedules. This includes outlining the type of backup, interval, storage location, and the number of copies for all Company information under their control. Appropriate business and technical owners are accountable for determining what assets are backed up per UnitedHealth Group's Classification Levels.

**Backups may include, but are not limited to:**

* Master files databases
* Transactions files
* System programs/utilities
* Application software
* Parameter settings
* System documentation

UnitedHealth Group maintains sole custody of the data at all times by transmitting over our secured channels.

UnitedHealth Group is the sole entity in the chain of custody for the data, and has opted to encrypt the data, at the time the media is written, for risk mitigation purposes. The data encryption occurs at the time the tape media is created using industry accepted encryption algorithms (256-bit AES).

UnitedHealth Group invests significant resources in its information security program and uses various network, security monitoring, and encryption technologies to protect our environment and maintain the confidentiality and integrity of the data and information entrusted to us. In both mainframe and distributed environments, UnitedHealth Group’s strategy is to encrypt data at rest without regard to its content or type at the storage media (device) level on both disk and tape.

The primary and secondary locations are not fixed entities and can change based on business demands and operational need (e.g., growth, expansion or disaster recovery). In the mainframe environment, UnitedHealth Group uses geographically dispersed mainframes for "Rapid Recovery" that use UnitedHealth Group's internally secured networks to transmit the backup data. In this situation, UnitedHealth Group maintains sole custody of all data at both primary and secondary locations.

In addition, UnitedHealth Group has implemented several mitigating controls to protect data, such as in sourcing of its tape management facilities, implementing a Rapid Recovery solution to make sure data is protected and available should there be a situation requiring the recovery of data, on-site process for data eradication of disk drives that are replaced during maintenance, and data eradication on all decommissioned storage arrays to Department of Defense standards prior to leaving UnitedHealth Group's controlled facilities further mitigate the risk of exposure.

Operational Backups The Data Protection Infrastructure exists in all primary technology centers. Data is segregated by production/non-production and functional characteristics (i.e., Wintel, UNIX, Database, Archive).

**UnitedHealth Group's Backup Strategy includes:**

* + Systems and databases are backed up daily and weekly.
  + Database backups are retained for 28 days.
  + Deleted files are kept in the system for 90 days.
  + Connection to backup server is across the UnitedHealth Group Wide Area Network, data is written to the alternate location, eliminating the need for third-party off-site storage.
  + Primary use: Disaster Recovery of systems as defined by the Recovery Point Objective and the Recovery Time Objective (RPO and RTO) at an alternate site

**Retention/Preservation**

* Data retention requirements driven by Legal/Risk Information Management Policies
* Based on governance requirements and drive retention periods (Preservation orders, Sarbanes-Oxley Act (SOX), Health Insurance Portability and Accountability Act (HIPAA). These are separate from operational backups.

1. Describe your disaster recovery/backup plan, (i.e., time frame of lost data recreation). Describe how the data warehouse will recover work-in-progress in the event of a system failure.

UnitedHealth Group has developed an Enterprise Resiliency & Response Program that minimizes customer impact from disrupted service in a significant event or disaster, while aiding compliance to published regulatory guidelines. Plans are developed to address all natural and human-caused disasters (e.g., hurricanes, floods, fires, terrorism attacks, and disease pandemics).

The business continuity plans focus on critical business functions and planning for the worst-case scenario so that we can react quickly and efficiently, adding value to our business and customers through effective risk reduction, compliance with industry, contractual or regulatory standards, and safeguarding of operations and assets.

UnitedHealth Group's business impact analysis and subsequent business continuity plans are written to accommodate the following four scenarios:

* Loss of Facility: Complete interruption of facilities without access to its equipment, local data, and content. The interruption may impact a single site or multiple sites in a geographic region. Recovery from anything less than complete interruption will be achieved by using appropriate portions of the Plan.
* Loss of Critical Resources: Complete interruption with 100 percent loss of personnel within the first 24 hours and 50 percent loss of personnel long-term. The interruption may impact a single site or multiple sites in a geographic area. Recovery from anything less than complete interruption will be achieved by using appropriate portions of the Plan.
* Loss of Critical Systems: Complete interruption and/or access of critical systems and data located at the various UnitedHealth Group data centers for an extended period of time. Recovery from anything less than complete interruption will be achieved by using appropriate portions of the Plan.
* Loss of Critical Vendors: Complete interruption in a service or supply provided by a third-party vendor(s). Recovery from anything less than complete interruption will be achieved by using appropriate portions of the Plan.

