RFI Title: VHCURES 3.0

Procuring Organization: Vermont Green Mountain Care Board (GMCB)

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Section 1: Vendor Information

Onpoint's secure, multi-payer data integration systems have been in production for more than 15 years, have been continuously updated and enhanced, and have been tested more rigorously than any other APCD solution on the market. We invest heavily in ensuring the security, integrity, and quality of our APCDs' data, safeguarding the reliability and trust in downstream analyses. The quality of Onpoint's work is evidenced in the breadth, complexity, and granularity of the analytic applications that our APCDs are supporting — from public reporting solutions that rate providers' and payers' relative quality and cost of care, and financial settlement reporting for Accountable Care Organizations that requires a very high level of precision in measure results, given the financial impact, to program evaluations that depend on reliable member and provider indexes and robust linkage with clinical and other data sources to support complex statistical models.

The VHCURES system is well known nationally as a leader among APCD programs in its broad and innovative applications which depend first and foremost on getting the data right. Integration systems must reliably validate, standardize, transform, and enrich the database to support the evolving data needs of its user community and variability in submission quality. Given the large number of submitters in Vermont, and the relatively small population, delivering a consistently valid and complete data set is no small challenge. Onpoint is proud of the work it has done in support of the state over the past 10 years and is committed to continuously improving the data management and analytic products it is contracted to deliver. To illustrate this commitment, we would point to several notable milestones that have been achieved working collaboratively and responsively in the last year:

- Onoint implemented a secure, cloud based analytic enclave for the GMCB on a 6-month trial basis in May 2017. The GMCB users have strongly endorsed the performance of the enclave, and have expressed interest in continuing with an enclave environment following the trial period. The trial has been collaborative and Onpoint has been flexible in adapting the enclave to meet the specific needs of the GMCB.
- Onpoint understands the importance of reliable APCD data, and has worked closely with the GMCB, Blue Cross Blue Shield of Vermont (BCBSVT), and the Department of Vermont Health Access (DVHA) to undertake a data reconciliation process. The collaborative approach has been informative and productive.
- With the signing of the All Payer Model (APM) agreement in October 2016, the Vermont GMCB was interested in collecting ACO attribution information from VHCURES submitters. Onpoint has provided the necessary subject matter expertise to build technical requirements and has successfully implemented code changes to accept the ACO attribution data from DVHA in October 2017.

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Section 2: Cost Estimates

Given the uncertainty in the exact scope of work, we have provided a cost range for the GCMB's planning purposes.

	Annual Cost Range
Core Data Management	$600,000 – $950,000
Analytic Enclave	$75,000 - $135,000
Data Request Website	$120,000 - $270,000

Section 3: Business and Technical Requirements

3.1 Data Collection, Cleansing, Consolidation, and Distribution

3.1.1 Improved Data Layout

The GMCB currently maintains three separate file layouts for submission of data to the APCD, one each for commercial, Medicaid, and Medicare specific data submitters. With the common data layout (CDL) having been vetted by many key players in the industry, it is expected that there will be a shift to use it as the new standard for APCD commercial submissions. The CDL is a robust layout that contains all the key commercial data elements currently collected by the GMCB, plus many additional elements that are not currently collected but would add value. However, there are some notable additional data elements, not included in the CDL, that Onpoint would suggest should be required when formalizing a new data submission layout. These additional elements are:

- Specialized Medicaid and Medicare data elements like dual eligibility, aid category, program codes, etc.
- Vermont-specific data elements like the ACO indicator or the Blueprint Medical Home flag
- Room for future growth: Over time, needs change and having placeholder fields within the data submission format for easy implementation of yet to be determined data elements is recommended.

3.1.2 Redesigned and Enhanced Onpoint CDM

Key to the utility and reliability of our clients' data is our market-leading solution, Onpoint CDM (Claims Data Manager), a powerful suite of data integration technology, end-to-end quality assurance procedures, expert analytic enrichment, and a bullpen of technical staff with the knowledge and experience to effectively address client needs.

Over the past year, Onpoint, with guidance from key stakeholders and leaders in the healthcare industry – from federal, state, and private agencies to provider organizations and health plans – has worked toward enhancing the end-user experience of our Onpoint CDM solution. Featuring a user-friendly interface, improved navigation, and enhanced functionality throughout, our new CDM front-end application will offer health plans, clients, and internal staff alike a fresh and more intuitive way of uploading files, monitoring submissions processing and validations, and easy reporting on a host of information captured in our systems.

