NEHEN 3.0 RFP

This RFP outlines services and features MHDC plans to include in NEHEN 3.0, a re-envisioned and modernized version of its current NEHEN service line. These services will be split into phase 1, services we intend to implement and that will be the focus of this RFP, and phase 2 and beyond, services that may follow on later and that may be pertinent to the way phase 1 features are implemented but are not expected to be part of any initial award based on this RFP.

MHDC is supplying several appendixes to provide background information or other details respondents may find helpful but that might already be known by or considered unnecessary by others. Please feel free to review or skip this material as you see fit.

Overview

This RFP is split into several sections to best outline our needs. Each of the areas outlined below will be addressed in more detail throughout the rest of the RFP.

Identified Need for NEHEN 3.0

NEHEN aims to enhance health data exchange and process automation for payers and providers in the coming years. NEHEN is evolving from NEHEN 2.0 to NEHEN 3.0 to incorporate clinical and other patient data, aligning with technological advancements, industry changes, and regulatory requirements. This evolution seeks to streamline business processes, reduce administrative burdens, improve healthcare quality assessment, and otherwise support industry health data needs.

MHDC anticipates that NEHEN 3.0 will likely require multiple vendors. We encourage vendors to provide an honest evaluation of their current capabilities, their investments in standards-based exchange and automation, and their suitability for specific services outlined in this RFP.

Functionality

We are looking to support features in the following major functional areas:

- X12 EDI transactions
- FHIR infrastructure
- FHIR use cases
- Use case-specific NEHEN services

X12 EDI Transactions

The first vendor capability essential to NEHEN 3.0 is to update and improve the value of NEHEN 2.0’s existing X12 EDI services.

FHIR Infrastructure Support

A major component of this project is supporting FHIR APIs for clinical and other data exchange. In addition to basic API support, vendors are asked to demonstrate capability in necessary components such as identity management, endpoint routing, security, provenance management, code mapping and translation, and more. This includes conversion between X12 and HL7 FHIR for prior authorization, referrals, and other necessary transaction types with HIPAA-mandated X12 requirements.

FHIR Use Case Support and Related NEHEN Services

NEHEN also intends to support key FHIR-based exchange use cases starting with prior authorization and quality measures exchange using the core FHIR infrastructure above. In addition to passthrough API support and related
workflows, MHDC intends to stand up NEHEN-operated services for some features for customers who prefer not to stand up their own backend processing.

Future Requirements
This section provides insights into some of the ways we expect the NEHEN services to grow over time and is meant to ensure vendors understand our vision and do not make decisions that make it more difficult to support our future direction.

Functional Requirements
The Functional Requirements section is the heart of this RFP. It details what MHDC requires of all vendors regardless of which features or use cases you are supplying to NEHEN. Specific functional requirements are organized under the business relationship requirements, overarching technical and operational requirements, specific infrastructure requirements, vendor coordination, and graphical user interface requirements categories.

Pricing
This section will outline MHDC expectations around pricing, particularly our approach and key principles around pricing, seek vendor information about willingness to comply with these principles, and solicit details around vendor expectations for pricing and payment.

Instruction to Vendors
This section contains general instructions, an overview of response expectations, and an RFP timeline. A companion document — NEHEN 3.0 RFP Response — will outline our expectations for the contents and format of responses in detail.

Evaluation Criteria
MHDC will use a set of evaluation criteria that separately evaluates vendors looking to support specific aspects of the service and does not unfairly disadvantage a vendor because they are only looking to support a subset of functionality.

Appendixes
This RFP includes multiple appendixes that provide background information and other insights that may help vendors better understand our history, thoughts, decisions, and plans. Reading this material is not required to prepare a successful response to this RFP but we are making it available to those who wish to have the additional insight.

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About MHDC

The Massachusetts Health Data Consortium (MHDC) is a nationally recognized, regionally focused health data services organization. MHDC is a collaborative body that convenes a diverse group of healthcare stakeholders, including healthcare organizations, trade associations, technology companies, policymakers, researchers, and consumers from Massachusetts and the New England region. Established in 1978, it is now a key contributor to national health data initiatives and a significant influencer in the state's healthcare landscape, promoting data, technology, and collaborative strategies to advance healthcare.

MHDC currently consists of four service offerings:

- Analytics
- Consulting and Education
- Data Governance
- Health Information Exchange

This RFP revolves around modernizing and expanding our Health Information Exchange service, the New England Healthcare Exchange Network or NEHEN. We are calling this project NEHEN 3.0.

More about MHDC, its current service lines, and future areas of focus can be found in Appendix A: About MHDC. A brief history of NEHEN can be found in Appendix B: History of NEHEN.

NEHEN Now

NEHEN currently provides a secure electronic data interchange (EDI) infrastructure to facilitate the exchange of administrative and financial data among its participant organizations.

Today NEHEN uses a subscription model where participants access an array of exchange services including real-time integrated (Core API) transactions, online real-time portal transactions, batch-mode exchange services, and other features such as reporting, tracking, and automation capabilities for a single fee.
NEHEN processes more than 3.8 million transactions per week. Approximately 93.6% of those are eligibility verification (270/271) transactions (averaged over time). We also process a significant volume of electronic referral authorization transactions (278) averaging over 8,300 per week; we believe NEHEN processes more referrals than other X12 EDI transaction platforms. However, in terms of total transactions, referrals average about 0.2% of our transaction traffic. Claims status inquiries (276/277) average about 4.3% and claims and payment remittance transactions (837/835) average around 1.9%.

More information about the current incarnation of NEHEN (called NEHEN 2.0 in this RFP) can be found in Appendix C: The Current State of NEHEN.

Identified Need for NEHEN 3.0

MHDC is committed to widespread, consistent, standardized data exchange. REST APIs offer a scalable, standards-based online mechanism for such exchanges that define communication interfaces and the data supported within them without requiring organizations to open up their internal systems to exchange partners. REST APIs in healthcare are typically defined within the HL7® FHIR® API framework. Among other things, this framework provides an extensible way to define specifications, called implementation guides, consisting of collections of structured data and the CRUD API operations that can be performed on them within a series of named resources each representing a particular person, place, or thing within the healthcare ecosystem.

At the same time, continued and improved support for X12 EDI transactions is essential. These transactions remain the backbone of administrative and financial healthcare data exchange as mandated by the HIPAA Administrative Simplification rules. Some of these transactions have been widely supported for years or decades and with such experience and the refinement of systems it brings should come the ability to provide more efficient, more cost-effective transactions.

MHDC is looking to extend our current X12 EDI services to also support FHIR for those participants ready to implement it (or being mandated to do so by current or upcoming regulations). We are looking to offer more performant, cost-effective X12 EDI transactions than currently available through NEHEN 2.0 while expanding to support critical new workflows using FHIR, X12, or both.

MHDC has been exploring what a re-envisioned NEHEN 3.0 service should support. In addition to improved X12 EDI services, we have a strong group commitment to solve challenges around clinical data exchange and related use cases. To support this mandate, this RFP contains four parallel tracks:

1. Updating existing X12 EDI services to offer the best overall value.
2. Incorporating core FHIR support and the related infrastructure components such as identity management, endpoint routing, security, provenance management, code mapping and translation, and other required support services. This includes conversion between X12 and HL7 FHIR for prior authorization, referrals, and other necessary transaction types with HIPAA-mandated X12 requirements.
3. Automating key FHIR-based exchange use cases – initially prior authorization and quality measures exchange - using the core NEHEN infrastructure.
4. Offering NEHEN-operated features supporting each use case for users who do not want to perform independent backend processing.

We expect the full solution may require more than one vendor. We request vendors provide honest evaluation of their current state and future capabilities in response to the RFP, and focus on areas they are best suited to handle and outlining why they are a good fit for those components.
MHDC expects to use a staged deployment model leveraging agile methodologies and iterative processes to expand functionality over time. Our goal is to have the service with agreed upon initial functionality live in full production by January, 2026, with incremental deployments thereafter on a schedule to be determined later. MHDC expects 2024 and 2025 to be spent in the design, build, integration, and test processes (which may involve prototype projects or limited production use).

**Vendor Requirement G-R1:** We expect the full NEHEN 3.0 solution will require integration across vendors and a team of teams approach. We are looking for vendors to assist with the process components as well as the technology itself. Please indicate if you are looking solely to provide technology for NEHEN 3.0 or are interested in supporting process components as well (or if you are only looking to assist MHDC with the process of building and maintaining NEHEN 3.0, indicate that). Regardless, please describe your capabilities for managing vendor relationships and, if looking to supply technology, discuss the specific existing or planned (by end of 2024) integration points with your solutions.

We welcome vendors who wish to submit a joint response so long as a primary vendor is indicated, all vendors involved in a solution are listed in the response, and we understand who is responsible for which components. Whether responding individually or as a group, vendors should be clear regarding which NEHEN 3.0 capabilities they wish to support or not support and should be available to engage in the various steps of the vendor selection process.

In addition, MHDC would like to understand your capabilities to manage or support MHDC management of the infrastructure as a whole and operational needs such as overall system security, workflow and process coordination, technical infrastructure connectivity (for example, ensuring that creation of a NEHEN user account bubbles through the whole system to permit end-to-end use of the relevant features and logging that’s attributable to a specific user), support coordination (documentation, maintenance, testing, customer/technical support, etc), and other similar tasks. We will ask about these later in the RFP.

**Capability 1: X12 EDI Transactions**

NEHEN is interested in supporting existing X12 EDI exchange transactions in this RFP in a more performant, economical, and scalable way as well as supporting new transactions or new versions of transactions and operating rules as they are adopted into HIPAA.

Some of the specific requirements for X12 EDI support include:

- Integrated node API transaction services and EHR integrations with all major ambulatory and inpatient EHRs for at least claims 837, eligibility 270/271, referrals 278, claim status inquiry 276/277, and error reporting 999
- Batch mode transaction processing for all supported transactions in the current NEHEN-specific batch format or something very similar
- Patient benefits eligibility/coverage discovery allowing users to determine both which payer(s) cover particular patients and the list of services covered for specific patients by a particular payer
- Mapping specific service transaction codes (STC) to specific NPI numbers to limit the information returned by the patient benefits eligibility/coverage discovery service to only those services applicable for the requesting physician
- Provider directory services sufficient to support referral transactions

NEHEN will look favorably on vendors who also support the following:

- A robust network of existing payer trading partners including all national and government payers
- If not able to search all payers at once, the ability to define client-specific groups of payers to use with the patient benefits eligibility/coverage discovery “which payers cover a specific patient” feature (for example, a
group of all payers with Medicare plans for patients who say they have Medicare coverage but don’t know their specific payer)

We are looking for vendors interested in quickly supporting new versions of X12 as they are adopted into HIPAA standards, new CAQH CORE operating rules as they are adopted, and in assisting with necessary transformations between X12 and FHIR.

**Vendor Requirement C1-R1:** Vendors interested in responding to this capability should detail their X12 support for both individual and batch transactions, their approach to adopting new versions of X12 standards, their approach to supporting CAQH CORE operating rules, their experience with data mapping (particularly between X12 and FHIR if they have any), their current reporting capabilities, and how they believe they can improve on the processes and practices outlined in the NEHEN 2.0 section above.

**Vendor Requirement C1-R2:** Please discuss your ability to support an existing NEHEN-specific tabular batch format and describe any batch/bulk formats you currently support for X12 EDI transactions.

**Vendor Requirement C1-R3:** Please describe all existing relationships with payers in Massachusetts including existing support for X12 transaction services. In addition, please outline your existing relationships with national payers including listing any national payers you support without any additional passthrough fees from the payer and which payers (if any) NEHEN users would need to pay extra fees for transactions above any standard NEHEN charges.