The impact of the operational loss due to one, or all, of these scenarios is assessed as part of the original Business Impact Analysis and annually thereafter. The business continuity plans are updated at a minimum of twice annually and tested annually.

Business continuity plans are leveraged when needed to address all forms of emergencies, which may impact business operations, including short- and long-term events. Examples of short-term events include power outages and winter weather office closings. These plans have also been invoked to address more severe, long-term situations, such as building fire and major hurricanes.

Business functions classified as critical generally provide for near immediate failover of core services by leveraging geographically dispersed, redundant operations and maintaining a recovery time objective of 72 hours or less. The plans are written to respond to a disaster lasting a minimum of 90 days.

1. Confirm State data will only be used or included in book-of-business benchmarking data when combined with a significant amount of data from other sources to ensure confidentiality.

Confirmed.

1. Confirm State data will never be released in any form to anyone without the State’s consent.

Confirmed.

**3.4 User Access, Reporting, and Analytics**

1. Describe the hosted architecture and the secure means that will be used by State employees to access the data warehouse remotely.

The physical data warehouse is not accessible remotely by customers. To access reporting information, customers use our Benefits Analytic Manager reporting application. It is a fully hosted, Web-based reporting and analytics solution accessible through a secure HTTP Web address. The solution’s secure identity management service uses a Federated Identity and a hosted authentication service to identify and authenticate end users.

Enterprise controls are in place to restrict access to Benefits Analytic Manager to only licensed users. The State will designate the authorized users, and Optum will configure the application user accounts.

Users can access the reporting system 24 hours a day, seven days a week, except during scheduled weekend maintenance and releases.

1. If the data warehouse can be accessed via a web browser outside of the State’s network, explain how the secure communication between web servers and browsers will be managed.

The physical data warehouse database cannot be accessed as per our corporate policies. All results are access through the reporting application included with the solution as described in response to the previous item.

1. Describe a user's accessibility and tools to data, including front end access and back end database access. Is the system accessed by user desktop, browser-based, or other?

Licensed users access the reporting platform, Benefits Analytic Manager, from a supported Web browser using a secure connection as previously described in our response to item 1 within this section. As stated previously, backend database access is not permitted. Users will establish their own credentials to the application as part of initial user setup. They can manage their credentials without intervention by Optum.

1. Can you provide any offline usage capabilities?

The Web-based reporting and analytics application requires a high-speed Internet connection to access the results. Usage is limited to online connectivity although results can be exported to PowerPoint (PPT), PDF, Excel (XLS) or comma-separated value (CSV) during an active session and save them outside of the application according to the user’s access to network locations as provisioned by the State.

1. Describe your user license structure. Are there varying levels of access, such as read only, read / write, and or role-based profiles (i.e., different accessible data by user type)?

Yes. There are varying levels of access that are differentiated by the level of data that can be accessed as well as the features and capabilities within the reporting application, which we define as role-based tiered security. The role and tier can differ among individual users. All licensed users, including Optum employees, are limited to read-only access.

1. If you support role-based security access, what types of security access levels are offered?

Our solution currently supports the three role-based tiers.

**Executive:** Read-only access to summarized data with a subset of available report templates (most restrictive); aligns with State identified clinician access.

**Management:** Access to summarized data with all available report templates (no access to detail-level data); aligns with State identified plan administration non-PHI/PII access.

**Analyst:** Access to all summary and detail-level data\* (default setting); aligns with State identified plan administration PHI/PII access.

\* Detail-level data includes type of coverage by month, claim service-level detail and program case level detail.

1. Describe your query builder and fields from the raw data that would be accessible to the State. Provide an example of the user interface.

Benefits Analytic Manager includes an ad hoc reporting capability with drag-and-drop capabilities, enabling business users to define their own traditional row and column type of report results. Service-level details are easily accessible to answer basic and complex questions. Users can choose their rows and columns (attributes and measures) from the predefined list of elements specific to the type of data. In addition to choosing the rows and columns, users can filter on specific variables to narrow the focus of the results and create custom report-specific measures from the measures selected.

Please refer to **Attachment 3 – Benefits Analytic Manager Sample Custom Reports** for examples of the Custom Report capability, templates and build-your-own capability.

1. Confirm the ability to drill down to a level that will show individually identifiable data including pulling raw claims data.

