State of Arkansas

Department of Human Services

Division of Medical Services

Request for Information for: EPISODE-BASED PAYMENT SYSTEM (EBPS) TO SUPPORT PAYMENT IMPROVEMENT INITIATIVE
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Section 1 – Treo Introduction and Overview

Treo Solutions is pleased to respond to this RFI issued by Arkansas Department of Human Services Division of Medical Services (DMS) for an episode-based payment system (EBPS) to support payment improvement initiative. Treo Solutions—The Healthcare Transformation Company - has been working with health plans, states and provider systems for the past 10 years to develop analytic platforms that support both payment and delivery system reform.

During the past decade, Treo has assisted numerous clients, including integrated delivery systems and Pioneer ACOs, state agencies and private payers, to transform the way healthcare is delivered and paid for – to develop total cost-of-care programs and make the shift from a system that is procedure-centric to one that is people-centric based on the health of populations. Currently, Treo works with close to 30 commercial payers, two state agencies, and two organizations that are joint public/private collaboratives. Additionally, Treo works with more than 50 hospital systems across the country and supports two-nationally recognized medical home projects. The services Treo provides on behalf of these clients impact more than 38 million covered lives.

Specifically, Treo is working with:

Blue Cross Blue Shield of Arkansas (BCBSAR). BCBS Arkansas is one of 12 Blues plans that is a Treo client. Together, Treo and BCBSAR have worked diligently over the past two years to appropriately prepare claims data for analysis and payment transformation implementation. After building a robust platform for BCBSAR, which includes online access for provider and member analytics and tools. Treo currently does quarterly data refreshes. The Treo provider analytic tool, along with our consulting services, is used by BCBSAR in direct hospital negotiations; through this process, BCBSAR works with Treo and our consulting team to develop rates and weights and design the roll-out strategy with the hospitals. Treo and BCBSAR are currently looking to further engage in regional ACO opportunities.

Colorado. Treo is the Statewide Data Analytic Contractor (SDAC) for Colorado’s Accountable Care Collaborative (ACC) Program initiated in 2011. This is a unique collaborative, as the ACC Program is being held accountable to total cost-of-care (TCC) targets. In other words, the program will continue to be funded as long as it can demonstrate specific savings on a total cost-of-care basis. The primary goals of the ACC are to [1] improve health outcomes through a coordinated, client/family-centered system that proactively addresses clients’ health needs, and [2] control costs by reducing avoidable, duplicative, variable, and inappropriate utilization. As the SDAC, Treo calculates program performance and, through a web-based portal, shares that performance information with key stakeholders at the State as well as the delivery systems that have taken accountability for managing the targeted population. Colorado is also a contract awardee for the State Demonstrations to Integrate Care for Dual Eligible Individuals. Treo serves as Colorado’s custodian for the applicable Medicare Parts A, B and D data from CMS and will be incorporating that data into the SDAC and, ultimately the web-based portal for program analysis and stakeholder reporting. Treo also serves on the Payment Transformation subcommittee to the Accountable Care Collaborative, providing technical guidance on a number of payment reform initiatives.

Community Care of North Carolina (CCNC). CCNC has been managing the care of Medicaid recipients since 1998. Through its 14 Community Care networks covering all 100 counties in the state, CCNC serves more than one million enrollees (one million Medicaid recipients and 70,000 low-income, uninsured residents through the HealthNet Program). Treo provides the underlying risk adjustment for the more than one million Medicaid beneficiaries in this program. In addition to onboarding and enhancing the data with several risk-adjusted metrics, Treo’s scope of work includes overall program reporting (including patient segmentation reporting to identify care management opportunities based on the likelihood of potentially preventable events) and program evaluation. Treo’s analytic deliverables include a web-based analytic tool, provider reporting, and role-based dashboard reporting through an online portal.
Adirondack Health Institute (AHI). AHI was selected to participate in one of the eight Multi-Payer Advanced Primary Care Practice Demonstration projects (MAPCP) sponsored by CMS and the Center for Medicare and Medicaid Innovation. Similar to the Colorado ACC, AHI is accountable for total cost-of-care savings, with a targeted program break-even during year three of a five-year cycle and a positive ROI with savings in the fourth and fifth years. Treo serves as the data repository for this multi-payer initiative, which includes seven commercial plans as well as Medicare and New York State Medicaid. For this project, Treo has created a single data warehouse and web-based reporting platform that supports the program’s goals of improving care, expanding access, and containing costs. Treo is responsible for onboarding, normalizing, and enhancing the data from all participating payers. As part of this process, Treo risk adjusts the data for meaningful reporting in support of specific, key performance indicators (KPIs). The data is then made available to each of the payers, each of the provider ‘pods,’ and each of the primary care providers through a web portal that is role-based. Each of these stakeholders can review program KPIs through this portal for the respective population cohorts for whom they are accountable. Treo is also accountable to AHI for partnering with the local Regional Health Information Organization (RHIO) for the development of meaningful crossover analytics that leverage the historical longitudinal value of the claims data with the detail rich and timely data that is currently transacted through that RHIO.

Section 2 – Response Overview

The US healthcare system is currently at a crossroads. As Arkansas DMS alludes to in the RFI, the current fee-for-service (FFS) payment system has encouraged overutilization and discouraged coordination of care across settings. Consequently, costs have spiraled out of control with no discernable improvement in overall quality or population health. It is clear that the current system is unsustainable – for payers, providers, employers, and the beneficiaries who require care. Treo recognizes this problem and provides solutions that help our clients transition from a FFS model to models that pay for value. Our clients use Treo’s analytic platform to implement strategies that focus on payment models, such as episode payments—regardless of payment model, these analyses all start with a Total Cost-of-Care (TCC) perspective.

To control costs and promote quality, new payment models focused on TCC are being developed to align provider incentives throughout the healthcare continuum.

Total Cost-of-Care is a measure of all healthcare-related expenses for a specific population and it is the only measure that informs whether or not program objectives are being met in the aggregate and how the total cost of healthcare is being impacted. Establishing Total Cost-of-Care goals and thresholds is a necessary step to support the design, implementation and evaluation of any delivery or payment reform initiative, including episode payments; bundled payments; year-long episodes for the chronically ill; shared savings; capitation payments; “carve-outs” like behavioral health; and care management fees for medical home initiatives Total Cost-of-Care.