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Key components of the redesigned Onpoint CDM solution include:

- Enhanced registration processes with the purpose of capturing a more robust set of information from health plans for downstream validation and reporting
- Self-service administrator components enabling agile and sustainable credentialing and user management
- Comprehensive suite of customizable validation reporting with export options
- Online-based waiver management system ensuring enhanced communications and subsequent documentation among health plans, clients, and internal staff for continued file processing

Everlasting components of Onpoint CDM include:

- APCD systems development in conformance with state's requirements and approved Data Submission Guide
- Submitter onboarding, from registration and initial orientation through successful testing and historical data submission
- Data intake, cleansing, standardization, and consolidation
- Quality assurance at all stages of data integration
- Identity resolution, including master patient and provider indices
- Provider roster development and maintenance
- Analytic enrichment spanning use-flag assignment, disease flagging, risk scoring, grouper assignment, provider attribution, and performance measures generation
- Maintenance of an externally validated information privacy and security program that complies with all appropriate federal (e.g., HIPAA, NIST 850-53) and state regulations and standards

3.1.3 Cloud-based Distributed Computing Platform

In addition to redesigning and enhancing our CDM interface, Onpoint is currently building a new, data processing engine leveraging Hadoop distributed computing technologies and the cloud. The new model will enable processing data much more quickly than a traditional Relational Database Management (RDBMS) / Extract Transform and Load (ETL) system. By building this system using distributed computing patterns and the cloud, it will have the capability of scaling nearly infinitely, and on-demand to meet any processing needs. The system is being architected to allow greater flexibility in the types of data we can integrate with the APCD claims data while keeping the current 1200+ data quality checks and security controls intact.

3.2 Master Person Index

Onpoint's clustering process involves a complex series of algorithms and automated linkage steps that rely, first and foremost, on the quality of the underlying data, which is safeguarded by our library of established data quality validations. Submitted member and subscriber attributes — from eligibility, medical/pharmacy claims— comprise the building blocks that are critical to linkage across records; the more accurate and plentiful these building blocks, the stronger the construction. Included in Onpoint's library of data quality validations are those necessary to ensure quality member data is received, even if it is reported as hashed data.

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When the GMCB revisits their collection rule, it is recommended that additional member identifiers be collected (even if hashed) to continuously improve the accuracy of the master person index. Social Security numbers, although hashed, are not consistently reported across all submitters and products (many Medicare Advantage plans do not report the SSN to the APCD). To supplement this, other data elements such as members' cell phone numbers, can be collected (as hashed) and incorporated into the member clustering algorithm. Additional subscriber identifiers may be collected to further enhance Onpoint's true master person Index that assigns unique IDs to both members and subscribers alike.

Building a master person index using hashed identifiers requires different methodologies than is used with direct identifiers. Onpoint has more experience in this area than any other vendor.
Although many APCDs have been moving towards collecting direct identifiers to boost the member matching rate and allow for methodology validation through sensitivity and specificity testing, continuing with hashed identifiers is once again recommended due to increased concern over the submission of substance abuse related records. Continuing to hash member direct identifiers provides submitters and other stakeholders with the added patient privacy to alleviate the apprehension in releasing substance abuse records.

When receiving hashed direct identifiers, a consistent methodology must used to track members across years and across payers. If a new hashing methodology is warranted, an application that hashes the direct identifiers using both the old and new methodologies would be required for two years to build the necessary crosswalk to follow members between historical and newly submitted data. It is also necessary that the hashing application be flexible enough to use with other data sources such as registries and clinical data in order to integrate these other data sources with the APCD.

A lockbox solution provides the benefits of creating a master person index using direct identifiers with the protections of hashed identifiers; however, it adds time and money to the process. Submitters are required to first send their member information to a lockbox vendor in order to receive the member's unique ID prior to sending their data to the APCD. This usually adds 30 days to the submission process, delaying the timeliness of using the APCD data. This process is more costly to the state, incurring the costs required of a separate lockbox vendor to "firewall" member direct identifiers from the health information collected by the APCD vendor. It is also more costly to submitters who are required to generate and submit an additional file to the lockbox vendor, receive the response file, and incorporate this external lockbox ID into their APCD submissions.