Confirmed. Users with the Analyst tier can access the service level claim detail, including individual PII and PHI from within the Custom Reports component of Benefits Analytic Manager. These users can create their own reports selecting desired attributes and measures through the drag and drop functionality previously described. User defined reports can be saved and results can be exported on demand.

1. Can you restrict the ability to drill down to a level that will only show one member?

Yes. The Executive and Management tiers restrict the ability to drill down to a level that will only show one member. The Analyst tier has no restrictions other than protecting the identity using the Optum unique identifier and limiting PII and PHI to the minimum necessary.

1. Can you configure the reporting capability to set a minimum reporting sample size?

Select dashboard templates include a setting allowing the user to define an individual level threshold to prevent multiple PII elements from being exposed together, such as county and rare conditions.

1. Please describe your protocols for secure file sharing and describe the secure file sharing services you use/support.

Optum employees Inbound business to business files from a client to Optum must follow the UnitedHealth Group enterprise guidelines and intake policies for secure transfer. Authorized users can download aggregated report pages from the UI.

1. What is your current ability to provide standard reports on a regularly scheduled basis that are available for download?

The standard report templates available in Benefits Analytic Manager are available on demand. As users create personalized reports, they save them and organize them into their personal books (packages). The report definition and parameters are saved and can be applied to any set of data. The same concept applies to saved custom reports. While this capability does not directly relate to the traditional definition of a scheduled report, it provides an on-demand view of results that are ready for export directly to PPT or PDF for sharing. The capacity to schedule the export of a single report or package of reports is on our roadmap this year.

1. Describe your standard reporting packages or capabilities. Provide example reports.

Benefits Analytic Manager provides on-demand, dashboard-style report templates with interactivity, and the ability to export directly to PPT or PDF. These report templates are highly flexible and have personalization setting options, if users would like to select different measures than selected on the standard report template. After personalizing a template, users can save as a report and package together with other reports to support monthly/quarterly reporting that may change month over month. These saved reports can export directly to PPT or PDF for presenting or sharing a protected version electronically. Your client team can work with you to design a routine reporting package suited toward the State’s specific needs. Please see **Attachment 4 – Benefits Analytic Manager Sample Reporting Package** for examples of what these reports may look like.

Additionally, Optum provides an Annual Plan Review to customers. Please see **Attachment 5 – Benefits Analytic Manager Sample Annual Plan Review** for an example.

1. Describe the level of customization available to standard reports. Describe what slicers are available to be applied to standard reports for detailed data views.

Benefits Analytic Manager provides on-demand dashboard style templates with onscreen interactivity and personalization setting options to configure the report through the selection of displayed measures or attributes depending on the style of report. The onscreen interactivity includes the capability to filter results in real time using segmentation filters, also previously described in our response to **Questions 13** and **41** in section **3.2 Data Warehouse Services**. These built-in population segmentation filters include more than 60 member-based attributes available on demand for filtering across benefit-specific results.

After personalizing a template through settings and filters, users can save the report design as a template for future use complete with the filters and configuration setting changes providing the capability to modify them as needed.

Likewise, the self-service feature to design ad hoc (grid style) reports on demand by selecting rows/attributes and columns/measures with the option to apply data-specific attributes to filter the results only or filter and report using the selected attributes supports the State’s needs related to customizing design and applying data-driven slicers to view and export detailed data. More details about this feature are provided in our response to **Question 7** in section **3.4 User Access, Reporting, and Analytics** and the attachment referenced there (**Attachment 3 – Benefits Analytic Manager Sample Custom Reports).**

1. Describe how new reporting needs are proactively identified.

Our team members proactively monitor the resources available to them to give our customer’s knowledge to inform and guide their benefit strategy and design. We have a multi-faceted approach to how we gather and share this valuable knowledge and best practices with our customers.

It is our responsibility and duty to also stay aware of our customers’ needs through our Voice of the User and Voice of the Customer initiatives. This is a trusted method to obtain your feedback to inform our product roadmap, conducting satisfaction surveys and hosting webinars.

Our solution-specific Analytic Council powers the analytic advantage of partnering with Optum as your integrated benefits data warehouse partner. The internal council consists of cross-functional subject matter experts with representatives across our diverse teams, including client management, analysts, data management and product.

This council meets weekly to discuss trending topics related to our customers’ interests, market-driven changes and health care delivery. They also evaluate analytics and reporting developed for each specific customer to determine if a repeatable can be created and applied across customers to discover and share valuable insights.