From the RFI, we understand that DMS is committed to controlling costs and increasing quality by expanding episodes to cover 75%+ of medical spend over the next three to four years. In order to accomplish these aggressive goals, it is imperative that DMS select an episode solution that is scalable, flexible, and leverages Total Cost-of-Care as the dependent variable against which any program can be measured. This is especially true when considering different episode payment models, such as:

Event-Based Episodes (In an event, or disease-based, approach, episodes are categorized by separate and distinct events or disease states. In an event-based approach, a single person can be assigned to multiple episodes, all with unique and distinct care protocols. Examples include total hip and knee replacement, upper respiratory infections, and perinatal and chronic heart failure).
• Understanding Total Cost-of-Care when evaluating event-based episodes will ensure program costs outside the episode – yet potentially impacted by the episode – are considered (e.g. any service or cost shifting).
• Total Cost-of-Care offers a perspective on any changes in utilization (e.g. has the program created unintentional consequences by offsetting lower, more comprehensive unit costs and creating an incentive for higher utilization?)
• A Total Cost-of-Care perspective can help when examining the provider network neighborhood; informing the program of existing referral patterns while also identifying opportunities for new referral networks. Focusing on referral networks of one event-based episode may not be broad enough to uncover network opportunities that might otherwise be discoverable when a Total Cost-of-Care perspective is considered.

Person-Centered Episodes (In a person-centered model, a person is assigned into a single, categorical episode based not only an episode “trigger,” but also the person’s total illness burden at the initiation of the episode. An example includes Attention Deficit/Hyperactivity Disorder).

• Understanding Total Cost-of-Care is critical when evaluating which person-centered episodes to focus on.
• Person-Centered Episodes can be a measure of Total Cost-of-Care for certain individuals for a specific period of time (e.g. 12 months). Our analyses have found that individuals with multiple chronic illnesses drive a disproportionate share of the Total Cost-of-Care (e.g., on average 8% of a non-Medicare population has two chronic illnesses, yet they drive 40% of the Total Cost-of-Care). Episodes that target event-based services for a particular chronically ill population may result in savings for certain services, but those that are considered outside the parameters of the specific disease. For example, savings may be realized in mental and behavioral health services while cost and utilization for physical health services may increase.

When there are several episode based payment initiatives being conducted simultaneously, a Total Cost-of-Care perspective is required to measure performance of each program. An understanding of how they impact each other is critical to ensure there is no double counting of savings.

Section 3 – Treo and Total Cost-of-Care

The balance of this response discusses Treo’s analytic platform and our use of Total Cost-of-Care as the dependent variable against which any program can be developed and evaluated. Treo’s analytic platform, with its focus on Total Cost-of-Care, is well-suited to support the development and management of person-based episodes. In the case of event-based episodes, Treo’s analytic platform will track performance of these episodes and, where available for license, Treo will pursue acquisition of the coding logic for tracking performance and modeling.

Treo also believes that all measures of Total Cost-of-Care need to be categorical to the person and the service – you need both to assess performance.

• Categorical to the person. Healthcare is delivered to people with many complicated variables. Total spend needs to be understood at the discrete level of the individual.
• Categorical to the service. Total Cost-of-Care consumed by an individual is composed of services provided by many sources – hospitals, physicians, pharmacists, medical equipment, behavioral health providers etc. The efficiency of each of these suppliers needs to be understood. Both resource efficiency and contracting efficiency need to be taken into consideration; that is, do the suppliers make the most efficient use of their resources and what is the price per unit that each receives relative to an expected or targeted goal?

Treo’s analytic platform was built with these core concepts embedded into its design and functionality. Treo works with our clients to establish specific budgets for populations and services. It is from these budgets that Treo Solutions, LLC - Proprietary and Confidential
Treo then works with clients to inform delivery and payment reform initiatives. Establishing clear budgets and targets requires the development of an analytic platform that is built on accurate, enhanced data; of the establishment of sound and clear business rules; budget and weight setting; a transparency protocol; and agreed-upon measures for evaluating impact. This platform infrastructure enables the development of strategic opportunity assessments, strategy and program development, and ongoing program measurement and evaluation. An overview of the key components of Treo’s platform is outlined below. This is followed by an overview of Treo’s ability to meet the two components of an at-scale solution for episode based payment – Episode Design and Administration and Infrastructure.

1) **Data and Data Intake.** Treo has proven, best-in-class, value-added processes that ensure claims and non-claims data (i.e., clinical, quality, survey, registries, etc.) are made available for actionable analytics. Some of these processes include: source data integrity checks, quality reviews, and data enhancement (Treo has the expertise to identify Potentially Preventable Evens, or PPEs, which are based on 3M™ logic. We are also very familiar with other grouping and risk-adjustment methodologies). These processes ensure that the analytic data platform is designed to meet overall program objectives. An overview of the data intake processes can be found in Attachment A. It should be noted that Treo also manages several multi-payer initiatives and is prepared to accommodate an analytic platform that serves multiple payers.

2) **Establish key business rules.** Transforming a healthcare system requires more than just a comprehensive dataset. It requires a thoughtful analytic platform designed to meet the core objectives of that initiative. An understanding of what is to be measured and for what purpose will drive the rules established when building that platform. Based on this understanding, key rules and policy parameters will be established for issues such as rules of attribution (services and people), coordinating those rules across initiatives (e.g. event-based episodes vs. person-centered episodes); which members to include/exclude; risk-adjusting and weight sets; setting clear base lines for performance monitoring; and adjusting for impact of unit price differentials (e.g. establish measures of resource use through standard pricing). The exclusion examples cited in Section 2.1.3 of the RFI would be established as part of this process.

3) **Budget and Weight Setting.** This consists of two core steps: [1] Develop resource intensity weights (RIW) for risk adjusting, and [2] determine projected budget targets for comparison. Treo’s process for developing RIW consists of four steps:
   - Data selection (e.g., defined period of time and minimum member months).
   - Trend data to common pricing.
   - Outlier processing, which includes exploring multiple methods e.g. standard deviation, stop loss, interquartile range analysis.
   - Calculate weight set.