**Vendor Requirement C1-R4:** Please discuss your support for a patient benefits eligibility/coverage discovery service in detail including how it works, whether there are limits to the number of payers searchable for patient coverage in one request, support for defining groups of payers to search at once if such limits exist, support for mapping physicians to service type codes to filter responses, and other features of your service. If you do not currently support this service, please outline your plans to support it in the near future including expected features and planned full production support date or your willingness to implement it for NEHEN as part of the initial offering.

**Vendor Requirement C1-R5:** Please discuss your ability to support a provider directory to support referral transactions and whether your provider directory could be used more generally including for FHIR-based electronic prior authorization transactions. If NEHEN included a separate FHIR-based provider directory for internal use could you supply it or leverage it? What interfaces do you support for provider directory information?

### Capability 2: Core FHIR Infrastructure

NEHEN intends to support passthrough FHIR connectivity between payers and providers in any combination and in both directions. In the future, support for third party patient-facing apps may be added. We also intend to support translations between HIPAA-mandated X12 data formats and corresponding FHIR resources as part of these core FHIR services.

Initially, we intend to support FHIR r4.0.1, US Core v 6.1.0, Bulk FHIR v2.0, SMART on FHIR v2, FHIR subscriptions r5 model (backported to r4), CDS Hooks v1.1, CQL v1.5, OAuth 2.0, and any other standards identified as necessary during the RFP evaluation process and service design, development, testing, and implementation. FHIR features or implementation guides that are not use case specific (such as the Da Vinci CDEX implementation guide) will also fall under NEHEN core FHIR support. MHDC also notes that as industry standards and regulatory requirements change and iterate, NEHEN may wish to move to more recent versions of some of these specifications.

We plan to make using FHIR as easy as possible and provide a glidepath for organizations using flat file data exchanges via Secure FTP or invasive direct data access or other current mechanisms for limited data exchange to move to FHIR and expand the amount and type of data they exchange as that exchange becomes easier, more automated, and more
consistent across exchange partners.

**Vendor Requirement C2-R1:** We seek vendor comment on existing FHIR r4 support, supporting specific IGs, experience with SMART on FHIR, experience with bulk FHIR, actively deployed implementations, deployment to the cloud, version support for various components, experience routing transactions to one or more destinations, load balancing transactions, experience with identity services, experience with consent, experience with provenance, experience ensuring transactions are secure, experience with transaction logging, experience with transaction reporting, and experience with any other aspects of core FHIR infrastructure you wish to comment on.

**Vendor Requirement C2-R2:** Please describe your existing support for X12-FHIR mapping for HIPAA-mandated X12 transactions and outline any existing projects using these mappings and what barriers they faced. Please address whether you use any industry-standard mappings or develop your own and whether all conversions are supported in both directions. Please note whether you include any indication that the data was converted in the resulting output and/or any other provenance information related to the mapping. Please discuss your confidence levels in the mapping (that the resulting data is a 100% match to the data supplied in the original format) and any other information you believe relevant to this area.

**Vendor Requirement C2-R3:** Please address how you will support a glidepath from other types of existing clinical data exchange to FHIR-based exchange services for users currently using flat file exchanges over Secure FTP, direct data access connections, or other less desirable exchange mechanisms.

**Vendor Requirement C2-R4:** While specifying core infrastructure, we are looking for a long-term partner. We require your solution to be scalable, performant, and not to base design decisions on specific use cases or solely on initial requirements. Your solutions should be able to support not just the phase 1 use cases but future use cases leveraging the same core infrastructure (for example, price transparency-related data exchange). We also expect your solutions to incorporate new versions of standards and to support new regulations as they become relevant. Please discuss how your solution(s) will be adaptable to these changes.

**Capability 3: FHIR Use Cases and Related NEHEN Services**

MHDC intends to focus on two initial use cases for FHIR-based data exchange, listed in our preferred priority/order:

1. electronic prior authorization
2. quality measures exchange

We have clear requests and defined needs for data exchange in both areas and may work on them serially or in parallel depending on regulatory activity, customer priority, vendor support, and other factors. Collectively, we consider their implementation phase 1 of NEHEN 3.0 regardless of how many iterations they encompass. This RFP is focused primarily on these FHIR use cases and we expect respondents to concentrate on them.

As we develop these use cases, there may be functionality that cuts across use cases or that may be pertinent to only one current use case but may be needed by future use cases. MHDC expects to be able to reuse that functionality when needed rather than standing up duplicate functionality when at all possible. For example, supporting the standard prior authorization workflows requires using a provider directory to select the clinician providing requested services (and the relevant service location if they practice at multiple locations). The quality measures use case does not need access to this type of information, but a future price transparency use case might need to leverage it to support convening providers gathering the information needed to build a comprehensive good faith estimate. MHDC would look favorably on prior authorization solutions that would allow such reuse either by opening up their directory services via standardized APIs or via developing the service as a separate module (for instance, by using a microservices-style architecture where certain microservices could be accessed by any NEHEN service, not just those provided by the vendor
developing that service).

**Vendor Requirement C3-R1**: MHDC welcomes vendor thoughts on supporting functionality that could be used by other vendors within the NEHEN ecosystem either by using a modular development approach or supporting standardized APIs or via some other approach. MHDC will give a bump to vendors willing to offer common support for functionality that may be useful beyond their initial purpose in a specific solution over those that will not or cannot offer this option.

**Capability 3A: Electronic Prior Authorization Use Case**

Prior authorization has been a focus of lawmakers, regulators, and the industry as a whole for some time. There’s a lot of push and pull around its uses and its burdens. CMS is working on a rule to mandate electronic prior authorization and increased sharing of related (and other) health data among payers, providers, and patients. ONC is expected to produce a corresponding rule covering prior authorization-related certified health IT (and possibly other things) later this year. Massachusetts is considering a state-wide requirement for automated prior authorization across all payers and payer types (compatible with but more expansive than the CMS rule).

MHDC and NEHEN have been working on projects to improve prior authorization processes and reduce related administrative burdens for years, starting with a NEHEN pilot project in 2017 and, most recently, an MHDC prototype project using the Da Vinci CRD FHIR implementation guide to determine when prior authorization was needed for a service. While the prototype was ongoing, MHDC simultaneously worked with the Network for Excellence in Health Innovation (NEHI) to convene The Automation Advisory Group (TAAG) to provide feedback on existing options for automation. Using this feedback and experience from the MHDC prototype project, MHDC and NEHI made recommendations for standardized electronic prior authorization rules to be adopted across the entirety of Massachusetts.

More information about prior authorization, related MHDC activities, and the MHDC/NEHI recommendations can be found in Appendix D: Prior Authorization Background.

**Vendor Requirement C3A-R1**: We are looking for a vendor and solutions to share in the journey changes to prior authorization expectations, regulations, and practices will require. Please respond with how you are uniquely positioned to address the currently proposed rulemaking and standards evolution as a partner and industry leader.

**Initial Features**

We envision several aspects of any NEHEN electronic prior authorization program (in keeping with our overall approach, these may be delivered iteratively over the course of multiple releases):

1) Coverage Requirements Discovery exchange using the Da Vinci CRD IG

The most basic NEHEN prior authorization service involves providers making a CRD request directly to a payer to determine if a specific patient needs a prior authorization to receive a particular service. The provider would indicate the requested payer in a request to NEHEN, NEHEN would route the transaction to that payer’s CRD endpoint, the payer would respond to NEHEN, and NEHEN would route the response to the original requestor. Each CRD transaction must include a unique transaction ID supplied by the payer that can be used later to confirm the response provided to the request. The Da Vinci burden reduction workgroup for CRD is working on the mechanism for this unique ID at this time. We would expect a solution provider to be compliant with the direction established by the Da Vinci IG.

2) End-to-End ePA support using the CRD, DTR, and PAS IGs

NEHEN will also offer a complete end-to-end ePA transaction set moving from CRD to DTR to PAS. Each relevant API request would go between the payer and provider but would use NEHEN as a routing service to ensure the transactions are sent to the correct endpoints. The entire flow must include the same unique transaction ID associated with the PA request as a whole as well as unique call IDs for each individual API call.
3) Direct CRD responses from NEHEN

In addition to brokering transactions between payers and providers, NEHEN intends to stand up a direct CRD service for those payers who wish to use it. This model works the same way as the previous model for the provider, but instead of routing CRD API calls to payer endpoints for servicing, calls to payers enrolled in this service would be routed to a central NEHEN CRD server containing payer-supplied coverage rules. The NEHEN server would respond to provider requests using that data and log each response made (including a unique transaction ID).

At a minimum, this service must include a mechanism for accessing responses to individual requests based on the transaction ID so payers have visibility into the responses providers are getting to their requests. In addition, MHDC would like some sort of direct reporting mechanism about specific CRD requests (either individually or via some type of criteria defined by a query) in addition to the required cumulative reporting required by regulations. We seek vendor advice on the request reporting mechanisms and contents but MHDC will give preference to solutions that permit API requests for data about a specific transaction ID as an option.

4) Ability to check status of PA request

NEHEN must include at least one mechanism for checking on the status of a prior authorization request using its unique transaction ID. If the PA request was denied, the response to the check must include the denial reason. MHDC will prioritize solutions that include an API for this purpose but will entertain other options respondents wish to propose.

Vendor Requirement C3A-R2: Comment on your ability to implement any or all of these four items. Please specifically address your ability to follow the Da Vinci implementation guides, use of unique transaction IDs, reporting mechanisms, and ability to check on the status of a PA request as appropriate as well as anything else you think is applicable or would help us assess your ability to support this use case as envisioned.

Vendor Requirement C3A-R3: Please discuss your approach to the necessary provider directory component of a prior authorization solution. Does your solution already include this feature? Do you expect one to be available and, if so, in what format? Should NEHEN support its own provider directory separate and aside from your prior authorization solutions? If NEHEN supports a FHIR-based provider directory as part of its centralized FHIR infrastructure could you leverage it? Could you leverage a centralized provider directory using any other interface?

Capability 3B: Quality Measures Exchange Use Case

MHDC and its Data Governance Collaborative have been working with the payers and providers in Massachusetts to standardize data and exchange methods for quality measures for years. Industry activity to improve and modernize quality measures data and related data exchange have been growing, with efforts from CMS, NCQA, ONC, HL7, Da Vinci and more all ongoing. MHDC sees quality measure support as a core use case for NEHEN 3.0, one that is a natural extension of our current work in this area.

More information about quality measures and related MHDC activities (including the existing MHDC Quality Measures specification) can be found in Appendix E: Quality Measures Background.

Initial Features

We envision several components of any NEHEN 3.0 quality measures exchange program (in keeping with our overall approach, these may be delivered iteratively over the course of multiple releases):

1) Support for exchange of USCDI+ for Quality via FHIR and/or some other defined common pot of data incorporating the data needed for quality measures.

One approach to quality measures exchange is exchanging all data needed for quality measures calculations in one fell
swoop. This approach has many benefits including the ability to expand a common pot of data to cross use cases and only exchange necessary data once regardless of how many different features use that data.

Once finalized, and assuming it meets the needs of our potential users, the USCDI+ for Quality is a logical place to start to develop a common set of quality measures data to exchange. However, it likely will not be sufficient. While it defines a significantly more expansive data set than currently within the existing MHDC Quality Measures specification (which was designed collaboratively with the quality measures needs of Massachusetts healthcare organizations in mind), the draft release also omitted data deemed essential by our constituency. Thus, we may use USCDI+ for Quality as a baseline and expand upon it or combine it with a specification/IG specifically designed to support current users of the MHDC specification (see Appendix E: Quality Measures Background for more information about our existing specification and thoughts on adapting it for use with FHIR and NEHEN). MHDC would own any such specification and likely make it available for public use by any interested parties regardless of whether they are NEHEN customers.

Depending on usage patterns, a common pot of data sitting at a payer or provider organization could be updated on a set cadence (daily, every X hours, every Y days, etc.) and/or immediately before major calculations are set to commence.