The team supporting the State will rely on the Analytic Council as the first stop for analytics and work across Optum and to bring the necessary expertise to benefit you the most.

1. Describe your in-house resources to ensure reports are clinically and statistically valid.

We combine our extensive clinical and industry experience with technology to confirm the statistical validity and clinical relevance is both valid and appropriate. Peer reviews are part of our standard process. Our internal Analytic Council reviews and approvals are newly developed analytics and deliverables. From a product perspective, we have the experience on our team and have access to some of the most respected subject matter professionals in health informatics today. Analytically speaking, we leverage the resources and tools provided internally through our Enterprise Analytics team. Clinical data analytics are core competencies of Optum and our data warehouse team.

1. Describe the data formats and data languages used in the data warehouse to support data exchange and presentation. Does your data warehouse support all of the following formats: HTML, PDF, XML, Excel, comma-separated values (CSV), and PPT?

Data exchange and presentation from a reporting perspective is supported as follows:

* Optum and the State users can leverage the functionality to share report templates within the reporting application. Technically, data is not exchanged. Instead the functionality allows one user to provide a copy of their template to another authorized user. The user who received the copy can use it to generate results. They can also edit the template, save it and share it if desired.
* Users can export report results through the reporting application leveraging PDF, PPT, XLS and CSV as applicable for the type of report.
* On the data management side, multiple file types as supported and have changed over time as technology has changed. Generally, the input data files are either fixed-width flat files or delimited files (comma, pipe, etc.); however we can accommodate other types.

1. Describe your system’s ability to produce interactive dashboards. Would it allow the State’s users to drill down for more details on each item? Provide example screenshots.

As outlined in response to **Questions** **13** and **14** of **Section 3.4,** Benefits Analytic Manager’s dashboard-style report templates are interactive and highly configurable.

Interactive filters let the user compare and contrast population segments without running and exporting multiple reports. Point and click drill-down capabilities provide an easy user experience. Analytics and drill-down capabilities are available across numerous dimensions.

Please see **Attachment 6 – Benefits Analytic Manager Sample Reports**.

1. Describe the analytics capabilities you provide beyond reporting.

Optum includes analytic support services in addition to reporting as part of our core solution. The services are supported by the analytic results we include as part of our overall solution. In the context of analytic capabilities, the State will benefit from our comprehensive customer support, analytic support and the expertise that is represented by our internal Analytic Council and the many resources we can leverage on behalf of the State across our broad organization. Three key areas where our analytic capabilities are highlighted are:

* **Customer Support:** Our personal support model enables a collaborative relationship between the State users and our team. We acknowledge your resource capacity is dynamic, and our customer team will collaborate with you to provide the level of support you need. We will make sure that you are maximizing the value of your investment. Please refer to **Attachment 7 – Optum Benefits Analytic Manager – Analytic Results** for a description of the analytic results included in our solution that are routinely used to meet many needs of benefit sponsors like the State.
* **Special Studies:** Routine analytics can often evolve into a special study. When this occurs, your customer team collaborates with our consultative experts. Optum’s consultants have spent their careers working with employers and their partners to help turn their data into actionable strategies and helping execute, measure and refine these strategies ongoing. These valuable resources have extensive insight into employer needs and challenges. Most importantly, our consultant’s partner with customers to help them proactively enhance their benefit offerings and create solutions best meet their needs.
* **Benefits Analytic Manager Analytic Council:** Our solution-specific Analytic Council drives the analytic advantage of partnering with Optum as your integrated benefits data warehouse partner. The internal council consists of cross-functional subject matter experts with representatives across our diverse teams, including client management, analysts, data management and product. Their mission is to collaborate, share and create analytic content that shows the value of our customer’s investment. The goal is to provide our customers with analytic insights that are insightful and can be actionable. This council meets weekly to discuss trending topics related to our customers’ interests, market-driven changes and health care delivery. They also evaluate analytics and reporting developed for each specific customer to determine if there can be a repeatable process created and applied across customers to discover and share valuable insights. Your customer team relies on the Analytic Council as the first stop for analytics and work across Optum, to bring you the necessary expertise that will benefit you the most.