4) **Strategic Opportunity Assessment (SOA).** Once the above steps are complete, Treo conducts a Strategic Opportunity Assessment for our clients to identify clear areas of opportunity and variation at both the person and service level. Examining variation in Total Cost-of-Care, utilization and unit cost across networks, geographies, population cohorts, and services are among the elements of the SOA. This process is foundational and will assist DMS as it examines options to scale this program to include 75%+ of the medical spend over the next three to four years. Any new programs should be informed by the Total Cost-of-Care to ensure that those clear expectations on performance are established, including reasonable returns on investments.

   In addition to Total Cost-of-Care, the SOA process examines key quality outcomes. Specifically, the Strategic Opportunity Assessment includes the Treo Quality Index Score, a composite score of key domains that takes into account patient conditions, processes of care, and outcomes of care. Each domain includes well-researched measures that can be influenced by changes in provider behavior. While each domain can be viewed on its own, the Quality Index offers an overall score that can be used to rank provider
performance and to compare a provider’s score to the overall average score for the system or network—this helps to pinpoint areas that may require more scrutiny for performance improvement. An overview of the Treo Quality Index Score can be found in Attachment B.

5) **Strategy and Program Development.** Informed by the SOA, Treo will work with DMS on the components of an at-scale solution. This will include the development and/or evaluation of episodes (Episode Design) and development of an analytic and reporting platform (Administrative/Infrastructure). An overview of our approach to address the key elements for both of these components (as it applies to person-centered episodes) is included in the next section. Treo is preferential to person-based episodes; however, we will work with DMS to assist in the development of event based episodes.

6) **Analytic Platform and Transparency Protocol.** From a technology perspective, Treo provides analytic tools – geographic mapping capabilities, our Member and Provider Analytics (MPA), and our Performance and Payment Analytics (PPA)—which are delivered through client-specific dashboards. The Treo model for analytical tools requires no user limit from a licensing perspective.
   - MPA is a population-based tool that measures cost and utilization variation – including variation that is identified as potentially preventable – at the person level. MPA delivers performance analytics based on key member attributes like primary care provider, network or ACO, program, and geography.
   - PPA is a visit-based tool that measures cost and utilization variation at the visit or admission level and also includes reports on potentially preventable activity such as readmissions, initial admissions, and ER visits. PPA delivers performance analytics on key provider attributes such as service level cost, margin, and potentially preventable readmission rates, using 3M’s model for Potentially Preventable Events.
   - The client dashboard is a role-based performance reporting tool used to communicate program performance across program stakeholders who have accountability for certain key performance indicators. Dashboards were designed to share performance data with stakeholders in a way that creates enough transparency to promote program adoption.

7) **Measuring Impact.** Designing the right evaluation program is critical. Depending on the specifics of the program, Treo may use one or many methods for program evaluation. These may include but are not limited to:
   - Pre-post: This is a simple accounting of the amount of money spent on the population impacted by the reform initiative before and after the program launch.
   - Compared to projected: This method examines program expenditures against projected targets for expenditures, which are established prior to program start. Expected costs are derived from historical patterns of expenditures for patients similar to the ones enrolling in the program.
   - Counterfactual: This model attempts to determine what would have happened if the program under scrutiny had never been implemented. The experience of program participants is compared to a similar group of persons not enrolled in a program. We use actuarial methods to adjust for differences in age, sex, and health status. This model assumes that a reasonable comparison group can be established.
   - Difference in Difference: This is the same as the counterfactual except it takes into account the different starting points for the group impacted by the program and the control group. For example, if the enrolled members start out with lower rates of inpatient use than the non-enrolled; this model takes that difference into account when reaching conclusions about the program’s impact.

Each of these methods provides a different perspective on how to answer questions about program impact in a situation where the real impact can never be known with 100% certainty.

Through the processes outlined above, Treo’s Total Cost-of-Care approach establishes person-level budgets—the duration of which can be a year or less. Because our Total Cost-of-Care model is categorical to the person, budgets can be established for everyone in a population or for specific, targeted individuals (e.g. chronically ill). If non-claims data is included, Treo can segment the population. For example, a budget can be established for
individuals with diabetes and an A1C over 9. Not only can Treo identify expected Total Cost-of-Care budgets – we will also identify and target the potentially preventable events within that budget.

Section 4 - Components of an At-Scale Solution for Episode-Based Payment

Component A: Episode Design.

The following offers specific responses for supporting person-centered episodes. In addition, Treo’s Analytic Platform supports strategic evaluation of event-based episodes as well as performance evaluation.

- **Episode Definition.** Treo will develop specific budgets and targets at the Total Cost-of-Care and service category level. Treo Solutions uses risk-adjusting methods that are categorical and person-centric. Clinical Risk Groups (CRGs), a 3M™ methodology, are used as the fundamental platform for performing population based risk-adjusted analytics. CRGs predict resource consumption at the person level and allow for patient and provider analysis on an “apples-to-apples” basis, comparing patients with the same disease burden and resource requirements, negating the “our patients are sicker” argument. CRGs are necessary for appropriate case management, identifying gaps in care as well as population and provider profiling. CRGs and other person-centric criteria can play a valuable role in this program. They can be used to identify candidates for specific episodes (e.g., age, sex, non-claims, etc.) and to set service category budgets (Inpatient, Outpatient, ER visits, Rx, etc.) and their potentially preventable events subsets. This enables the establishment of budgets for PPEs such as readmissions, visits, and ambulatory case sensitive admissions.

- **Principal Accountable Provider (PAP) Selection.** Treo will provide a network segmentation strategy that identifies the most efficient provider partners for each person-centered episode. An overview of our network review tool, which would be incorporated into the analytic platform for DMS, can be found in Attachment C. Essentially, our strategy and tool stratify networks based on a risk-adjusted, Total Cost-of-Care as well as Quality Index Score. Provider selection will also be informed by efficiency metrics that consider resource efficiency of provider partners, their referral networks, and unit cost variation.