While we plan to focus specifically on quality measures data for now, we envision expanding this common pot of data over time (after the completion of phase 1 of NEHEN 3.0 as outlined in this RFP). See Appendix F: Future Vision for more information about potential plans in this area.

**Vendor Requirement C3B-R1:** We seek comment from respondents on their approach to onboarding potential customers currently using pipe delimited data in text files exchanged via Secure FTP as well as any other comments they may have on what is needed to support current users of the MHDC Quality Measures specification or similar file exchanges via a common pot of data approach.

**Vendor Requirement C3B-R1A:** Please confirm your willingness to support a direct glidepath to NEHEN (and related onboarding considerations) for current users of the existing flat file, pipe-delimited MHDC Quality Measures specification.

**Vendor Requirement C3B-R2:** We seek comment from respondents on their ability to service large data exchanges, the frequency of updates they feel they could reasonably support, and on any specific needs related to exchange of a large common pot of data (based on USCDI+ for Quality or otherwise) to better support our users choosing this model.

2) Support for the Da Vinci Data Exchange for Quality Measures implementation guide to send quality measures data specifically requested by a particular measure as defined using the Da Vinci Quality Measures implementation guide and the underlying QI-Core implementation guide setting national standards for the data needed for quality measures.

Most current electronic quality measures exchanges are designed around individual measures. The Da Vinci Quality Measures IG provides a mechanism for defining a measure that can be used with the Da Vinci Data Exchange for Quality Measures IG to send the specific data needed to calculate that particular measure.

**Vendor Requirement C3B-R3:** We seek comment from respondents who have already implemented exchange using these IGs and those who have investigated doing so. Does plugging in a new measure compliant with the Quality Measures IG work seamlessly without the need for additional work? How often do you run into issues getting the requested data in the requested formats?

**Vendor Requirement C3B-R4:** We seek comment from any respondents who have digitized measures using the Quality Measures IG about the process, their testing mechanisms, and anything else they feel we might find useful and relevant.

**Supporting Two Approaches**

Because the industry has not entirely landed on a preferred solution, we feel it is important to support both option 1
and option 2. Users should have the ability to choose their approach to quality measures depending on their specific needs – and to change their mind later if they made the wrong choice or if their needs change. When asked why approach 2 was used in Da Vinci implementation guides, the answer has generally been that the industry was not ready for more comprehensive/complete data exchange. We believe it is ready now. However, there are benefits and drawbacks to both approaches and, while MHDC has long favored an approach that defines a common pot of data to exchange across all use cases, we acknowledge the industry may not be ready for such an approach at this time.

We also note that the two approaches are not entirely mutually exclusive. An organization can choose to use the common pot of data style data exchange and still use an internal FHIR data exchange or FHIR resources stored in a centralized FHIR repository to fulfill the requirements of electronic quality measures.

**Vendor Requirement C3B-R5:** We are open to respondent feedback and comments on this issue but are not likely to change our mind that both approaches are needed, at least for now.

**NCQA Activity**
NCQA also recently announced they plan to develop their own implementation guides, some of which will be use case based and some designed for the requirements of individual measures. Few details are currently available, but we seek comment from respondents on how difficult it might be to switch to these NCQA implementation guides if work is started using the Da Vinci IGs.

**Vendor Requirement C3B-R6:** We understand that there may not be enough information available for complete plans or concrete estimates, but we’d like to hear your current thoughts and best guesses around the NCQA plans and how they might impact any quality measures solution.

**Vendor Requirement C3B-R7:** Comment on your ability to implement any or all of these approaches or provide any additional information we might find relevant that we have not specifically requested. In addition, we are interested in your capacity to keep pace with changes in quality measures expectations (including annual measure definitional updates) and in your existing experience, subject matter expertise, and solutions for quality measures data collection, processing, and reporting.

**Future State**

This section discusses the future of NEHEN generally and specifically highlights features we may consider supporting in the future. At this time, we do not anticipate supporting anything covered in this section during phase 1 of NEHEN 3.0 implementation.

MHDC will expand or update existing NEHEN X12 EDI services as appropriate while building a core FHIR infrastructure and an expanding stable of supported use cases. We intend for the core infrastructure - our base FHIR platform - to be designed and built for general FHIR support and not designed specifically for our first or first few use cases without regard for other general features. We are looking for a scalable, extensible, performant, and affordable infrastructure for both X12 EDI and FHIR.

**Vendor Requirement G-R2:** Please discuss how you will ensure that any solutions you supply to meet core infrastructure or initial use case needs will be able to incorporate and adopt to future changes, new features, new use cases, new regulations, and other potential future needs as appropriate for your solutions.

NEHEN as it currently exists is focused solely on transactions between payers and providers. We plan to continue supporting payers and providers as our main customer base. Our initial use cases continue to involve transactions between payers and providers, but we anticipate supporting other variations (payer/payer and provider/provider) in the future. We currently have no plans to support consumer access to data via NEHEN but we do not want to make any decisions that would preclude supporting use cases requiring consumer access in the future.
You can find a more expansive discussion of our future vision for NEHEN in Appendix F: Future Vision.

**Vendor Requirement G-R3:** Please provide any thoughts and perspectives related to our vision, including our vision for X12, FHIR, and how they will coexist.

**NEHEN FHIR-based Data Exchange in the Future**

**Note:** As a reminder, we are not seeking implementation bids on any functionality included in this section. We welcome general comments if you have them, but our goal here is that you don’t recommend solutions that will make it harder to support these in the future.

As noted above, MHDC intends to focus on two initial use cases for FHIR-based data exchange, listed in our preferred priority/order:

1. electronic prior authorization
2. quality measures exchange

We discussed the baseline functionality for these use cases that collectively form phase 1 of NEHEN 3.0 in the use case section above and see this RFP focusing on the components of these use cases outlined in that section. That said, in the future (phase 2 and beyond) we anticipate adding additional functionality to these use cases as well as additional use cases and functionality to NEHEN 3.0 exchange services (see Appendix F: Future Vision for more information about potential future use cases)

**Potential Additional Features for Prior Authorization**

In addition to the basic ePA support previously outlined, MHDC sees supporting additional prior authorization functionality (likely in future iterations of the service offering) including the following:

1) CRD and DTR managed within NEHEN, only PAS going to payer if needed

If desired, fully automated decision making for some or all prior authorization requests defined by a payer that do not need any manual intervention or decision making. PA requests routed to this services that cannot be automatically adjudicated will be routed to the payer's endpoint for adjudication with information about why it requires direct payer support.

2) Direct support for participant-defined prior authorization guidelines

MHDC also has the expertise to help NEHEN participants convert existing guidelines into FHIR-supported formats

3) Identification, definition, and digitization of common PA requests that payers agree can use the same guidelines across the board.

Some PA requests are almost routinely accepted or have very similar rules across the entire spectrum of payers in the region. NEHEN, leveraging the experience garnered by the DGC, will work with the payer community to determine a subset of requests that fit this bill, drive collaboration to come up with a single specific guideline for each acceptable to all, and digitize that guideline for use within NEHEN’s FHIR ePA ecosystem.

**Potential Additional Features for Quality Measures**

In addition to the basic quality measures support previously outlined, MHDC sees supporting additional quality measures functionality (likely in future iterations of the service offering) including the following:
1) Support for reporting results to providers on demand.

The ability to get reporting on the status of one or more quality measures on request at any time throughout the measure year. Initially this would likely require using Option #3 in the phase 1 quality measures features.

2) Support for participant-defined digital quality measures. Massachusetts payers sometimes define their own quality measures for certain contracts or plan offerings. We envision NEHEN being able to support these measures if desired by their definers.

MHDC also has the expertise to help NEHEN participants define their own quality measures or convert existing quality measures into FHIR-supported formats.

3) Support for interim reporting. The ability to get reporting on the status of one or more quality measures regardless of the mode being used for the exchange.

4) Gaps in Care reporting. Reports on the specific patients missing data needed to improve measure results during the measure year while corrective action can still be taken.

Scalability Across Use Cases

MHDC has identified some potential phase 2 (and beyond) use cases including functionality around price transparency and meeting various regulatory requirements. We believe these will likely change over time, perhaps significantly, but are sharing our current thoughts in Appendix F: Future Vision. We expect vendors to design with modularity in mind and expect ongoing expansions of NEHEN services, functionality, and supported use cases as determined by future needs. Given this, MHDC may look favorably on vendors with experience we feel lends itself toward implementation beyond the current use cases and/or with clear thoughts on potential pathways to supporting a roadmap from our current requests to a future supporting additional future functionality and use cases. We see this as part of developing a long-term relationship with the vendors supporting NEHEN 3.0.

Equity Exchange RFI

MHDC considered including equity exchange requirements based on extensive work by our Data Governance Collaborative. This work focused on identifying the right demographic and SDOH data at the right level of granularity/specificity, particularly in the areas of capturing variations in baseline demographic data, specific disability/accommodations data needed for effective healthcare treatment, and the underlying causes of SDOH issues. The goal of this work was enabling collection and exchange of the data needed for real, meaningful action around health equity.

We decided the industry was not yet ready to support this data and removed it as a third use case in this RFP. The advent of USCDI v3 as a baseline data requirement for collection and exchange is a starting point, but it does not go far enough to produce meaningful, standard, actionable data. However, we are very interested in collecting more information about the current state of available data, how willing and able people are to collect and exchange the data we identified as essential for meeting our goals, and the efforts people are making to improve data availability and standardization in these areas.

Therefore, MHDC plans to produce an RFI in the area of equity exchange leveraging our existing work encompassing both demographic and SDOH data and its exchange via FHIR. We expect vendors selected for NEHEN to prioritize health equity in all of their NEHEN work and to partner with us in our equity exchange efforts. This includes providing additional thoughts on the right questions to ask respondents to address, participating in our evaluation of the RFI responses, and, potentially, supporting related features in the future.

**Vendor Requirement G-R4:** Discuss your approach to promoting equity in your programs and services for those who use them and how you would partner with us on equity in NEHEN including on an RFI covering equity exchange.
Vendor Requirement G-R5: Discuss any experience you have in promoting/evangelizing the collection and/or exchange of data that was not previously widely collected and/or exchanged. Highlight the type of pushback you got and approaches that led to success, if any.

Functional Requirements

This section will outline MHDC’s general approach to NEHEN 3.0, overarching functional requirements for the service, and specific functional requirements for components of the service. MHDC does not intend to outline specific technical requirements except when mandated by regulation or in other limited circumstances. Instead, we ask respondents to the RFP to discuss how they plan to meet the functional requirements outlined below, providing technical, architecture, and design specifics as appropriate.

General Approach

NEHEN is a collaborative community of payers and providers working together to solve complex data exchange and interoperability challenges. We expect the same collaborative, evolving, and adaptive approach from our vendor partners. Innovation as a way of doing business is imperative and we expect an iterative solution that can rapidly adjust to incorporate new technologies, processes, and other innovations deemed appropriate for incorporation into our solution.

NEHEN 3.0 will have a culture of serving the end user and solving technical and operational challenges to the satisfaction of both MHDC and the user. Solutions that are not service oriented or otherwise compatible with this culture will not be considered viable; all related activities required by end users must be included as part of each proposal. MHDC is not planning to host, staff, or manage a team of technical or operational resources to do this work for individual vendors (we do understand there is a coordinating role that needs to be centralized).

Transparency is important to MHDC and we expect visibility into how each aspect of NEHEN 3.0 is being accomplished and delivered. We are not interested in working with vendors who consider their systems black boxes for us to plug into without any view of how they work. We understand some components of solutions may be proprietary and will respect those boundaries when they are explicitly outlined, but we also expect to be able to explain how our systems work (at a high level at least) to prospects, customers, and (perhaps to a lesser degree) the industry at large.

In addition, to further transparency vendors are expected to participate in MHDC participant outreach including presentations related to their features and feedback sessions with customers. An open exchange of ideas, potential solutions, product enhancements, and similar between MHDC, vendors, and the user community is expected. Vendors may also be expected to participate in industry-wide events MHDC hosts or presents at, if their solution is part of the material being covered.