Because of the added cost, it is recommended that if a lockbox solution was selected that the GMCB reevaluate and increase their current threshold mandating payers to submit data to the APCD. This would lessen the burden for smaller submitters.

3.3 Master Provider Index

The key to creating a robust master provider index is to establish clear definitions for the provider information being sent to the APCD. When conflicting attributes are being reported by different data submitters for the same provider, the ability to assign a single provider identifier is diminished. For example, most APCD's require the submission of the rendering providers' tax ID. This field is often

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interpreted differently by data submitters and can be submitted several different ways (the Employer Identification Number of the practice, the Employer Identification Number of the provider, or the provider's Social Security Number). These variations can cause more than one provider to have the same tax ID and it can limits the ability of a master provider index to distinguish a single provider leading to both false negatives and false positives.

To improve the master provider index, the provider information that is requested by the APCD should be clearly defined and accessible to the data submitters. In addition, since there is always overlap in provider information across data submitters, when a data submitter does not have the information available, it is often better for them to leave the field null than to impute the information.

Applying this to VHCURES 3.0, Onpoint would suggest updating the submission requirements for submitting provider information. We recommend prioritizing provider information that is required for creating a robust master patient index and downgrading data elements that may create confusion in order to optimize the assignment of a master provider index. Onpoint would use this approach for all provider roles that are submitted (rendering, billing, prescribing, etc.) See the table below as an example.

Provider Attribute	Prioritization	Priority where no NPI provided
NPI	High	NA
Submitter Provider Identifier	High	High
Provider Name (last, first)	Medium	High
Provider Name (organization)	Medium	High
Provider Name (middle)	Low	Low
Provider Tax ID	Low	Low (if rendering provider) Medium (if billing provider)
Provider DEA	Low	Medium
Provider DOB	Low	Medium

In addition to this prioritization, Onpoint would suggest changing the state's data submission rule to ensure that the provider attributes being requested are available to the data submitters. Using the tax ID, as an example, on the claims submission, most APCD's request this information for the rendering provider. However, since the billing tax ID is what is submitted on a claims form, submitters must impute the value for the rendering provider and therefore the value can easily be assigned to the wrong provider. This inconsistency decreases the accuracy of the master provider index. Onpoint recommends aligning the submission requirements with the information available on the claim form, and would prioritize the submitter's tax ID for the billing provider rather than the rendering provider's.

3.4 Data Warehouse, Analytic Enclave

Onpoint is currently offering our Analytic Enclave product as a trial to the GMCB and so far, the feedback has been very positive. We've demonstrated version 2.0 of this product which we expect to be more user friendly, have a better support model and cost less. The new model will be available in the Fall of 2017.

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3.4.1 Secure Container

We can subset the VHCURES data into different slices of the data to meet many different use cases and provide only the necessary user and/or role-based access to these datasets. For example, we could provide a full VHCURES slice that would contain the entirety of the APCD database and provide the GMCB with access to this schema. We could then make available a de-identified Safe Harbor dataset using the CMS de-identification rules and make this data available to the necessary groups/users while not compromising the security of the full APCD database. We would work with the GMCB to further understand these requirements to implement them in the Analytic Enclave.

3.4.2 Controlled Access

As mentioned above, we have the ability to release different slices of the full VHCURES database to different groups/users based on their DUA's. We have the GMCB JIRA system setup to capture future access requests for granting and revoking access to the data/system and as part of Onpoint's Information Security Program, we review all access to all systems on a monthly basis to ensure access control is kept up to date. Full database logging is turned on in the Analytic Enclave. All database logs are written to a dedicated S3 bucket for auditing purposes.

Auditing of result sets by the requestor prior to release could be accomplished by first setting up a well-documented business process to define how the data approval process should flow and then implementing a system to facilitate this. One lower-cost possibility is to leverage the AWS S3 system along with some automated quality check procedures to ease the administrative burden. We could allow users to "put" files into a "waiting for approval" S3 folder for the GMCB to review. Once reviewed and approved, the GMCB could place the work product into an "approved" folder where the user could pick it up. All the appropriate access control could be built into the S3 system. Another, more sophisticated, higher-cost possibility is to build this capability into the Onpoint CDM portal. This is perfectly conceivable and the timing is right as we're currently rebuilding the front-end. We could build a data request/approval process into the portal and automate the process where possible. We've built similar review and approval processes into our Performance Reporting Portal and will be building similar functionality into the waiver process in the new portal.