- **Clinical and Business Exclusions.** The development of these exclusions would be part of the key business rules process. Treo has extensive experience in designing the applicable business rules to meet program objectives. This is standard operating procedure for the development of any payment transformation program. Developing exclusions was a key element of the program design for the clients listed at the beginning of this response. It would also include the critical components of payment transformation that Treo Solutions provided to several Blue Cross Blue Shield Plans as well as the State of New York Medicaid program as these payers moved to resource-based payment systems for inpatient and/or outpatient services. An overview of this work can be found in Attachment D. Clinical exclusions and decisions would include input from Treo’s Medical Director L. Gordon Moore, MD. Dr. Moore provides strategic coaching and consultation regarding the design and implementation of data- and outcomes-driven delivery system changes. As a core faculty member with the Institute for Healthcare Improvement, and through the practical application of research into practice, he has extensive experience with practices from solo independent to large vertically integrated health systems.

- **Patient and Provider Level Adjustments.** Data structure to accommodate these levels of adjustments would also be part of the process for establishing key business rules.

- **Quality Metrics.** Treo would recommend outcome-based measures, such as those included in the Treo Quality Index Score (QIS) (available in Attachment B). The QIS could be used in its entirety or individual domains could be leveraged independently depending on the objectives of DMS; other existing measures and the payment method can also be considered. QIS is composed of seven domains
including: member experience, primary and secondary prevention, tertiary prevention, population health status, continuity of care, chronic and follow up care, and efficiency.

- **Maintenance and Algorithm Updates.** Treo’s analytic platform is dynamic by design. We will work with DMS to establish clear protocols for updating algorithms as needed in order to balance efficiency of the measures and program integrity. It’s important to note that Treo is prepared to accommodate ICD-10. We will not only accept new coding when it becomes effective in 2014, we will map all historical claims to the same category of illness burden in order to maintain historical integrity.

- **Threshold Setting.** This is core to any Total Cost-of-Care modeling and will be developed as part of the budget setting process discussed earlier.

**Component B: Administrative / Infrastructure**

- **Analytics Engine.** This is described in detail earlier in this response, in what we refer to as the analytic platform and transparency protocol. This is the analytic engine that would support the person-centered episode program and Total Cost-of-Care evaluation. This engine is made available through a role-based web portal. Using this analytic platform program, stakeholders will be able to quickly assess Total Cost-of-Care and/or person-based episode performance against established budgets on key performance indicators (KPI). KPIs could include Total Cost-of-Care, cost within categories of service, utilization by categories of service, and utilization and/or cost of potentially preventable events. The analytic platform will also provide actionable analytics, giving users insight into outlier activity through dynamic reports, which can show details down to the patient level.

- **Report Generation and Distribution.** Treo has standard performance reports and care management reports that would be made available through the analytic platform discussed above. Treo would also work with DMS to develop reports that meet the needs of each program.

- **Data Exchange.** Treo’s analytic platform accommodates multiple payers. Currently, Treo supports several multi payer reform initiatives including the All Payer Claims Database for the State of Colorado. DMS and its partners recognize the importance of scale if real reform is going to succeed. Consequently, the analytic platform employed by DMS must be able to accommodate data feeds from multiple payers—and that data must be structured in a way that is meaningful to the overall objectives of the program. Treo is uniquely qualified to provide the analytic platform that supports the State’s reform initiative by developing a “data mart” that includes multiple payers. Treo is also working with our clients to accommodate non-claims data, where that data is available, and is prepared to do so for this initiative.

- **Payment Administration.** Treo’s analytic platform is designed to calculate program savings based on established design parameters. These calculations could feed payment systems or financial management systems.

The Treo Cost-of-Care approach, combined with our extensive healthcare transformation experience, offers the state of Arkansas a proven method that has tangible results. One of the hallmarks of Treo Solutions is our collaborative relationship with our clients. This enables us to create client-specific solutions based on their goals and objectives. We welcome the opportunity to work with Arkansas DMS to support and strengthen the episode-based payment.
Attachment A: Treo Solutions Data Intake Process
6.2.3. **Data Intake Capabilities**

Treo Solutions has developed a standard set of activities, known as the Data Intake Process, to receive a file(s). Treo will work with the client to conduct an in-depth data intake interview. This process focuses mostly on understanding the nuances of the various data elements and the definition of the fields so that the data can be accurately mapped to the core Treo tables.

The data intake process for each data set will follow the process outlined below although the rules may differ based on data source.

**Data Intake Process**

**Data Submission**

Treo starts each client engagement with a thorough data education, intake, and validation process. This discussion is led by our data intake team. The process also serves as the start of a quality and risk mitigation plan for data integrity. Treo assigns a Client Services Manager who will be responsible for all communications with the client. Treo’s Client Service Manager will ensure that the data that Treo receives from the client is accurate and usable and that Treo adheres to all timelines and regulations that are set forth by the client.

Our process starts when inbound data is uploaded to our secure FTP server. This is the typical entry point into our processing. Our inventory system records receipt of the files and automatically transfers them to our secure source file vault. Automated messages are generated alerting Treo of the data’s readiness for staging. When requested by clients, Treo will also confirm receipt of data with the client. Treo will then perform the following data validation analysis to check the quality of the data prior to processing to ensure maximum value from the output of processing.

Once Treo has received the data we then perform source data integrity checks (SDICs) with a thorough review of the data prior to processing. Our SDIC process uses a baseline approach where common tests can be applied across submitters, while allowing custom tests to address submitter specific issues. This review connects the dots by matching bill types, looking at payments for duplicates, ensuring referential integrity, and other items in source data. This review frequently uncovers issues in the source data, some of which the client may not be aware of. Analysts at Treo then leverage their extensive experience with healthcare data to uncover data issues that may not be readily apparent.

In our experience, we have found that a key aspect of the data intake process is the ability to receive data simultaneously from multiple submitters. Because we have hundreds of terabytes available on our FTP servers and the proper tools in place, we are able to receive data and perform our SDIC reviews simultaneously for multiple submitters. This becomes extremely valuable should our clients require deadlines for submissions, as it allows the submitters to maximize their time and efforts in meeting the requirements for the submission guide. Because of our infrastructure and familiarity with the SDIC process, the turnaround time on presenting the SDIC results to the submitter from the moment their data is uploaded to our servers is ten business days or less.