1. Describe your ability to provide comparative benchmarks for the State?

Optum’s solution includes several different cuts for normative comparison. Actual experience represented in results is compared to system-generated normative values derived from our book-of-business experience. The Normative Industry option provides three high-level industry segment options that can be changed on demand within the application. They are:

* **All industries:** Includes the combination of service and manufacturing
* **Services:** Includes service-based organization including government, religious, education, financial, health care, transportation and other service companies based on Standard Industrial Classification (SIC)
* **Manufacturing:** Includes general manufacturing, high tech and other manufacturing companies based on SIC

Within the reporting application, when a user filters the data set on standard characteristics, such as age, gender, geographic dispersion and benefit plan design, the normative value will adjust for the population.

Normative values area provided for rated type of metrics using membership or services as the denominator for medical and prescription drug results. Examples include per employee per month (PEPM), per employee per year (PEPY), per member per month (PMPM), per member per year (PMPY), per 1,000, per member, per visit, per admission and per script.

In addition to claims-based cost and utilization information, we provide normative comparisons anchored by analytic methodology results. These include service categories, DRG (admission), and Symmetry’s ETG, ERG and EBM Connect. Cost, price and service normative information is available at the detailed service category and clinical condition levels.

Your senior analyst also can support requests for custom benchmarks through the analytic services included in the overall solution.

1. What are your reporting system’s abilities to include data on social determinants of health (i.e., income, education level, etc.)? What data sources do you incorporate for these measures?

The State population-specific social determinants of health (SDOH) is supported through the analytic support services included in our proposed solution. We currently provide SDOH member indices to support our customer’s business needs.

The senior analyst supporting the State will leverage member-level data from the data warehouse in the generation of member indices that are imported into the application through the Custom Groups feature supporting cohort analyses. The proprietary Optum SDOH analytic models are routinely evaluated and updated to provide optimal results for the benefit of our customers.

Our model leverages member demographic information including date of birth and gender, location information including address with five-digit, unique individual ID assigned by Optum and name to produce the member indices. Once these indices are brought into the application, they are available as filters to evaluate and analyze the results across the measures and attributes available for reporting.

1. Describe your system’s capabilities to compare health care costs to Medicare and reprice claims using Medicare reimbursement rules. What functionality does your system have to assist the state in validating pricing under a Medicare based Direct Providing Pricing Arrangement (see RFS 21-66772)?

This type of analysis is supported through our analytic support where we leverage the functionality of Benefits Analytic Manager to export information at a procedural level of detail to support the comparison. Our approach is to partner and collaborate with the State to identify the best approach to support your reporting and analytic needs whether they are routine, ad hoc or a special project that could be one time or recurring.

For example, we have years of experience supporting state and federal government agencies in annual rate setting. Through the extensive resources within the larger Optum organization, your data warehouse and analytics support team are uniquely positioned to leverage subject matter experts across the services Optum provides and the markets Optum serves to fully support the State’s needs, such as this.

1. Describe your experience working with Medicare data to provide actionable insights for your clients. Provide sample reports.

We provide innovative reporting solutions to our customers to help them with strategic plan design, wellness strategies and total health care cost savings for their Medicare populations and the unique challenges facing them.

One such example involves our internal Analytics Council and COVID-19 data. We delivered three different phases of COVID-19 reporting to all current customers during 2020, and this work continues today. The reporting focused on identifying those in a population at higher risk for developing severe complications if infected with COVID-19 (based on current conditions), those with a confirmed COVID-19 diagnosis and their associated costs, and the impact to cost and utilization across service categories for the entire population. Please see **Attachment 8 – Benefits Analytic Manager COVID19 Confirmed Cases and Utilization Trend** for an example of the COVID-19 reporting delivered to customers.

While the focus was on COVID-19 in 2020, we also worked with our customers to perform targeted analysis based on their data. Analysis examples focused on providing actionable insights for a Medicare population include the following:

• Diabetes Disease Progression

• Social Determinants of Health

• Top Cancer Conditions

• Impact of Depression

• Specialty Drugs

Additionally, please see **Attachment 9 – Benefits Analytic Manager Analytic Examples** for the full summary of the analyses.

1. Describe your system’s ability to interface with third-party Medicare repricing software.

We support benefit sponsor’s needs to provide extracts directly to their business partners, which is not unlike this item. Last year we delivered more than 80 extracts, either directly to our customers or to a third party on their behalf. Extracts can be sourced through the reporting application or through a direct extract from the underlying database (warehouse).

Benefits Analytic Manager sourced:

• Your users or the Optum team can pull data directly from Benefits Analytic Manager using the Custom Reports capability. This is recommended when the number of records/rows does not exceed one million.