Further, independent vendor participation in industry data and interoperability efforts will be considered as part of evaluating respondents. We will look favorably on active participation in standards development, standards advancement, and industry educational organizations and events. MHDC is in a leadership position in Massachusetts and nationally regarding advancing and adopting interoperable healthcare solutions and we expect our vendor partners to further that and participate with us in these advancements. We encourage respondents to discuss specific participation in organizations such as WEDI, HL7 (particularly specific FHIR accelerators), X12, CAQH, HITAC, and other similar groups.

Feature Independence

As noted above, this RFP contains four parallel tracks:

1. Updating existing X12 EDI services to offer the best overall value.
2. Incorporating core FHIR support and the related infrastructure components such as identity management,
endpoint routing, security, provenance management, code mapping and translation, and other required support services. This includes conversion between X12 and HL7 FHIR for prior authorization, referrals, and other necessary transaction types with HIPAA-mandated X12 requirements.

3. Automating key FHIR-based exchange use cases – initially prior authorization and quality measures exchange - using the core NEHEN infrastructure.

4. Offering NEHEN-operated features supporting each use case for users who do not want to perform independent backend processing.

NEHEN participants should be able to pick and choose among the supported functionality, use cases, and features within each use case. Some customers may primarily remain X12 EDI users for some time to come while others will use X12 and parts of one FHIR use case and still others may predominantly use most or all of the features of all of the supported FHIR uses cases. All of these models and any other iterations are perfectly fine and should be supported.

We will use industry standards to support these tracks as appropriate but may need to go beyond them in some cases. MHDC has considerable data governance experience and we anticipate leveraging it (in conjunction with participant and, as appropriate, vendor input) within the NEHEN 3.0 environment including but not limited to:

- defining specifications or implementation guides
- refining or clarifying existing specifications and implementation guides to ensure consistent definitions and usage
- defining specific workflows and usage models
- digitizing various artifacts needed for FHIR exchange
- providing other data and API related education and guidelines to ensure smooth and consistent operations

Prioritization

Several factors were considered in determining a priority of prior authorization first, quality measures second, and health equity exchange third including our existing work in these areas, the regulatory and policy demands for each, and related industry activity and momentum. We believe all three of these use cases are essential to our participants and we have had requests to support all three (as well as some of the additional use cases currently slated for phase 2).

At the same time, as new regulations and business imperatives arise, priorities can change. We do not expect to change our three selected phase 1 use cases at a high level nor do we anticipate changing their respective priorities, but some of the specifics outlined within the use cases or decisions about what needs to be implemented from the start within a specific use case versus implemented later as part of future services may need adjustments as time goes on.

Capability 4: Business Relationship Requirements

Throughout this RFP the theme has been collaboration, adaptability, and innovation. We carry that forward here outlining the general themes of the business requirements we will be evaluating.

Collaboration

Collaboration entails vendors working collectively with MHDC, other vendors, and NEHEN participants (NEHEN stakeholders) to continually advance capabilities and services and to help stakeholders understand current and planned functionality. We have a shared success story and we have shared challenges to meet. We see NEHEN management (MHDC and our NEHEN service providers) as a partnership; MHDC is committing to our vendors and we expect our vendors to commit to us.

We see this as a dynamic process where there are meetings, presentations, discussions, and corresponding plans on a regular cadence and expect participation from product managers and technical staff, not just business and sales
personnel. Open communication between NEHEN management and, to the extent possible, NEHEN participants is important to us. We are forthcoming with communications and status updates, and we expect the same from our service providers.

We expect a level of direct engagement with NEHEN participants as they have questions or need support with integration or other requirements but also expect full MHDC visibility into these interactions. NEHEN is a collaborative community; MHDC is used to working closely and in lockstep with our participants. If they are having an issue, then we are having the same issue and we means all NEHEN stakeholders. We are open to vendor ideas on how best to accomplish this from a tooling and technology perspective.

We anticipate having a current state, a near-term future state, a medium-term future state, and long-term goals that link together to form a roadmap that we continually progress along to meet the needs of all NEHEN stakeholders. This is especially important in today's regulatory environment where the flow of new requirements is continuous and rapid. We do not see that changing in the foreseeable future and expect there to be even more requirements as capabilities like the FHIR-based API services become more mainstream.

We also see transparency as a key component of collaboration. We expect full visibility into the operations of the services we are supporting from an operational, security, and administrative perspective.

In addition to collaborating on the NEHEN services themselves, we seek vendor partners interested in co-marketing, co-selling, and co-evangelizing NEHEN 3.0. No service like NEHEN 3.0 currently exists in Massachusetts or elsewhere. The potential market for the services envisioned in NEHEN 3.0 is vast, encompassing tens of thousands of billing clinicians; hundreds of practices, groups, and facilities; and over six million covered lives. Achieving success demands a well-thought-out and collaborative marketing strategy and implementation. This includes:

1. Selected vendors agree to work with MHDC and other involved vendors to market NEHEN 3.0 as the preferred solution that advances data exchange and fully complies with national and state regulations while easing administrative burden.
2. Selected vendors are expected to help grow the NEHEN 3.0 community. This includes upgrading existing clients, attracting new ones, and/or participating in collaborative presentations and networking meetings industry wide.
3. Selected vendors should not directly promote/sell competitive solutions to NEHEN 3.0 clients. Vendors may sell unrelated services to NEHEN clients as long as it is done separately from any NEHEN-related activity. MHDC may opt to participate in group purchasing of support services (i.e. setting up a FHIR façade behind the black boxes of NEHEN participants) and expect some consideration from our vendors if we bring them additional business.

In addition, MHDC will give preference to vendors with existing preferred relationships with one or more EHR vendors that makes integrating with them easier and that increases co-marketing opportunities.

**Vendor Requirement C4-R1:** We will favor vendors who support this type of partnership including co-marketing, co-selling, and co-evangelizing. Please discuss how your partnership with MHDC and other vendors who may be part of NEHEN 3.0 will work.

**Vendor Requirement C4-R2:** Please list the EHR systems with which you have preferred relationships and how each of these relationships will impact NEHEN connectivity and advance our co-marketing strategy.
Adaptability

Adaptability speaks to the ability of your service and organization to flex from a business perspective with the changing landscape of selected use cases and capabilities and to offer pricing and market flexibility as needs and industry standards change. We expect NEHEN management – including both MHDC and all vendors – to work in an iterative, agile manner to best meet evolving market needs. This may mean changing course midstream at times and being willing to discard or put ongoing projects on hold even after some effort has already been invested in them.

Understanding that new capabilities and services typically equal more resources to support and maintain, some services may be sunset over time as new capabilities are introduced. Adaptability also speaks to the operational and support changes that will be necessary to meet the ever-changing needs of participants as they expand on the present portfolio of exchange capabilities. This may entail establishing additional or different access methods, better tracking mechanisms for transactional services, or more advanced security auditing, among many other things.

We will evaluate the successful services providers on their ability to adapt to an ever-changing landscape of services, regulations, and requirements.

**Vendor Requirement C4-R3:** Respondents to this RFP should address their comfort level and existing processes for modifying implementation plans mid-stream and for using iterative, agile processes more generally.

Innovation

Innovation from the MHDC and NEHEN perspective is not just about traditional product development but rather participation in industry advancing activities that innovate on solutions, laws, regulations, and all aspects of the services we provide. We envision a NEHEN community that encompasses not just NEHEN stakeholders but also others interested in learning about NEHEN, its capabilities, and its approach to interoperability. We also believe MHDC’s existing data governance experience and activities will bring more innovative ideas, processes, and services to NEHEN.

Innovation in this sense can come in many forms. For example, choosing to work with an outside solution provider because they have the best option for a particular aspect of services or a novel notion of how a provider directory service might be incorporated into the API exchange framework for NEHEN’s services. Similarly, it might mean making a portion of your solution available for use by other NEHEN vendors so common functionality is only developed and supported once in one way. Rather than reinvent existing capability ourselves, we expect to collectively look at all existing options and leverage whichever services make sense. We are building an open framework of connected services, solutions, and products that together form a viable network offering the right combination of features and services for our users.

**Vendor Requirement C4-R4:** Please describe your approach to supporting ongoing collaboration, adaptability, innovation in your relationship with NEHEN. How have you performed and prioritized alignment with other customers? Can you commit to transparent communication? Tell us how you will collaborate with MHDC and the NEHEN community and move this roadmap forward. How will the product and services introduce new requirements and support them? Please include information on how your services plan to continually evolve and adopt new regulatory exchange and interoperability requirements going forward. ONC certification plans should be discussed but are not sufficient. We want to know how you will take the minimum requirements set forth and help us expand on them to meet real business needs. Note that we do not expect compliance with all regulatory requirements across all domains of services but certainly any exchanges between payers and providers and payer to payer and provider to provider should be strongly prioritized and likely will be required over time.

**Capability 5: Overarching Technical and Operational Requirements**

Some specific requirements of the service are listed below. In all cases, additional requirements may be identified based on feedback received during the RFP evaluation process or the service design, development, testing, and implementation phases but the services listed below form a core baseline.
Cloud-based implementation

MHDC does not intend to host any component of this service directly. We would prefer to use a single cloud vendor for the entire project to make integrations easier and improve performance of the system as a whole, but as long as integration of components can be accomplished via REST APIs we are willing to consider selecting vendors who use different cloud services. We will also look favorably on vendor solutions that can be implemented across multiple cloud vendors if needed.

Vendor Requirement C5-R1: Please address your preferences for cloud services and which services you support. If you support multiple cloud vendors please note them all including any differences in support between them. If you have been part of a multi-cloud implementation please discuss that experience and highlight what went well and any lessons learned that could be applied to NEHEN 3.0.

Vendor Requirement C5-R2: Please discuss your experience with resilient cloud services. What measures do you take to monitor your environment and ensure smooth operations and continuous uptime? Please discuss efforts ranging from geographic redundancy to load balancing to just in time provisioning to cloud monitoring tooling or anything else you consider central to ensuring smooth cloud operations.

Standards-based solutions

We will give a strong preference to solutions using industry standards across the board. In particular, integration points between components of the full solution should not use proprietary APIs or any other proprietary methods; REST APIs will be given preference but other industry standards will be considered so long as both sides of an integration can support it. FHIR servers should be able to support the data and API calls defined in any implementation guide developed in accordance with HL7 standards for IGs. Authentication services should use OAuth 2.0. If needed, we should be able to remove or change a component or aspect of the solution with little or no impact on anything else used.

Vendor Requirement C5-R3: Please discuss how your organization incorporates standards. If you support proprietary mechanisms instead of industry standards for any functionality, please outline them and discuss why you feel your proprietary solution is superior to any available standards. If you are in the process of moving from proprietary mechanisms to a more standards-based approach for any functionality, please discuss that process and the timeline for completion.

Maintenance and Upgrades

MHDC expects vendors to maintain their systems over time. In general, we will leave backwards compatible updates to vendor discretion unless they affect security or some other essential service. We expect APIs to be fully backwards compatible and, should industry updates release non-backwards compatible updates, MHDC expects a coordinated approach to a consistent upgrade with clear customer communication and a minimum of six months of lead time (if possible).

In general, within the world of cloud computing there is no reason for system downtime for maintenance and upgrades. Therefore, we expect vendors to perform maintenance tasks and updates without system interruption, using standard cloud mechanisms such as building new systems in parallel then switching them out and similar widely used processes for quick updates.

Vendor Requirement C5-R4: Please outline your approach to system maintenance, your typical upgrade process, and how you leverage cloud services to limit system downtime related to maintenance and upgrades.