Once the SDIC test process is completed, we present the submitter with a suite of SDIC reports (screenshots of a de-identified sample report can be found below). For each data type there is a corresponding Microsoft Excel report that outlines each data element or column and notes whether or not it meets the agreed upon data submission specifications. For those elements that do not meet the requirements, a linked tab within the Excel document provides up to 5,000 examples of the error. Once production processing commences, data submissions may be filtered based on testing failures. Upon
request, a full data dump of edits and associated data record keys failing the edits can be provided to the client via FTP.

In addition to the detailed Excel reporting, we include a summary report that can be customized to highlight the data elements that do not meet the requirements set forth by the Data Submission Guide. In this document, Treo notes solutions that can assist the submitter in meeting the requirements of the Data Submission Guide. In our workings with CIVHC, the organization responsible for the Colorado APCD, the submitters have acknowledged this to be an easier and more efficient process to identify data discrepancies as opposed to the industry standard of manually identifying error codes.

Treo hosts a secure external web portal where submitters are able to easily access SDIC results. The portal has the ability to allow for role based access where the client can access all results but submitters would only be able to see their own results. This helps to foster transparent communication between all parties. Any updates to the documents over the course of the project will be updated in real time on the web portal for all parties to review as well as edit. Treo will conduct a detailed review of the results of the SDICs. Through this discussion, Treo and the client will gain a baseline understanding of the source data, the unique characteristics of that data, and the business rules required for core processing. Treo will also determine if all data necessary for processing has been successfully transmitted.

In our core ETL (extract, transform and load) process, the granular raw data provided is processed, transformed, enhanced, and stored within our data warehouse. All of the detailed claims and clinical data are retained in the data warehouse for granular analysis, while aggregates can be built at each of the following levels, including but not limited to: Member, Provider, Provider Group, provider region and ACO. At any time, Treo can filter member or claims data to parse the correct claims for a subset of analysis and aggregate that data. All of this filtering and aggregation is completed using optimized stored procedures within the Microsoft SQL Server database. We also build aggregate tables, using the building blocks of members and claims, which pre-compute summary data to common levels of analysis, such as Provider, Provider Group, and ACO. These tables carry similar attributes to the basic data elements to allow for further filtering and segmenting of data. These aggregates can then be filtered and analyzed, or rolled up further as needed. Using this approach, we are able to quickly perform core analysis functions, such as identifying members with missing office visits, either at an individual member level or aggregated to Provider, Provider Group, or ACO level.

**Documentation and Communication**
Throughout the Data Intake Process, Treo documents issues that arise and communicates these to clients through written reports and meetings. Here is a sample of the documents used while preparing to process client data.

- Data Intake Questionnaire – used as an interview script for the initial data intake discussion.
- Treo Services Data Input Specification – the formal specification containing the requirements for processing.
- Treo Services Guide for Effective Data Submission – provides in-depth information about submitting data to Treo for processing.
- Source Data Integrity Check Report – contains the results from a set of checks examining referential integrity, domain of value, and other QA reviews.

Documentation and communication are core to the process and serve as a central element of our risk management and management plan. The documentation and feedback loop allows Treo and the client to measure progress, quickly identify any issues and implement remediation plans (as needed). On a near
daily basis we (Treo and the client) will be able to identify status checks and see how well major tasks are progressing and insure that the data intake process is accomplished successfully.

Additionally, Treo has a rigorous data conforming and cleansing process. The flow chart below represents the steps required before the data can be deemed to have the appropriate quality and integrity.

*Treo Solutions Standard Data Intake & Transformation Process*

These three steps provide a strong foundation for conforming and cleansing the submitter’s data.

A complete check of referential integrity of the transmission is performed. Claim header and line files are checked to ensure that lines with associated headers do not exist. Every claim header row must contain at least one claim line. Every Facility ID contained in claims must be present in the Facility table. If Member and Employer tables are present, then each Member ID and Employer ID in the claim files must be present in Member and Employer tables.

The basic rules for cleansing client data will be gathered from Treo’s SDIC reports. Rules communicated by the submitter will also play a key role. All cleansing rules will be documented and clearly communicated.

Some examples of data cleansing routines are:
- Syntax Tests: These tests will report on dirty or malformed data. Invalid characters, incorrect case and other structural issues are common targets of syntax tests.
- Reference Tests: These tests will report on the integrity of the data according to the defined data model and reference tables. This may include simply checking for valid diagnosis code values.

Many data issues will be identified early on in the process via SDIC reviews and client meetings. Treo will construct data cleansing routines based on these processes. As with most data warehouses new data and potential new issues are always entering the system. The combination of a strong data acquisition and data QA process will quickly identify the issues. Throughout the process, Treo performs gap analyses to determine differences between the data feeds.

Some issues can be identified but not readily corrected. All data cleansing actions are logged so that reconciliation can be run to identify what was changed and how.

Examples of issues:
- Duplicate claims
- Interim bills
- Adjusted claims
- Zero allowed claims
- OP units (malformed or extremely high values)
- Service date discrepancies
- Negative charge issues
- Medicare Duals / COB claims
Determining healthcare value is dependent on the ability to evaluate and measure both cost and quality of care. While cost and utilization have been traditional measures examined by payers, providers, and purchasers of care, the metrics for quality haven’t been as clear cut. Because there are hundreds, if not thousands of process-oriented or disease-specific quality measures, it is challenging to have a comprehensive, easy-to-view measure or score that offers a broad understanding of the quality of care and performance of a provider or health system.

In support of our work to help clients build the bridge to Accountable Care, Treo Solutions researched and developed a population-based composite score which offers a top line view of quality.

The Treo Quality Index Score, a composite score of key domains, takes into account patient conditions, processes of care, and outcomes of care. Each domain includes well-researched measures that can be influenced by changes in provider behavior. While each domain can be viewed on its own, the Quality Index offers an overall score that can be used to rank provider performance and to compare a provider’s score to the overall average score for the system or network—this helps to pinpoint areas that may require more scrutiny for performance improvement.

Because clients have different goals and objectives for analyzing provider performance, Treo has developed the Quality Index to be flexible. There are six core domains, with a seventh, an efficiency measure, which can be added based on client goals. In addition, Treo works closely with clients that wish to include additional measures within each of the domains, with a keen focus on testing the reliability and validity of the score based on these tailored changes.