Custom Data Extracts:

• We have extensive experience providing customer-specific data extracts in support of our customers’ initiatives and analytic needs.

• All data extracts are subject to the HIPAA minimal use requirements. The special request extracts must comply with relevant non-disclosure and data use agreements. Data suppliers can and do restrict Optum from sharing their confidential information to any third party, which Optum will strictly enforce. Additional fees may apply, depending on the complexity and type of extract required.

1. How do you comply with legal requirements for access to those with disabilities?

The proposed solution assesses its digital offerings against Web Content Accessibility Guidelines (WCAG) 2.0 AA standards. Our user experience designers assess WCAG 2.0 AA standards while also adhering to accessibility fundamentals. such as tab order, color contrast, hierarchy, alt text, among others. Our engineers are also familiar with accessibility standards and are expected to adhere to them in their development. Here is the statement on accessibility that appears within our application through a hyperlinked footer.

Graphical user interface, text, application, email

Description automatically generated

**3.5 Implementation & Transition**

1. Attach an implementation work plan that outlines all key steps for plan implementation, responsibilities (vendor and employer) and expected timeframes based on the effective date. Clearly indicate the proposed implementation commencement date in anticipation of a 1/1/2022 effective date.

Please see **Attachment 10 – High Level Std Project Timeline Optum DW**

1. Describe your implementation testing. Please describe:
   1. your approach and frequency to testing online portals before and after “go live”.
   2. your processes for tracking, managing, and reporting system issues during testing.
   3. your approach for re‐testing failed test cases after system modification.
   4. your approach for validating end user documentation and business process.
   5. your approach to testing data backup procedures.

The testing that occurs implementation of a new customer is primarily focused on data quality and integrity. Our established processes include extensive data reviews and validation throughout the implementation project using tools designed to support automated and manual validation. If issues are encountered during data integration, processing and load, a ticket is entered in our enterprise version of ServiceNow. The engineering team who manage our technology tools triage the issue for resolution as quickly as possible. Generally speaking, issues encountered during integration and processing do not require code changes and are resolved within 24 hours.

The reporting application provides access to the results from the data layer (data warehouse).

1. The online portal is a production cloud-enabled application. It is tested with each production release. Additionally, it is accessed by the members of the product team and the analyst team daily.
2. We use an enterprise version of ServiceNow to report and track reporting system issues. Incidents are entered by an Optum employee dedicated to our data warehouse solution. Each incident is triaged by a member of our product team and when confirmed, assigned to the engineering team to investigate and identify root cause. When engineering confirms the need for a coding change, a ticket is created in our enterprise Rally system (formerly CA Agile Central) to manage and track the work. Our product team tracks and reports on the status of the code change from the information in provided in the Rally ticket and/or corresponding user story(s).
3. Prior to a code change being released to production, a member of our product team tests in a lower environment during the Use Acceptance Testing phase. If the test case fails, a new Rally ticket is entered and must be resolved prior to the code change being released to production. Once the ticket has been updated to reflect ready for UAT, the use case is re-tested. Upon a successful re-test, the code change is approved for release to production. This is the same process that is followed for our internally developed and managed ETL tool.
4. End user documentation outside of the reporting system’s online help content is created and maintained by our product team. It is tested and validated by the analyst team on behalf of all users. Online help content is validated by our product team as part of the pre-release UAT. Our operational business processes are reviewed every six months through interviews with process users and process owners.
5. The data backup procedures for the data warehouse are managed through the Relational Database Management System (RDBMS) and server backups which occur daily for both. They are routinely validated/tested. The data backup procedures for the reporting system are managed through Microsoft Azure tools and apps.
6. Please provide a detailed description of the training schedule for State users prior to and during implementation (i.e., on-site, virtual, etc.).

Our new customer training program promotes maximum use of Benefits Analytic Manager to realize full value using a customer-focused approach.

Training best practice along with our experience and customer feedback support our approach to provide training in shorter and more focused sessions spread out over a planned duration. This approach enables users to digest the information from one session and apply it to the next session. In some cases, they can put what they have learned into practice before moving on to subsequent sessions. With this learning approach, we deliver a holistic plan for learning, including concepts, customer-specific reporting structure, navigation, methodologies and basic reporting features before more advanced training sessions that can involve hands-on exercises.

The timing of the sessions is determined through collaborative planning between the State and the Optum senior analyst. When appropriate, we infuse training into a working session during the implementation project.