In regard to the necessity of providing an extract of the VHCURES data outside of the data warehouse for database auditing (as the example given in the RFI), we can continue to provide text file extracts to users as needed via SFTP.

3.4.3 Improved Processing Capability

In the Analytic Enclave we're leveraging AWS Redshift with great success. The GMCB trial users have been very impressed with the performance so we would continue using Redshift as long as it's meeting the GMCB's needs. As more users are permitted access to the Enclave and as more data is made available in the Enclave, the environment can scale out to several hundred nodes with little impact to the users (the database goes into read-only mode while rescaling).

The current GMCB trial Enclave has Python and R installed. Onpoint has experience with SAS, Tableau and Microsoft Power BI as well as other tools and can work with the State to make available the tools necessary to be successful.

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3.4.4 Data Management

Much of this section was addressed in section 3.4.2 related to the appropriate release of data to users. We have experience building similar approval processes into a web interface and could leverage that experience for building a data request/approval process into the CDM user portal. This portal could capture, store, and make available the necessary documentation to approved users. From an administrative perspective, Onpoint has the staff to follow-through on data requests as appropriate and work with the GMCB to determine what additional information is required and to obtain approval for requests.

3.5 Public Use Data and/or Analytic files

As the current vendor for the VT APCD, we are already working collaboratively to develop and generate publicly available datasets. Onpoint is looking forward to showcasing our current products that can be leveraged for this initiative. Some of the already available datasets used to make APCD data publicly available are:

- Claims level public use file - available with three different levels of masking PHI including following the rules of the HIPAA Safe Harbor Method.
- Aggregated public use files – summary level files following CMS rule of redaction where there are less than 11 records.
- Use of the Zip Code Tabulation Areas (ZCTAs) to only provide the first 3 characters of the zip code and masking areas where the population is less than 20,000.
- Analytic summary file – claims level table that includes limited data elements and combines medical and pharmacy claims into one easy to use table.
- Member level analytic files – summary data at the member level using Onpoint's unique ID as the basis for summarization. Examples of available data sets are member month tables, member to provider attribution tables, disease flagging, inpatient discharges, and quality and utilization tables.
- Exclusion of sensitive data – In order to make data publicly available, it is often required to remove sensitive data prior to release. Onpoint CDM includes functionality that applies multiple flags to every record as to whether or not that record includes sensitive data. These flags are then used during the data extract process to include or exclude these records for the resulting data set. Examples of these flags include:
    - Substance abuse
    - Mental health
    - HIV
    - Abortion records
- Additional value adds can be made available to end users that may not be accustomed to working with a full APCD data set such as a service line flag that categorizes the type of service provided on each medical claim record. Categories include, but are not limited to, endoscopic procedures, lab & pathology, preventive screenings, and evaluation & management visits. These

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flags can be delivered in a hierarchical fashion, assigning one flag for every record (preventive visit being assigned the preventive visit flag rather than the evaluation & management flag), or horizontally, assigning more than one flag to a record (a preventive visit being assigned both the preventive visit flag and the evaluation and management flag).

3.6 Other Considerations

3.6.1 VHCURES Rule Changes

Onpoint is ready to adapt to legislative/rule changes as they develop. We have in the past with *Gobeille* decision and with the ACO agreement with CMS.

3.6.2 Lock-Box for Master Person/Provider Indexes

Covered in Section 3.2 above.

3.6.3 Proprietary/Licensed versus Open-Source Software and Products

Onpoint's Claims Data Manager (CDM) system is delivered in a Software-as-a-Service model where we develop, test, manage, and operate the system end-to-end using commercially available and open-source technologies. Onpoint CDM has been continuously enhanced over time – from data validation and analytic enrichment to dissemination models – and all enhancements are shared across our client base. As a nonprofit organization, we are able to deliver services cost effectively and to reinvest the surplus we generate into product and system enhancements (rather than to investors), which provides the highest possible value to clients.