The full Treo Quality Index Score is based on the following domains.

**DOMAIN ONE: MEMBER EXPERIENCE.**

Recent studies have shown that patient experience has an impact on clinical outcomes. As a result, payers are looking closely at patient experience as a value-based purchasing (VBP) metric. For example, the Centers for Medicare and Medicaid Services is now using patient experience as measured through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) for Medicare VBP. This marks the movement towards new and growing financial incentives to strengthen patient experiences with care. In order to account for this emerging focus, Treo included a domain that evaluates patient perception of care within the Quality Index. This domain of the Quality Index, the only one that does not rely on claims data, has four core measures drawn from the HowsYourHealth survey developed by John Wasson, MD Professor of Community and Family Medicine, and Medicine at Dartmouth Medical School.

**THE MEMBER EXPERIENCE DOMAIN INCORPORATES:**

- **PATIENT CONFIDENCE**
- **CONTINUITY OF CARE**
- **OFFICE EFFICIENCY**
- **ACCESS TO CARE**

**DOMAIN TWO: PRIMARY AND SECONDARY PREVENTION.**

This domain measures the provider’s performance on screening services designed for early detection or prevention of disease. These measures are drawn from the National Committee for Quality Assurance’s (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS), a tool used by more than 90 percent of America’s health plans to measure performance.

In addition, other screening measures, such as screening for cervical cancer or diabetes, can be added based on a client’s request.
The Treo Quality Index Score
A SINGLE COMPOSITE SCORE FOR EXAMINING QUALITY

CONTINUED

THE PRIMARY PREVENTION DOMAIN INCLUDES SCORES FOR:

- Percent of the provider’s pediatric well-visits for children 30 days to 15 months, and 3 years to 6 years
- Percent of the provider’s mammogram screening to applicable patient populations
- Percent of the provider’s colorectal cancer screening to eligible patient population

DOMAIN THREE: TERTIARY PREVENTION.

In addition to primary and secondary prevention to help keep the population healthy, the Treo Quality Index Score has a Tertiary Prevention Domain that evaluates the effectiveness of a provider in addressing “sick” care. This domain incorporates two measures: potentially preventable hospital admissions and hospital emergency room visits.

THE TERTIARY PREVENTION DOMAIN INCLUDES:

- Percent difference between the expected number of hospital admissions that are potentially preventable and the actual rate of the provider’s population
- Percent difference between the expected number of hospital emergency room visits that are potentially preventable and the rate of the provider’s population

DOMAIN FOUR: POPULATION HEALTH STATUS.

One measure for determining providers’ ability to deliver quality care is their ability to manage the health status of their patient panel from one time period to another. This domain of the Treo Quality Index uses a risk-adjusted assessment of the percent difference between the expected rate of disease progression and the actual rate of the disease progression in the provider’s patient panel.

THE POPULATION HEALTH STATUS DOMAIN USES TWO METRICS OF DISEASE PROGRESSION:

- Change in the number of chronic conditions
- Change in the severity within the chronic conditions

DOMAIN FIVE: CONTINUITY OF CARE.

This domain measures the concentration and continuity of physician visits. The Continuity of Care Domain is associated with a number of positive outcomes, such as lower rates of hospitalization and readmissions, more efficient medical care, and higher patient satisfaction.

SPECIFICALLY, THE CONTINUITY OF CARE DOMAIN INCLUDES:

- Percent difference between a physician’s risk-adjusted performance on potentially preventable services and the expected rate for a comparable population
- Percent difference between a physician’s risk-adjusted rate of prescribing generic drugs and the expected rate for a comparable population

DOMAIN SIX: CHRONIC AND FOLLOW-UP CARE.

For members of the population who have chronic conditions, the Treo Quality Index measures the processes and impact Chronic and Follow-Up Care.

THE CHRONIC AND FOLLOW-UP CARE DOMAIN INCLUDES THE FOLLOWING THREE MEASURES:

- Percent difference between the number of expected hospital readmissions that are potentially preventable and the provider’s actual number of potentially preventable readmissions
- Percent of the provider’s panel that visited a primary care provider (PCP)
- Percent of the provider’s panel who are non-users of health services

DOMAIN SEVEN: EFFICIENCY.

The Efficiency Domain examines the risk-adjusted rate of prescribing generic medications and the appropriate use of outpatient services for a physician’s panel. The analysis of outpatient services examines potentially preventable ancillary services, such as high cost imaging, ordered by primary care physicians or specialists that may not typically provide useful information for diagnosis and treatment.

SPECIFICALLY, THE EFFICIENCY DOMAIN EXAMINES:

- Percent difference between the expected continuity of care score for providers serving similar populations and the actual score for the provider’s panel (as published by Bice, T. W., & Boxerman, S. B. (1977). A quantitative measure of continuity of care. Medical care, 15(4), 347-349)
- Percent of the provider’s panel visiting a primary care provider (PCP)
- Percent of the provider’s panel who are non-users of health services

For more information contact Herb Fillmore at 800.455.7338 or hfillmore@treosolutions.com
Attachment C: Network Management Overview
Network Manager:
Building Networks to Improve Cost, Quality and Access
The health insurance market is facing a number of challenges. Increasing competition, the need to retain a plan’s existing customer base, the pressure to develop new low-cost offerings, and the implementation of state-level health insurance exchanges are forces impacting health plans and payers. This has led to a sharp focus on meeting the triple aim—improved quality, lower costs and improved access to affordable coverage, and better patient experience—through effectively managing provider networks of care.

Today, health plans and payers are re-examining their current network configurations and preparing to manage new network scenarios to optimize access, quality, and outcomes—while lowering costs—and meet the changing needs of employers, exchanges, existing networks, ACOs and medical homes, and Medicaid. Traditionally, the process for examining existing provider networks and modeling new network scenarios has meant that health plans had to link cost, quality, and access information from a variety of sources, attempt to develop a complete picture, and then model alternatives.