* **Session 1:** A virtual 30-minute introduction to the User Portal resources.
* **Sessions 2 through 5:** These are typically delivered in two to three 60-minute virtual sessions. These sessions introduce customer-specific reporting attributes, data warehouse content, data set configuration best practices, overall navigation, custom (ad hoc) report capabilities, library templates, global functionality and analytic enrichment methodologies.
* **Session 6:** This final training session includes in-depth and hands-on training designed to meet the State’s user’s needs. Delivery of this session has historically been in-person providing six hours of instruction. However, with the global pandemic, it has been modified to support virtual learning by providing the instruction in parts spanning one or more weeks.

We promote a just-in-time approach to these topics to promote the best learning and retention. We find that it is best to focus on the basics at first and then offer working sessions to provide our assistance to new users. Your senior analyst will work with you to determine the appropriate timing and cadence for training new users.

Additionally, ongoing virtual training is provided by your analyst as needed. The User Portal is another resource where users can access job aids, recorded webinars, self-paced learning and much more.

1. Please describe your ongoing user support services and identify those services that will be available to the State's users.

Our support model is designed to foster a personal relationship between the State’s users and our senior analyst who provides technical application and analytic support services. These services include day-to-day user support; routine and ad-hoc reporting; custom report development; ongoing live web-based training upon request analytic guidance and advice; report results interpretation; and virtual working sessions.

1. Will you provide the State’s team with access to nonproduction environments during implementation?

Optum does not permit customer direct access to the underlying databases and nonproduction environments. However, throughout the implementation process as outlined in our response to **Question 2**. within **Section 3.5 Implementation & Transition**, there are several data validation steps requiring the State’s review and acceptance.

1. What are your policies for data return or destruction upon termination?

The governing corporate policy for customer information is retaining data for the minimum time necessary to meet legal, regulatory and operational requirements. Information can be destroyed when we fulfill these retention obligations.

For terminated customers, we generally destroy or return data in the customer-specific warehouse, raw data files and any archived data within 30 days of the termination date. In some cases, the Non-disclosure Agreement (NDA) we have with a data supplier can require that we return the raw data files to them.

1. Please describe the process for transitioning hosting another provider at the end of the contract period (if not renewed)?

**Transition Services**

Optum will provide transition services to the State in support of an orderly transition to a new service provider to include the following:

* + Participation in transition conference calls with the State and the new vendor
  + Providing the raw data as it was received to the State or the new vendor with consents as required by the data supplier
  + Providing consultative services to the State as requested for data format and conversion
  + Assisting in all respects of these transition of services with little or no interruption as practicable to the State

No additional fees shall be assessed for these transition services. Optum agrees to provide additional transition services during and following the termination/expiration of the data warehousing and analytic services as reasonably requested by the State for a fee that is mutually agreed upon at the time of such request.

**User Access Post-termination**

Our standard approach is to terminate access at the end of the termination date or expiration date of our agreement for data warehousing and analytic services. Should the State request continued access to the static results within the data warehouse through the reporting application, we will mutually determine a time period and fee agreeable to be paid by the State to provide State-licensed users continued access.

**APPENDIX – Optum Attachments**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attachment Name** (in order of appearance) | **Section** | **Question** | **Page Number** |
| Attachment 1 – Optum DW Data Elements List | 3.2 | 8 | 6 |
| Attachment 2 – Benefits Analytic Manager Sample Individual Risk Profile | 3.2 | 42 | 24 |
| Attachment 3– Benefits Analytic Manager Sample Custom Reports | 3.4 | 7, 14 | 37, 39 |
| Attachment 4 – Benefits Analytic Manager Sample Reporting Package | 3.4 | 13 | 38 |
| Attachment 5– Benefits Analytic Manager Sample Annual Plan Review | 3.4 | 13 | 38 |
| Attachment 6 – Benefits Analytic Manager Sample Reports | 3.4 | 18 | 40 |
| Attachment 7 – Optum Benefits Analytic Manager – Analytic Results | 3.4 | 19 | 40, 41 |
| Attachment 8 – Benefits Analytic Manager COVID 19 Confirmed Cases and Utilization Trend | 3.4 | 23 | 43 |
| Attachment 9 – Benefits Analytic Manager Analytic Examples | 3.4 | 23 | 43 |
| Attachment 10 – High Level Std Project Timeline Optum DW | 3.5 | 1 | 45 |