The future, cloud-based system, is being architected to offer more flexible and robust capabilities leveraging the cloud and distributed computing technologies. The new front-end design could also conceivably provide client's more ownership and management of the software, if that was of interest. In addition, our shift to the industry-standard AWS cloud platform will ensure that our technology does not become obsolete.

3.6.4 Collaborative Implementations

We see multiple, feasible opportunities to increase the utility, comparability, and efficiency of individual statewide APCDs through effective collaboration across states and regions. Inherent in many of these opportunities is the ability to deliver services more cost effectively. The following is a set of potential areas for collaboration:

- Efficiency through standardization – Among the most significant opportunities for increasing the efficiency and value of APCD programs is through standardization across programs. Possibilities include:
    - Common Data Layout – The efforts led by NAHDO and the APCD Council to create a common submission format across ACPDs is an effort to not only address the loss of self-funded data that resulted from the *Gobeille* decision via an ERISA regulatory strategy but also an effort to enhance efficiency for health plans that are having to comply with a rapidly growing number of data initiatives across the country. While there are limitations of the CDL, particularly for public payer data collection, it is an important initiative aimed at efficiency improvements and cost savings.

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    - Nationalizing standards and data accessibility – One model for collaboration across states is Healthcare Cost and Utilization Project (HCUP). The state inpatient discharge (SID) data program includes inpatient discharge records from community hospitals in a participating state (now numbering 48). The SID files encompass all patients, regardless of payer, providing a unique view of inpatient care in a defined market or state over time. Developed through a federal-state-industry partnership sponsored by the Agency for Healthcare Research and Quality, HCUP data inform decision-making at the national, State, and community levels. This model could possibly be extended in collaboration with AHRQ to APCDs, is our thinking, creating a set of national standards and/or data repository.

- Comparative analysis and reporting – Cross-state comparative analysis and benchmarking would add significant value to state and regional APCDs and would be greatly enhanced by consistency in collection standards and in the approach to analytic enrichment, a point already highlighted above. That said, given the challenge of syncing up disparate collection requirements and associated regulations and unique regional or payer-specific issues, Onpoint has had success normalizing data across individual APCDs on multiple occasions in the past, including a groundbreaking Vermont legislature commissioned Tri-State Variation study of utilization and quality across northern New England. Beyond that, Onpoint has supported cross-state APCD analysis in the 2013 Dartmouth Atlas of Children's Healthcare project and the 2014 Dartmouth Institute-led multi-state Health Partners' Total Cost of Care collaborative in which Onpoint fulfilled a data management and measures generation role.
- Analytics User Community – We see a real opportunity for expanded learning across state mandated and voluntary data and analytic initiatives. This is an established role of the APCD Council and their role and resources could possibly be bolstered in a number of ways, depending on state member interests. For starters, their analytics showcase could be supplemented on an ongoing basis with webinars that spotlight these innovative analytic uses. There are also training and skills development offerings that could be created that would have universal appeal and could be funded across multiple members. Common interests might include the use and associated challenges of third party analytic tools or risk adjustment models, for example.
- Advocacy – There's an immediate need for increased resources dedicated to advocacy at a national level, in our opinion. Long term success of APCD programs will require recovering lost ground around self-funded data access and, more recently, the limitations in access to Substance Use Disorder data, for example. A more robust, sustained, and appropriately resourced advocacy function that is well coordinated among NASHP, APCD Council, and NAHDO is needed.
- Sustainability – Ongoing funding for APCDs will depend on demonstrating value to stakeholders within each state and nationally. This requires maintaining close touch with current and emerging information needs and a related, effective communication strategy. Communication and collaboration across states is an effective vehicle for surfacing new data uses, funding sources, and opportunities to share costs to fund mutually beneficial project and systems development. A recent example is the collaboration around Medicaid IAPD funding of APCD programs that many states have effectively pursued.

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- Shared infrastructure – An option worth considering, we believe, that we have discussed in the past with the GMCB and other clients that could potentially offer significant benefits regionally to individual states and data submitters would be to create a New England-wide APCD solution. The solution could involve single submission across states for submitters and access to data across the entire region for individual states and approved users. The initiative could offer substantial cost savings and a more robust data resource. It would require a joint governance strategy and could potentially garner outside funding for startup. It could also serve as a proof of concept for adoption of a Common Data Layout.

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