To ease the process of assessing and reconfiguring provider networks, Treo Solutions has developed the Network Manager. The Network Manager brings together, in one application, total cost-of-care, access, and quality information about primary care practices. Through a variety of filters and parameters, health plans can create different scenarios by:

• Examining provider performance based on cost, quality (composite score), and access
• Determining providers with the best mix of high quality and low cost
• Identifying potential member disruption in access to services for the modeled scenarios
• Modeling of specialty physicians and facilities based on PCP referral patterns

TREO NETWORK MANAGER OFFERING

COST

QUALITY

ACCESS

NETWORK MANAGEMENT
AND OPTIMIZATION

Drives Decisions For:

• Exchanges
• Employers
• Existing Networks
• ACO/PCMH Optimization

Allows payers to analyze networks based on a “user defined” mix of cost and quality balanced with access to deliver an identified level of healthcare efficiency.
Treo’s Network Manager gives health plans the information they need to model scenarios for:

- Creating networks for Exchanges (Medicaid, Private and Small Businesses)
- Negotiating employer contracts (new or renewal)
- Analyzing existing networks to optimize cost and quality
- Understanding and managing member disruption
- Negotiating provider contracts

- Building viable networks for Accountable Care Organizations and Patient-Centered Medical Homes

Because it is built on Treo’s existing analytic foundation and framework, the Network Manager uses proven methodologies and risk-adjustment to provide plans with credible, reliable information. It also offers health plans the unique ability to configure their own data, including the definition of service areas and primary care providers (PCPs).

### MODEL SCENARIOS

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<th>SCENARIOS</th>
<th>QUESTIONS</th>
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<td><strong>ANALYZE PERFORMANCE OF EXISTING NETWORK</strong></td>
<td>Which PCP Groups offer lowest cost and highest quality, by region?</td>
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<tr>
<td></td>
<td>Which PCP Groups offer the highest cost/lowest quality?</td>
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<td>Which regions are not adequately covered with PCP Groups?</td>
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<td>How are members disrupted if PCPs are removed from the network?</td>
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<td><strong>EMPLOYER CONTRACTING</strong></td>
<td>How can employers continue to receive high quality care in a lower cost benefit option?</td>
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<td>What is the impact to members of a narrowed PCP network?</td>
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<td>Which PCP Groups should be added to the network to ensure adequate coverage of members?</td>
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<td><strong>CREATE A TIERED NETWORK OR NETWORK FOR AN EXCHANGE</strong></td>
<td>How do we build lower cost networks to compete with exchange offerings?</td>
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<td>Which PCP Groups should be included in each network tier?</td>
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<td>What is the quality and cost effect of my ‘must have’ groups?</td>
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<td>How is member access affected by a narrower PCP network?</td>
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<td>Does the network meet regulatory requirements for member access?</td>
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IDENTIFY COST AND QUALITY VARIANCE WITHIN YOUR PCP NETWORK

MODEL YOUR PCP NETWORK AROUND COST, QUALITY AND ACCESS
In the Beginning: Transforming the Outpatient System

On December 1, 2008, NYS Medicaid began using 3M™ Health Information System’s Enhanced Ambulatory Payment Groups (EAPGs), a resource-based outpatient payment system, to pay hospitals for outpatient services. The transition to EAPGs was a major shift from New York’s visit-based payment system that has been used since the inception of the program. The service-based system, which relied on billing rate codes, had encouraged over-utilization of services resulting in “capping off” of payments to meet budget constraints. Over time, the methodology became outdated and did not address the true costs of care, the intensity of services provided, or advances in medical technology. In addition, the legacy system did not lend itself to any type of quality measurement or development of incentive systems to improve outpatient care.

The change to ambulatory prospective payment using EAPGs was a means of organizing hospital and free-standing outpatient services to meet specific objectives (see sidebar), using a framework similar to Diagnostic Related Groups (DRGs) for inpatient payment. Like their DRG counterpart, EAPGs use relative weights for payment and classify outpatient visits based on similarities in resource use; patients in each EAPG have similar clinical characteristics because EAPGs relate to organ systems (etiology), thereby establishing a medical rationale for differences in resource use. EAPGs also use administrative data readily available on claim forms in the classification logic, and provide a tangible structure for payment development that allows transparency in communicating changes in policy to providers. Unlike Medicare’s Ambulatory Payment Classifications (APCs), EAPGs provided NYS Medicaid with the opportunity to include the full range of ambulatory care settings and outpatient services provided.

Besides providing a new system for classifying outpatient services or rate codes into resource-based visits, the EAPG methodology provided a number of payment policy options and the flexibility to support the transition from a visit volume-based payment to reimbursement based on the costs and intensities of the services provided.

NYS Medicaid staff worked with Treo Solutions in 2008 to develop the relative weights and payment models for the EAPG system. One uniform set of relative weights was developed on a statewide basis to be used for all outpatient providers delivering emergency room, ambulatory surgery, and clinic services. Medicaid fee-for-service claims for hospital outpatient services provided in 2005 was the dataset used for developing cost-based relative weights. The dataset included 3.1 million claims and $1.3 billion in charges. Charges in the claims data were converted to costs at the line level using department-level ratios of costs to charges from 2005 NYS Institutional Cost Reports.

The first phase of implementation was hospital clinic services and ambulatory surgery on December 1, 2008, and emergency room services were brought into the payment system on January 1, 2009. The clinic base rates are being phased in over four years using a formula blending the pre-EAPG outpatient method of payment with the EAPG payment formula. In Phase 1, the EAPG component of the payment is 25%, and increases in 25% increments until reaching 100% EAPG payment in Phase 4. In July 2009, the base rates were adjusted in anticipation of provider coding improvements that would lead to an increase in case mix. A hospital-specific capital add-on payment, which varies by service type, is also part of the payment formula. Over the next two to three years, additional providers, including diagnostic and treatment centers, ambulatory surgery centers and clinics providing mental health, substance abuse and developmentally disabled services, will be paid under the EAPG system.