User Accounts

NEHEN 3.0 will use clearly defined user accounts belonging to an individual but that can be associated with a specific organization and, if desired, a specific business unit within the organization. While there can be benefits to supporting organization or business unit level accounts, we believe that each individual user should have a unique account ID that can be traced fully through the system. If a user has more than one role that needs to be billed separately within an
organization's internal billing practices, that user should have separate accounts for each role. When a user leaves an organization, their account should not be used by their replacement. If a user has a temporary replacement, the temporary replacement should be issued their own account.

All user actions should be logged and fully traceable throughout the entire system. MHDC expects general reporting on this activity as well as the ability to hone in on specific types of activity or all actions of specific users.

MHDC expects each organization to always have at least one administrative user (supplying information on this user is a required part of the onboarding process; see below). This user should have the ability to add new regular and administrative users, remove or suspend users, reinstate suspended users, and to set roles or permissions for each user without direct intervention from MHDC or any NEHEN vendors. These new users and user status updates should permeate across the entire NEHEN system and across different NEHEN vendors as quickly as possible. As a security feature, MHDC should be notified whenever new administrative users are added for any organization.

MHDC should be able to access the system as any user as part of its system oversight and to better investigate any overarching issues. The system should recognize MHDC is performing these actions and not count them toward any user or organizational metrics, actions, or costs.

**Vendor Requirement C5-R5:** Please discuss your ability to support this user model, traceability of user actions, timeframes for turning off user access, the user creation process, and any specific information you require to create an individual user account.

**Auditability.**

MHDC and/or vendors it designated for this purpose must have the ability to audit transactions by specific users or related to specific types of transactions as they flow through the system for a variety of purposes:

- issue investigation/customer service. If specific issues are reported by a customer or noticed by MHDC or another vendors within the solution, tracking down the cause of the problem potentially requires specific information from each system involved in that particularly workflow to be considered together.
- billing/system usage. Determining system usage to ensure customers are accurately being charged for API calls and any other chargeable events.
- feature usage/determination of future priorities. Determining which features are most heavily used or which have the most issues reported to help direct prioritization of new features or enhancements of existing features.

**Adherence to HIPAA and other privacy and security standards**

Security of PHI, PII, and protection from intrusions and cyberattacks is important to MHDC and NEHEN participants. We will award much higher evaluation points to the vendors that can demonstrate, as part of their services hosting capabilities, a certified level of security and compliance including SOC1, SOC2, HITRUST, NIST, and CSF assessments. Compliance with all HIPAA/HITRUST, Medicare security/privacy/fraud and abuse guidelines, and Massachusetts State compliance requirements for security and privacy are required and the delegated responsibility of the solution provider.

In addition, we expect vendors to be responsive to client site security questionnaires and audit requirements and to provide their own electronic monitoring of activity (including user/account activity and network events) for suspicious or malicious events. Any detection of such events must be reported to MHDC immediately.

In the unfortunate (and hopefully unlikely) event of a breach of any sort, MHDC requires vendors to comply with all information requests from us, affected customers, and reporting authorities. We also expect vendors to have a demonstrated disaster response and recovery plan that includes dealing with the aftermath of security incidents (see below).
Vendor Requirement C5-R6: Please discuss your experience with meeting HIPAA security and privacy standards, your familiarity and ability to comply with Massachusetts data security and privacy requirements, and experience with other standards mentioned above.

Vendor Requirement C5-R7: Please discuss any experience you have with security breaches, investigating their source and their implications, meeting reporting requirements, crisis communications management, and working with others to identify issues with complex systems where data flows in and out of the systems you are directly responsible for monitoring and reporting on. Feel free to also comment on experience with table top exercises and similar efforts meant to preview how to handle breaches effectively.

Vendor Requirement C5-R8: Describe what you look for in automated detection mechanisms looking for suspicious usage, potential breaches, or other local or system-wide problematic events, how you decide an anomaly is worth reporting, and the information you provide when alerting customers.

Disaster Response and Recovery

We require a full and mature compliance, disaster recovery, and business continuity plan. Without these we cannot support the services outlined in this RFP.

Vendor Requirement C5-R9: Please discuss your current disaster response and recovery program and your willingness to engage with MHDC and other relevant vendors to ensure a viable NEHEN 3.0 plan in this area.

SLAs

In general, MHDC expects a highly performant system with capacity planning regarding present and projected volume of transactions and requests for services. This should encompass both the actual transactions and all of the supporting functions and activities.

MHDC sees the need for SLAs in various areas:

- overall system uptime
- API/transaction response times
- Customer onboarding times
- Customer support times
- Reporting times
- Disaster recovery
- Documentation updates for new/updated features
- Partnership requests (timeline for internal responses to both business and technical requests from MHDC or a coordinating partner, related actions, and required lead times for certain requests)
- Additional SLAs as identified throughout the RFP evaluation and service definition/implementation phases

We realize some of these SLAs may be dependent on volume, priority, severity, or other factors depending on the type of SLA. Scaling to handle large volumes while remaining performant is a central requirement for NEHEN, but we accept some SLAs may need to be tiered by volume (and matrixes based on other factors may be more appropriate than set single values for other SLAs). When addressing specific SLAs, feel free to propose tiers, matrixes, or any other structures or limitations you wish to call out for us to consider.

MHDC will give preference to vendors willing to commit to the industry standard 5 9s uptime (99.999%) without any planned maintenance windows.
Vendor Requirement C5-R10: We seek vendor comment on what they can support in these areas, vendor thoughts on additional SLAs that make sense, and vendor proposals for the consequences of missing SLAs.

Documentation

NEHEN 3.0 requires two types of documentation:

1. Internal, how the components integrate with each other
2. External, how users interface with the service/features

Internal Documentation

For respondents with existing APIs and other well defined interfaces to existing functionality they already support, existing documentation may be sufficient. However, if MHDC or any of its NEHEN partners find that it is not, we expect deficits to be addressed via whatever normal documentation bug or enhancement process exists at individual organizations. If the identified issues are such that integration with the service is materially delayed or blocked, MHDC expects direct access to the information up to and including developer participation as needed until such time as sufficient documentation is provided. MHDC expects visibility into the prioritization and timeline for making documentation additions and fixes.

For respondents without such existing documentation, we expect producing it to be part of the vendor responsibilities to NEHEN and access to internal resources including developers as needed to obtain the necessary information in the interim.

User Documentation

MHDC anticipates producing external/user facing documentation around how to use the service, its APIs, its features, its GUI support applications (including online help), and other documentation as deemed appropriate. This includes connectivity guides for X12 EDI services.

Some of this material may be drawn from existing vendor documentation, depending on the exact role of each vendor and the type of existing documentation available. We expect any vendor bidding for X12 EDI services to have existing connectivity guides but retain the right to require updates should it be deemed insufficient in any way.

In addition to traditional documentation, training or course materials may be produced and MHDC may ask vendors to participate in these activities.

Any documentation produced specifically for MHDC (as opposed to integrated into standard vendor documentation and meant for use by other customers too) or developed jointly to explicitly cover NEHEN will be considered MHDC’s intellectual property.

Vendor Requirement C5-R11: Please comment on the amount and type of existing documentation you have for interfacing with your systems via APIs or other standardized interfaces. If bidding on user-visible portions of NEHEN 3.0, please comment on the amount and type of existing documentation you have for end users of your systems. If bidding on GUI components, please include online help or other documentation materials integrated therein.

Vendor Requirement C5-R12: Please comment on your ability and willingness to participate in joint external/user facing documentation processes and discuss any previous experience you have with this type multi-vendor documentation project. Please comment on what tools you use for documentation and whether you are willing to supply content source files for incorporation into joint documentation if requested. If you have participated in cross-vendor documentation
projects before, please discuss your experience and any barriers faced/how they were overcome.

Analytics

NEHEN should supply metrics related to system performance, FHIR usage, ePA transactions, quality measures, and more including:

Administrative metrics per customer (visible to administrative users and MHDC only):

- Pricing-related metrics (if necessary, to be determined later)
- List of users in their organization with no transactions in the past 30, 60, 90 days
- List of all users in their organization with allowed privileges and business unit assignment (if enabled)

These metrics should be integrated into the NEHEN admin console (described in the GUI Access Requirements section below) if possible in addition to being available through the normal analytics mechanism being supported for other metrics.

HIPAA auditing (visible to administrative users and MHDC only):

- Date, time, transaction initiated by, transaction sent to, and transaction content for all transactions sent by a particular user over a specified time period
- Date, time, transaction initiated by, transaction sent to, and transaction content for all transactions with data for a specific patient

Usage metrics, calculated as defined:

- Total/total X12/each X12 transaction type/FHIR/ePA/quality measure transactions sent per user last 7, 30, 60, 90 days
- Total/total X12/each X12 transaction type/FHIR/ePA/quality measure transactions sent per business unit (if identified) last 7, 30, 60, 90 days
- Total/total X12/each X12 transaction type/FHIR/ePA/quality measure transactions sent for entire organization last 7, 30, 60, 90 days
- Total/total X12/each X12 transaction type/FHIR/ePA/quality measure transactions received by organization last 7, 30, 60, 90 days
- Metrics required, recommended by, or suggested for specific supported FHIR implementation guides related to main use cases
- Other metrics identified during the RFP evaluation process or system development, implementation, testing, and operations

Usage metrics should be available for just API transactions, just portal transactions, and both together. Individual users should be able to see their own metrics, but other metrics should be restricted to organizational admin users and MHDC.

System metrics (available to MHDC only):

- Status of all SLAs
- Average of all SLAs over 30, 60, 90 days
- All usage metrics above system-wide
- Number of issues unresolved in 30, 60, 90 days (by severity/priority if applicable)
• Other metrics identified during the RFP evaluation process or system development, implementation, testing, and operations

Vendor Requirement C5-R13: Please comment on your ability to provide these metrics at the levels outlined above and the format you intend to provide them in. Please discuss any experience with segregating usage metrics by user while supporting rolling them up by organization and/or business unit. Please suggest any additional metrics you believe should be supported by the system. Please comment on the suggested 7, 30, 60, 90 days windows and if you think they make sense.

Vendor Requirement C5-R14: Please comment on whether you believe the HIPAA auditing requirements could also be supported via the admin console as described in a subsequent section of the RFP given the amount and scope of the data involved. Please also address any additional security implications/risks from keeping that amount of historical transaction data in the cloud and whether there are alternatives you recommend that still meet HIPAA auditing requirements, perhaps leveraging log files (see next section on logging).

Logging

NEHEN requires that a full transaction history be maintained for a minimum of two years. This should include a minimum of the transaction details required for HIPAA auditing as outlined in the analytics section above (date, time, transaction initiated by, transaction sent to, and transaction content).

Vendor Requirement C5-R15: Please address your ability to store full transaction logs for two years and address how you intend to protect this data while ensuring it’s accessible to administrative users and MHDC when needed. Please also address how you handle log data once its retention is no longer deemed necessary.

Reporting

NEHEN should support all mandated reporting related to FHIR usage, ePA transactions, quality measures, and more including:

• Endpoint reporting to various entities (NPPES, Lantern, etc)
• ePA transaction reporting requirements from CMS
• ePA transaction reporting requirements from Massachusetts
• Reporting relevant to medical or health IT research
• other regulatory or programmatic reporting as identified
• Reporting to MHDC or NEHEN users related to insights or suggested actions that enhance the usefulness of any of the metrics outlined in the analytics section above
• Reporting to MHDC related to automatically detected security and usage anomalies

All reports should be filtered by demographic data when available/as appropriate for the report type.

Vendor Requirement C5-R16: Please discuss your experience collecting and reporting on these items, if any. Please highlight any additional reporting you believe should be performed.

Vendor Requirement C5-R17: Explain what you support in the way of intelligence and analysis of usage including things like actionable insights that would enhance the usefulness of data presented as metrics in the required analytics outlined above.

Notifications

Administrative users should be able to subscribe to notifications related to pricing/costs if any are applicable to the NEHEN pricing model. MHDC should also have insight into these notifications.
Users should be able to subscribe to notifications for pended ePA transactions.

Additional notification types will likely be defined and supported in later iterations of NEHEN 3.0.

**Vendor Requirement C5-R18:** Please discuss your experience with user notifications and the mechanisms you currently support for them, if any (email, text message, in-app alerts, etc). Please note other notifications you currently support that may be useful for either administrative or regular users of NEHEN.

**Customer Support**

MHDC requires a help desk or virtual problem ticket process for intake, status, and response to any client questions, issues, or concerns. MHDC should have complete visibility into these tickets and there should be set required response times as part of the system SLAs (see above); support should be available in real time and after hours as deemed appropriate based on agreed upon criteria. MHDC may request reporting features around customer interactions at some point in the future, although we do not see that being an immediate requirement.

Should it prove necessary or desirable, MHDC may institute cross-team triage sessions on a to-be-determined cadence to prioritize, discuss, and identify the source of issues that may not have a clear owner.

In addition, MHDC requires any vendor to provide real time updates about any outages or service statuses affecting normal operations and to communicate with MHDC and/or NEHEN users as appropriate about such incidents. Outages affecting internal features that are not directly accessed by NEHEN users should include information about the user-visible services affected by the incidents (MHDC or its coordinating vendor should supply or vet this). All outage/service status communication should be provided on a regular agreed-upon cadence until all issues are resolved and normal services have resumed.

**Vendor Requirement C5-R19:** Please describe your typical customer support avenues and processes and how they integrate with development workflows and timelines should deeper investigation and/or product fixes or updates be required to address a customer-reported issue.

**Vendor Requirement C5-R20:** Please describe your preferred customer support tracking system (Jira, ZenDesk, etc.), the availability of supporting other NEHEN vendors on any existing ticketing system you use (MHDC will look favorably on vendors willing and able to do this), and any thoughts you have on managing or working within a potentially multi-vendor support system.

**Vendor Requirement C5-R21:** Please outline how you typically notify customers of outages and other service issues including timelines, typical update cadence, and available mechanisms (website, email, subscribe to notifications, etc).

**Testing**

We expect each feature supported by NEHEN to be individually tested prior to its integration with NEHEN. In addition, we expect integration testing with other NEHEN components, end-to-end testing of each transaction or workflow, acceptance testing by both MHDC as a whole and by individual customers (If deemed necessary), regression testing on an ongoing (regular) cadence, performance testing, and other testing as needed and identified by MHDC or other NEHEN vendors.

MHDC expects visibility into vendor-specific test plans and test results for all vendor services included in NEHEN. Specific test plans for NEHEN-specific features or joint features that involve multiple vendors will be developed as part of the implementation process.

**Vendor Requirement C5-R22:** Please discuss your current internal testing process including the type of testing you perform on your products, how often testing is performed, the requirements needed to pass testing, and any other
information you feel it would be helpful to share about your testing processes.

**Vendor Requirement C5-R23**: Please discuss your willingness to support joint testing for NEHEN features including providing internal resources to work on test plans, various types of testing, and addressing/fixing issues discovered during testing. Please outline your reporting and triage process for reported issues and standard timeframes for moving these issues through your internal bug fix or enhancement request processes.

**Vendor Requirement C5-R24**: Please discuss your standard processes for testing the connections with new customers and how you typically address any issues found. Please discuss the most common issues found during this type of testing and how you work around or fix them.

**Other Considerations**

This is a representative sample (not an exhaustive list) of the types of overarching service and delivery approach characteristics we are looking for in a successful solution provider.

**Vendor Requirement C5-R25**: Please present all relevant present or planned (by the end of 2024) capabilities regarding services delivery practices that would further our understanding of your capabilities.

**Capability 6: Specific Infrastructure Requirements**

MHDC believes a viable NEHEN FHIR service will require various core functionality as part of its core infrastructure. Among these are identity management services, consent management services, provenance management services, transaction routing services, transaction logging services, access control, code mapping and translation services, and more.

In addition, it is important to us to maintain proper security and privacy controls throughout the entire system. In addition to meeting all HIPAA and Massachusetts data security and privacy requirements, MHDC prioritizes giving individuals control over their own data as much as possible and requires our vendors to agree not to retain any data outside of NEHEN-controlled environments or to provide data to anyone not actively performing tasks related to NEHEN operations. MHDC expects to know about all such subcontractors used by our vendors and expects them to agree to these provisions as well.

**Vendor Requirement C6-R1**: Please address your willingness to meet the MHDC approach to data retention and data use summarized at a high level above.

**Identity, Authorization, and Access Control**

It is very important to ensure that users of the NEHEN system are who they claim to be and are properly authorized to use the system and access the features and data they try to access.

We expect each individual NEHEN participant organization to manage its own user accounts and confirm the identity of specific users through whatever means they deem appropriate. NEHEN may choose to support one or more single sign-on services in the future, but initially accounts tied to individual users will be identified by a unique system ID (UUID) and tied to an email address, user name, and password assigned via their administrative user.

OAuth 2.0 will be used to authenticate the user associated with each FHIR API call. NEHEN vendors should be able to identify the user via OAuth 2.0 tokens, determine their associated organization, the services used by that organization, and the specific permissions assigned to the user related to access to those services. By default any user associated with an organization will be able to access any non-administrative feature used by their organization and make any related API calls. All activity deemed allowable for a specific token by the system must be logged and associated with the user assigned that token.

**Vendor Requirement C6-R2**: Please discuss your experience with OAuth 2.0 and supporting REST API access using OAuth 2.0 tokens. Please discuss your token generation process and how long your tokens are typically active before they
Consent Management

A basic consent management system should be part of the core FHIR infrastructure of NEHEN. We do not envision this core system providing any granular-level controls (such a system may be implemented separately at a later date), but a high level system designed to support consent at the level of opting in or out at the service/feature level as appropriate.

**Vendor Requirement C6-R3:** Please discuss your ability to support high-level consent management including the exchange of consent resources as appropriate. If you have experience implementing a consent management system in a FHIR-based environment, please discuss any issues encountered and how you solved them. If your solution supports more granular consent mechanisms, please explain how they work and how easy or difficult it would be to start with high level consent and expand NEHEN consent functionality to more granular controls in the future.

Provenance Management

Provenance is an important part of any data exchange, especially when the data may change hands multiple times. For certain types of data, the provenance provides vital information on the likely accuracy of the associated data and allows recipients to better understand how to use the data.

MHDC requires that all NEHEN transactions include provenance information. Ideally, the provenance would provide a chain of custody for the data, indicating not just its original source or its latest source but the entire list of individuals or organizations that have held the data as well as who modified it and how if any modifications are made along the way.

This is particularly essential for equity-related data including demographic and SDOH data where inferred data is much less reliable than data provided directly by the patient, member, or consumer.

**Vendor Requirement C6-R4:** Please discuss your experience with data provenance and particularly FHIR Provenance resources. If looking to be the NEHEN core FHIR vendor, please discuss your ability to automatically create new Provenance resources to indicate the originator and receiver of data during any exchange as well as indication that the data was transported through the NEHEN network. Please discuss your ability to capture and include a varying number of Provenance resources alongside the main data contents of an API transaction.

Service Access Features

These are organizational-level features that ensure that the proper services are available to the proper customers, that features that are not supposed to be available to customers are not available to them, that requests are correctly routed to be processed by the correct exchange partner, and that all of this is done in a scalable, performant manner.

We propose three components to manage this aspect of the service:

1. Directory of Supported Services
2. Internal Endpoint Directory
3. Request Routing to the Proper Endpoint

**Directory of Supported Services**

This is a crosswalk of the product features available to each organizational customer. We propose the following requirements for the information it yields to customers:

- any user at any organization can clearly determine what NEHEN services its organization has the right to use
- any user at any organization can clearly see which other organization it can pair with for a service their
organization supports (i.e. their available trading partners for feature X)

- any user at any organization can inquire if they can send Y transactions to a specific someone else and get a clear yes/no answer
- MHDC has visibility into all of the above

We believe this feature could be accessed by a REST API, but are open to other mechanisms if you deem them more appropriate or wish to support them.

MHDC may also choose to publish a list of organizational customers for each service in a static form, updated at some regular cadence.

(Internal) Endpoint Directory

An internal-only endpoint directory indicating to the system which endpoints to use for a particular service, whether it supports FHIR or X12 EDI or both, whether it has been verified in the past X amount of time, and any additional information needed to support connections to the service.

There should also be some mechanism for customers to supply and/or update their endpoints and a verification process to determine that the information they supply is correct (or, at least, that it results in a seemingly valid connection accepting data in the expected format). This could be a REST API, but we are open to other solutions as well.

Vendors servicing requests, MHDC, and anyone MHDC designates as such should be able to access this directory, but (at least initially) we do not intend to make the specific endpoints directly visible to customers who do not own them.

We seek vendor advice on a proper validation frequency and process.

Request Routing to the Proper Endpoint

Some mechanism for ensuring that requests are sent to their intended recipient at an endpoint that supports the intended service.

Vendor Requirement C6-R5: We look forward to your proposals on how best to manage these features in our solution. We do not require they be separate components as long as they can be independently accessed as outlined above (for instance, the directory of services and the internal endpoint directory could be developed as a single component so long as appropriate customer visibility levels are maintained). We are open to hearing additional related functionality you believe could or should be supported so long as your rationale for suggesting them is clear. If you feel you cannot support these core services without additional functionality, please make that clear along with the reasons why that is the case.

Code Mapping and Translation

MHDC has long believed that code mapping and translation are an essential missing element required to make interoperability and exchange of standardized data work. Different organizations use different code systems for the same data. FHIR and US Core limit the supported code systems supported for many types of common health data and organizations must map their existing data into the expected code systems in a consistent and repeatable way.

MHDC previously released an RFP specifically for a standalone REST API code mapping service and engaged with several vendors about designing and implementing such a service. While it did not come to fruition, we learned a lot during the process and remain convinced that this functionality is needed.

Rather than look for a standalone service at this time, MHDC is looking to incorporate code mapping into its defined FHIR use cases. Both prior authorization and quality measures require various types of code mapping for successful transactions. Other potential future use cases, most notably potential price transparency services related to supporting
No Surprises Act exchanges, will also have significant needs in this area.

In some cases the code mapping may only be needed in one direction, but in other cases two way mapping may be required. In both cases we expect consistent mapping; the same starting code with the same supporting data should always result in the same translated code and mapping from the destination system back to the original system should yield the original code. Idempotency is important, as is consistency across the system and any choices made in the mapping mechanisms.

**Vendor Requirement C6-R6**: Please discuss any experience you have with code mapping and which code systems you have supported in the past. Please indicate if you used any standardized mappings and, if so, when they were created and the percentage of the available codes they cover. If you performed the code mapping using other mechanisms, please discuss what those are and how they work. Please discuss the type of additional data beyond the original code and desired new code system you need to successfully perform a mapping and how that differs by code type (if it does). If there are specific mappings that might be requested that are difficult to support, please highlight what those are and why they pose extra difficulty. If there are mappings you can only support in one direction, please call them out and explain why or if there’s any additional data that might be available that would make the return trip possible.

**Additional Features**

A partial list of additional features required by NEHEN 3.0 are included below.

**SMART on FHIR app**

In order to support smaller providers and other use cases and to ensure more consistent data across the system as a whole, NEHEN is planning to support a SMART on FHIR app that works across the whole community. While we may prioritize support for specific EHRs based on their prevalence of use, it is our intention to support all major EHRs in use within Massachusetts as well as support other common data stores that might be used by providers typically not using certified EHR systems (such as physical therapists or mental health providers, to name two examples).

We are not yet certain exactly what functionality would be required initially or what functionality could be added over time in future iterations of NEHEN. We expect to identify specific workflows and activities not supported natively by payer or provider vendor solutions for prior authorization, quality measures, or other clinical data exchange needs.