The 2008-2010 budget period for outpatient care and the new EAPGs included targeted investments to provide better access to care for the following services:

- New coverage for diabetes and asthma education by certified educators in clinic and office based settings;
- Enhanced payment for weekend and evening hours access in both clinic and office-based settings;
- Enhanced payment for weekend and evening hours access in both clinic and office-based settings;
- New coverage for diabetes and asthma education by certified educators in clinic and office based settings;
- Enhanced payment for weekend and evening hours access in both clinic and office-based settings;
- New coverage for diabetes and asthma education by certified educators in clinic and office based settings;
- Enhanced payment for weekend and evening hours access in both clinic and office-based settings;
Payment Transformation: New York Medicaid Takes the Plunge

- New coverage of smoking cessation counseling for pregnant and postpartum women; and children and adolescents up to age 21;
- Expanded coverage of psychotherapy counseling by licensed social workers for children, adolescents, and pregnant women upon CMS approval;
- Cardiac rehabilitation services; and
- Screening, brief intervention, and referral for treatment in emergency departments for individuals at risk of substance abuse.

These initiatives reflect the transition of funds out of inpatient care and into outpatient services to improve the quality of outpatient care and reduce the number of inpatient admissions.

Incorporating Inpatient Payment Reform

With the EAPG payment system already underway in early 2009, NYS Medicaid began working to transform payment for inpatient care; the beginning of transitioning dollars out of an inpatient system that paid too much into an outpatient system that historically had underpaid providers. In February 2009, the Medicaid Commissioner’s report highlighted the need to fix the broken inpatient payment system, citing a number of problems with the All Patient Diagnosis Related Groups (AP-DRGs) that has been used for payment since the 1980s:

- Too much money was spent on inpatient care, and the dollars were allocated ineffectively among hospitals and services;
- The system paid too much for some services and too little for others within the hospitals; and
- Payment methods did not reflect patient acuity or the quality of the service and efficiency of the care provided.

Under AP-DRGs, payment was not adequately linked to the use of resources and did not address the true costs of new technologies in the inpatient setting. The lack of severity adjustment in the system created adverse incentives for hospitals and, according to the Commissioner’s Report, it fostered an environment “encouraging hospitals to compete vigorously to expand their cardiac services…while seeking at the same time to jettison less profitable obstetrics services.” A non-severity adjusted payment system also discouraged hospitals from providing surgical services in a more cost-effective outpatient setting, by overpaying for lower severity services and underpaying for higher severity ones.

The payment system rules and rates used were based on a foundation of costs that were nearly 30 years old, which had been trended and expanded with various enhancements, adjustment factors, and ‘add-on’ payments over time. Hospitals were also placed into seven different peer groups in an attempt to create a more efficient payment formula. The annual changes, adjustments, enhancements, and use of peer groupings led to reimbursements that were more favorable to some facilities than to others. The sheer complexity, inequity, and lack of transparency in the legacy payment system also made it impossible for NYS Medicaid to pursue the integration of quality and performance improvement programs.

Recognizing the urgent need to fix the broken payment system, the Commissioner’s Technical Advisory Committee (TAC) identified guiding principles for reform of the inpatient payment system (see sidebar). The Commissioner and TAC determined that a new payment system based on 3M’s All-Patient Refined Diagnosis Related Groups (APR-DRGs) would meet their reform objectives.

APR-DRGs were selected because they are well suited for use within the Medicaid population, with a clinical logic that identifies variations in complications and co-morbidities that impact the use of hospital resources. APR-DRGs provided the original basis for development of APR-DRGs, which were created through a joint effort between 3M™ Health Information Systems and NACHRI (National Association of Children’s Hospitals and Related Institutions). NACHRI’s involvement was important because they contributed to expanded clinical definitions for pediatric services and neonatal care—critical hospital service lines in the Medicaid population.

The impact of moving from AP-DRGs to APR-DRGs on hospital finances and incentives is illustrated in the Table on page 3, which is based on Treo Solution’s 2007 commercial health plan database. To create the chart in the Table, actual AP-DRG hospital margins by severity level were used, and the APR-DRG margins were developed using benchmark payment weights and payment neutrality to the AP-DRG actual revenues.

Guiding Principles for Reform of Medicaid Inpatient Payment

The new Medicaid rates would:

1. Be transparent.
2. Promote high value, quality driven health care services.
3. Pay for the Medicaid patients.
5. Encourage care in the right setting.
6. Reinforce health system planning and advance state health care priorities.
7. Be updated periodically.
9. Be consistent with budget constraints.

Source: The Commissioner’s Technical Advisory Committee
This Table shows that hospitals receive higher margins for lower severity services under AP-DRGs and lower margins for higher severity services, including marginal losses for severity 4 (extreme services). Under APR-DRGs, margins are redistributed to higher severity services, which encourages the provision of care in the right setting, moving less severe cases to outpatient when appropriate, and removing financial disincentives to treating more severe patients.

In early 2009, NYS Medicaid staff worked collaboratively with Treo Solutions and representatives from New York State hospital associations to develop the payment methodology for the new APR-DRG payment system, which was to be implemented on December 1, 2009. The results of the transparent development process were payment rules that included relative weights for each APR-DRG/severity combination; and for each APR-DRG, thresholds for determining high-cost outlier cases and length of stay statistics to be used in transfer payments.

**Next Steps in Payment Transformation**

The transition to EAPGs and APR-DRGs was significant because it reduced the payment variation for similar services, which existed in the legacy systems. With new payment tools in place that both remove cost variation and stratify health care services provided by severity, NYS Medicaid is well positioned to implement value-based payments by creating programs that focus on reducing preventable events, such as inpatient Potentially Preventable Readmissions, Potentially Preventable Complications, and Potentially Preventable Admissions. In fact, effective July 1, 2010, NYS Medicaid began instituting inpatient payment reductions for Potentially Preventable Readmissions.

On the outpatient side, Potentially Preventable Emergency Room Visits (PPVs) can be evaluated, based on a listing of EAPGs identified by 3M, including lower severity visits such as headache, gastroenteritis, and lower urinary tract infections. PPVs can help NYS Medicaid identify needs for improved access and quality in primary physician care.

The ability to adjust inpatient and outpatient comparative data for the acuity of services allows NYS Medicaid to have a transparent and fair method for monitoring the performance of hospitals and physicians and to link payments to outcomes. NYS Medicaid’s payment transformation also enables them to take reform to the next level, with population-based shared savings programs using an accountable care organization (ACO) model.