**Vendor Requirement C6-R7**: Please discuss your SMART on FHIR app support including what functionality you support now and future plans for support through 2024. We are particularly interested in functionality related to our initial use cases, but would like to hear about other areas of support as well. Please note which EHRs your SMART on FHIR app works with and if it also works with any other types of data stores that might be used by payers, non-traditional provider organizations, or community service organizations offering SDOH interventions. Please discuss your willingness to add additional features to your SMART on FHIR app or extend support for integration with additional EHRs or data stores.

**Onboarding**

While we expect an integrated onboarding process for all NEHEN customer organizations, we understand different components and features may have unique needs in this area.

As a starting point, we anticipate collecting the following information about new organizations as they become NEHEN users:

- Business name, address, phone number, website
- Name, phone number, and email for primary contacts for business operations, financial, and technical areas
- Admin user name, phone number, email, preferred contact method (primary technical contact by default)
- Additional services used by the organization, if applicable (X12 and FHIR transactions are supported for all users)
- Any information needed to support the pricing model (to be determined later)
A default admin password will be created which must be changed by the admin using the admin console before the admin can do anything else.

For new individual users, we anticipate providing a mechanism for creation by the admin user and requiring the following information:

- Name, location, business unit (if applicable), email address
- Services/transactions allowed to perform

**Vendor Requirement C6-R8:** We seek information about whether the information above is sufficient for all vendors to permit access to any applicable services. We would like to know how long it typically takes to initiate services for a new customer once their information is provided. We seek information about whether any vendors currently support electronic methods for providing new customer information.

**Vendor Requirement C6-R9:** We seek respondent thoughts on how much orchestration is needed around how new customer information is provided to vendors who may be services a subset of NEHEN functionality dependent on services provided by another vendor. Can you handle turning on new users before they can actively access your services? For example, do we need to ensure that core FHIR services are enabled before a prior authorization specific feature using FHIR is turned on so or can it be turned on without being able to perform transactions until the underlying service is operational for the customer.

**Other**

MHDC is interested in assessing other functionality or capabilities we could support to better enable, support, or enhance our X12 EDI transaction support, FHIR support, or support for the initial use cases.

**Vendor Requirement C6-R10:** Please describe any additional features you can support incorporating AI, machine learning, or other tools to further automate or improve the available transactions, workflows, analytics, or reports.

**Capability 7: Coordination between Vendors**

Because we envision a NEHEN system using multiple vendors to supply the full scope of the feature set we need, coordination between vendors is an essential component of both the development and operational level.

It is essential that the features and components of NEHEN 3.0 work seamlessly together. This will require oversight and management as well as central coordination of development cycles, test plans and testing, documentation, customer support, system monitoring, pricing and fee distribution, and more.

We expect each vendor to appoint a technical liaison and a business liaison to NEHEN who will work with MHDC, NEHEN, and any vendor selected for coordination services to ensure that any issues that arise are dealt with in a timely manner. We expect these roles to be filled throughout the entirety of the relationship (during planning, implementation, testing, and operational phases).

We anticipate these liaisons being the first point of contact for all communications between MHDC and their vendor organization. We expect each vendor to empower their liaisons with the tools, authority, and resources to support all necessary activities related to NEHEN. Some of the areas we see this encompassing include:

- Handling scheduling and availability (including identification of correct vendor personnel) for project/coordination meetings
- Acting as the point of contact in case of privacy, security, or other breaches impinging on the vendor services
- Acting as a liaison for any business issues encountered including issues around pricing or fees
• Ensuring any technical questions around how the service works are answered
• Acting as a liaison for solving any participant issues impinging on their portion of the service
• Ensuring vendor resources needed to produce user facing documentation and training materials related to their portion of the service are available
• Ensuring vendor resources needed to perform any required integration, performance, end-to-end, or other testing of the service as a whole are available
• Ensuring vendor resources needed to participate in outreach activities, listening sessions, working sessions, and other collaborative and promotional activities are available
• Ensuring full transparency to MHDC, its coordinating vendor, and (as appropriate) other vendors who need to know relevant information. This includes access to all communications, customer service and technical support issues, test plans and results, reporting, and other types of coordinated activities.
• Other activities as identified during the RFP evaluation period and NEHEN design, development, testing, and implementation phases.

MHDC hopes that all decisions can be made by reaching consensus among the group, but when that is not possible we retain the ability to make binding decisions for NEHEN 3.0 as a whole. In addition, MHDC retains the right to veto any decision we believe will have a negative impact on NEHEN.

MHDC is open to having a vendor providing other services also serving as the coordinating vendor, especially vendors providing either core X12 or core FHIR infrastructure services (or both). Vendors who can successfully serve both a core infrastructure role and coordinating vendor role will be given a bump in the vendor evaluation process.

**Vendor Requirement C7-R1:** Please comment on your use of standard APIs or other interfaces to enable connections with other vendors contributing to NEHEN 3.0 as appropriate for the role/functionality you intend to provide. Please discuss the level of documentation, testing, and resource availability for managing NEHEN-internal connectivity. If you have participated in a project using multiple vendors, please describe the experiences including both what went well and any barriers or road blocks you faced and how they were overcome.

**Vendor Requirement C7-R2:** Please indicate your openness to appointing technical and business liaisons to NEHEN. Please comment on whether these resources will be sufficient as first points of contact for all activities outlined above and if they are able to pull additional resources into NEHEN activities as needed to troubleshoot issues, perform outreach activities, or participate in other ways as needed.

**Vendor Requirement C7-R3:** If interested in the coordination of vendors role, please discuss any previous experience you have in this area. Highlight both what went well and challenges you faced/how you overcame them. Please discuss the key components of coordination and the specific outcomes/artifacts/workflows you think are essential to include as part of this coordination.

**Capability 8: GUI Access Requirements**

NEHEN 2.0 currently supports a portal to enable smaller providers less able to manually integrate X12 transaction APIs into their workflows. Continuing to support these providers (and others who choose to use the portal) is an important requirement for NEHEN 3.0.

NEHEN 2.0 has also integrated some administrative tasks into this same portal, most notably individual user account creation and organizational-level usage metrics. As noted elsewhere, NEHEN 3.0 will also have a variety of tasks and reporting specific to the local (organizational) system administrator, bundled under the concept of an admin console.

NEHEN 3.0 must support both a user portal and an admin console. Conceptually these are different and we will discuss them as separate items during this RFP, but we are open both to a model where they are independent and to a model
where the two are combined into a single GUI application with strict access control enabled to limit the administrative features to site admins.

User Portal
The user portal must mirror the transactional support of the system as a whole as closely as possible, including support for bulk transactions when appropriate. The transactions managed via the portal must be indistinguishable from those sent directly via X12 or FHIR and should use the same APIs under the covers except for noting they originated in the portal.

Some of the user portal requirements include:

- Multi-factor authentication requirements to log in. This should include multiple options for the second validation method including text messages, phone call, and download codes.
- Ability to initiate X12 or FHIR transactions for all supported workflows/use cases
- Ability to initiate bulk transactions for X12 or FHIR transactions as appropriate for all supported workflows/use cases
- Ability to initiate “which payer covers this patient?” or “what services are covered for this patient?” inquiries via the patient eligibility benefits/coverage discovery feature
- Ability to check on the status of any prior authorization request based on its unique transaction ID (for users with ePA permissions)
- Ability to view the list of individual digitized quality measures available for use within NEHEN (for users with quality measures permissions)
- Ability to check on the available trading partners for any features the user can access
- Ability to view the entire history of their own transactions for at least the past two years
- Ability to view any open support issues they submitted and their current status, or a link to an external system storing this information with the correct query predefined
- Ability to view any portal-specific documentation (including online help) or training from within the portal and the ability to view or link to other NEHEN documentation from within the portal
- Ability to view any news, updates, and services information as determined by MHDC or the NEHEN coordinating vendor and a link to the same information (or expanded versions of the same) on the MHDC website

Usability and user experience is very important to existing NEHEN portal users, some of whom choose to use the existing NEHEN 2.0 portal over other options because they like the user experience so much. MHDC expects NEHEN 3.0 to meet the needs and expectations of these users. An important step is to adopt a portal development process involving user input from the start and throughout the entire lifecycle of the portal. We are open to suggestions on the best way to accomplish this, but envision this likely includes some combination of user panels and surveys during the design phase, user acceptance testing alongside feature testing, and some form of ongoing user checkpoints during production.

Additional portal requirements may be refined and determined during the service design, development, implementation, and testing phases.

Vendor Requirement C8-R1: Please comment on your direct data entry capabilities – which transactions you currently support, any internal provider directory lookup supported for these transactions, any endpoint or partner discovery supported for these transactions, what other features are supported, any online help or other documentation provided to assist in direct data entry, and anything else you’d like us to consider about your support in this area.

Vendor Requirement C8-R2: Please comment on any experience you have with usability testing or user-centered design projects. If you have run user panels or user surveys for specific software applications, please comment on the process
you used, what went well, and how it could have been improved.

**Admin Console**

The admin console should have the ability to create standard users of the service assigned to the appropriate organizational account for tracking and access purposes and assigned the proper service access if restrictions are desired. The admin should also be able to create additional admin users through the console. The console should also show organizational usage metrics per the analytics requirements outlined elsewhere including specifically the usage counts related to service billing. In addition, billing statements should be visible to the admin and exportable in PDF format for the admin to approve and pass to their financial personnel if part of the organization's internal processes. See the analytics section above for additional features desired for the admin console if possible.

Some specific admin console features include:

- Multi-factor authentication requirements to log in. This should include multiple options for the second validation method including text message, phone call, and download codes.
- Ability to create new users, assign them to business units (if used), and assign their roles/permissions
- Ability to assign new admin users within their organization (with notifications sent to MHDC when this happens)
- Ability to suspend, reinstate, or remove existing users, change their roles, change their permissions, change their business units (if used), and otherwise alter user accounts
- Flagging of any suspicious user activity within the organization’s users
- Ability to map specific service transaction codes (STC) to specific NPI numbers to limit the information returned by the patient benefits eligibility/coverage discovery service to only those services applicable for the requesting physician
- Creation of groups of payers for patient eligibility benefits/coverage discover searching by standard users from that organization (if feature supported/grouping is needed)
- Ability to view admin-only analytics
- Ability to view admin-only reports
- Ability to view the full list of available trading partners for each service available to the organization
- Ability to view all transactions/use cases supported by any specific potential trading partner
- Ability to view any bills and their payment status (details to be uploaded by MHDC)
- Ability to view the entire history of organizational transactions for at least the past two years
- Ability to view any open support issues for their organization and their current status, or a link to an external system storing this information with the correct query predefined
- Ability to view any admin-specific documentation (including online help) or training within the admin console
- Ability to view any news, updates, and services information including both user updates also available in the portal and items not provided to the general NEHEN user base as determined by MHDC or the NEHEN coordinating vendor and a link to the same information (or expanded versions of the same) on the MHDC website (if made available there)

We anticipate also supporting API mechanisms to fulfill basic administrative transactions as possible. The admin portal should use these API calls to service requests whenever possible.

**Vendor Requirement C8-R3:** Describe what you flag as suspicious activity and how you present red flags and/or present actions/recommendations around that. Indicate if this is customizable by the specific organization and if admins can determine how they get notified about activity beyond inclusion in the admin console (email, text message, phone call, etc).
Vendor Requirement C8-R4: We seek respondent thoughts on whether having a separate user portal for transactions/other individual user actions and admin console for administrative activity such as user creation and billing support makes sense or if a single GUI supporting both is a better model.

Vendor Requirement C8-R5: Please discuss whether you have an existing user portal you intend to adopt to NEHEN needs or would be starting the development process from scratch. If adopting an existing portal, please discuss how you plan to incorporate features and input from other NEHEN vendors and how you intend to ensure the user experience meets existing NEHEN users' expectations. If creating a new user portal, please discuss how you envision coordinating functionality from multiple vendors would work and your willingness to accept user input into the portal development process plus any ideas on mechanisms to best do this. If you have developed user portals in the past, please describe previous projects and how you incorporated usability and the user experience into the process and what did or did not work well in that process.

Vendor Requirement C8-R6: We also seek opinions on whether the small provider FHIR transaction activity should or could be handled via SMART on FHIR apps or similar mechanisms instead of via manual portal entry or if it is better to have a single point of entry/workflow for all types of transactions regardless of their transport mechanism. Please discuss any experience with specific cases of SMART on FHIR use for any or all of these transactions including any barriers or resistance from providers if you have such information.

Vendor Requirement C8-R7: We also ask respondents to comment on how much and which user metadata inquiries and administrative tasks could or should be performable via APIs instead of or in addition to via a GUI.

Pricing Model

This section will outline some of the MHDC expectations around pricing, particularly our approach and key principles around pricing, and seek vendor information about their willingness to comply with these principles and details around vendor expectations for pricing and payment.

Approach and Key Pricing Principles

Several key principles guide MHDC’s approach to pricing and the framework we expect for NEHEN 3.0:

- **Transparency.** NEHEN users should have a clear view of exactly how charges accrue and the exact cost-plus markup being charged by MHDC. Further, MHDC has a responsibility to make the services as cost effective as possible for our users. In order to facilitate this, we require that vendors break out their pricing for each service they bid on separately and provide specifics of all charges and why they are being assessed so MHDC can fairly compare competing bids, assess vendor capacities and capabilities more accurately, and negotiate the best value for our users.

- **Fairness.** We price services the same way for all users and do not tax early adopters with added costs related to ramping up the service that other users do not have to pay. To facilitate this, we plan to provide usage-based contracts for the bulk of NEHEN services with a tiered system that increases the total price as transaction volumes rise but the unit price decreases as volumes rise. MHDC requires the same approach from our vendors, and vendors must also agree to provide their technology and/or services at a fixed, predetermined rate with comparable adjustments for volume regardless of any cost fluctuations they encounter during the contract period.

- **Accessibility.** Pricing should not deter smaller organizations from participating or larger organizations from starting with a smaller project and growing its use of NEHEN services. Supporting smaller volume users is important to us. We believe in our products and that trying them out will lead to growth in usage over time.

- **Partnership.** MHDC believes in balancing the interests and risks for MHDC, our vendors, and our users. The pricing model should take the interests of all three into account as much as possible. We are looking for vendors
committed to growing NEHEN because it is in the best interests of everyone and who are willing to share in both risks and rewards. We are looking for partners who also value transparency, accessibility, and fairness in pricing. MHDC expects vendors to invest time and resources in the project and earn their fees primarily from the revenue MHDC will generate when NEHEN 3.0 is in production. We expect any costs incurred prior to that time related to design, development, implementation, testing, or other pre-production activities to be amortized over the lifetime of production services. MHDC will be making a long-term commitment to our vendors – we expect to be using this core architecture for ten years or more - and expect our vendors to make a similar commitment.

Vendor Requirement P-1: Please discuss your willingness to commit to the principles of transparency, fairness, accessibility, and partnership for pricing as outlined above. Discuss your ability to defer payment until services are in production, your ability to structure your fees based on usage/transaction volumes, and your ability to support low volume or low volume to start users. Please outline other ways you can align with these principles or outline other mechanisms you believe would serve them that you can comfortably support.

In addition, over time, MHDC will also prioritize manageability as a core pricing principle. This involves balancing usage-based fees with participant ability to budget with a reasonable degree of accuracy over time. MHDC realizes this may not be possible during the initial phases of operation when volume expectations are unknown and cannot be accurately estimated based on historical data that does not yet exist and so are not requiring this during the initial phases of the project.

Vendor Requirement P-2: Please discuss how to best balance usage-based fees with the ability to predictably budget with a reasonable degree of accuracy, any analysis or reporting you could provide to support finding the sweet spot in this process, and the timeframe you think is reasonable to reach various degrees of comfort/accuracy with any usage-based budgeting predictions.

We expect significant production services to start by January 2026 driven by prior authorization regulations (there may be some small amount of production services prior to that). The design/build/test phase of the project, expected to run during 2024 and 2025, will not generate usage fees and NEHEN 3.0 will not be generating any revenue during this time, hence our strong preference for amortizing costs incurred during that timeframe once NEHEN is in production and earning revenue. We recognize that there are certain specialized services within the RFP that may require significant development efforts primarily during the ramp up period during 2024 and 2025. We recognize that fees for this type of service provider may need to be billed during that time.

Vendor Requirement P-3: Please comment on any suggestions or needs you have for the ramp up period in 2024 and 2025. Please provide an overview of the types of pricing models you currently employ and your willingness to deviate from them if needed (you will be asked to supply additional details below). Please address the different categories of services or activities you typically use when outlining pricing for customers.

Vendor Requirement P-4: If providing a core X12 EDI or FHIR infrastructure role, please comment on your relative pricing for these types of transactions and how you account for volume/offer a better rate to customers who are heavier users of the service. Please comment on your average per transaction rate and whether that varies by transaction type.

Pricing Details

We realize this may vary depending on the specific features or services you’re bidding to support, but as part of the transparency efforts noted above, MHDC would like to better understand any costs or fees typically associated with each of the following areas for your products or services:

- Base costs. This is your core pricing, including all of the components needed to provide your products or services including any customizations needed to meet our requirements and support for all of the applicable features outlined in the Functional Requirements section of this RFP such as cloud services, documentation, testing, customer support, etc. Please specifically outline exactly what you are covering in your base services and itemize
associated costs as applicable. Be as detailed as possible – if you normally charge a separate fee for it or internally account for it as part of how you determine what to charge we want to see it listed here. MHDC wants to ensure that it is comparing apples to apples when reviewing responses and also that we are not paying for the same items or functionality more than once.

- Ongoing maintenance, support, licensing, or other repeated fees. If you normally charge these fees, feel free to outline them here. However, please note that MHDC strongly prefers these fees be rolled up into ongoing usage fees and is disinclined to pay repeated, regular flat fees.

- Post-production service iteration. We favor a model similar to the initial model where new features and ongoing incremental development costs are amortized over the lifetime of fees collected for its later production use, but would like to understand your usual model (if you currently support user-specific or user-driven feature design)

- Co-hosting costs. Please outline any additional fees you’d expect if you allow other NEHEN vendors to use one or more of your services to facilitate their internal service fulfillment, such as providing an internal provider directory accessible to other vendors as needed via API calls or supporting identity management for all of the NEHEN vendors or similar.

If you are bidding for more than one component of NEHEN services, please provide the information above separately for each component as well as how they fit together as a whole. MHDC will look favorably upon vendors that offer better pricing per service when multiple services are implemented together.

**Vendor Requirement P-5**: Please provide the specific pricing information requested above as applicable to your products or services for each NEHEN component you’d like to provide as if it were the only component being provided. We expect a robust discussion with detailed, itemized entries for the base costs that accounts for all of the different factors you consider when setting those fees. Please provide enough information so we understand exactly what is and is not included in each itemized fee listed.

**Vendor Requirement P-6**: Please discuss any pricing impacts of selecting your products or services to fulfill more than one component of NEHEN.

**Missed SLAs**

While we expect our vendors to meet SLAs the vast majority of the time, we understand that incidents happen and there may periodically be missed SLAs. Not every missed SLA has the same weight, but MHDC expects some form of consideration for missed SLAs.

**Vendor Requirement P-7**: Please outline how you typically handle missed SLAs and the consideration, financial or otherwise, you propose to offer for various missed SLAs. Feel free to use tiers or matrixes based on priority or severity as part of your formulas/thinking in this area.

**Metadata Requests**

MHDC has included various metadata requests such as inquiries about available trading partners. We do not believe customers should be charged for these types of requests and expect them to be included with NEHEN components as appropriate without additional fee expectations.

**Vendor Requirement P-8**: Please acknowledge you understand and accept that metadata requests should be fulfilled with no additional charges: Y/N

**Specific Vendor Pricing Model Determination**

We plan to work with selected vendors to determine an equitable pricing model that works for the full collection of vendors selected as well as MHDC and its customers as soon as possible. We expect to develop pricing principles and guardrails leveraging both information in this RFP and that supplied by vendors in their responses during the initial
contract negotiation phase then finalize the exact pricing model subject to those principles and guardrails later. We do not anticipate agreeing to any specific production pricing model at the time of vendor selection, or likely even during the initial contracting phase (in which case specific pricing agreements will be added as addendums). Vendors must be willing to accept this and work with MHDC as needed through the ramp up/implementation period to determine pricing models that work for all stakeholders. At the same time, we don’t want to go through the vendor selection process and beyond only to realize that there is no hope of a viable pricing model agreement. Thus, we expect vendors to be honest about what they can or cannot support related to the principles and guidance we’ve provided in the RFP.

**Vendor Requirement P-9:** Please acknowledge you understand and accept the MHDC timelines for determining pricing specifics: Y/N

**Instruction to Vendors**

This section contains general instructions and an overview of response expectations and RFP timeline. A companion document – NEHEN 3.0 RFP Response – will outline our expectations for the contents and format of responses in detail.

**General Instructions**

All proposals in response to this request for proposals should be emailed to [rfp@mahealthdata.org](mailto:rfp@mahealthdata.org) and must be received by November 13, 2023. Submissions that do not meet that deadline will be rejected. A full schedule for the vendor selection process is available below, as are guidelines and rules to consider and follow while preparing responses.

**RFP Timeline and Schedule**

The following timeline will be followed for the evaluation of responses to the RFP through the eventual vendor selection*:

<table>
<thead>
<tr>
<th>Deadline</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 6, 2023</td>
<td>Release RFP</td>
</tr>
<tr>
<td>October 13, 2023</td>
<td>Intent to respond notice deadline</td>
</tr>
<tr>
<td>October 20, 2023</td>
<td>Submission of general Q&amp;A questions closes</td>
</tr>
<tr>
<td>Week ending October 27, 2023</td>
<td>General Q&amp;A session</td>
</tr>
<tr>
<td>October 27, 2023</td>
<td>Submission of technical Q&amp;A questions closes</td>
</tr>
<tr>
<td>Week ending November 3, 2023</td>
<td>Technical Q&amp;A session</td>
</tr>
<tr>
<td>November 13, 2023</td>
<td>Vendor responses to RFP due</td>
</tr>
<tr>
<td>Week ending December 8 or 15, 2023</td>
<td>Vendor presentations from selected vendors**</td>
</tr>
<tr>
<td>January 12, 2024</td>
<td>Checking references from selected vendors**</td>
</tr>
<tr>
<td></td>
<td>Vendor selection</td>
</tr>
</tbody>
</table>

* MHDC reserves the right to make minor adjustments to the provided schedule as necessary

**All vendors who submit a response to the RFP should be prepared to provide client references and give a 60 minute presentation (with up to an additional 60 minutes of Q&A) prior to December 15, 2025. MHDC will select a subset of the respondents to supply references and give their presentation to us and invited guests. Vendors selected for these presentations will be expected to have both business/operations and technical personnel available for these sessions. Available times (during the weeks ending December 8 and December 15) will be awarded on a first come, first serve basis once announced.

**Inquiries and Questions**

Questions or clarification about the RFP process only will be accepted via email at [rfp@mahealthdata.org](mailto:rfp@mahealthdata.org) (MHDC reserves the right to redirect any such questions to the Q&A process if deemed more appropriate). Specific questions,
concerns, points of inquiry, or other requests for additional information about the contents of the RFP or expected responses will be accepted via the online Q&A form found at this webpage. The deadline for general questions is October 20, 2023. The deadline for technical questions is October 27, 2023. Questions received after those dates will be ignored. MHDC reserves the right to determine whether specific questions are general or technical regardless of how the submitter classifies them. MHDC will respond to inquiries in recorded Q&A videoconference sessions open to all vendors. No private answers will be provided.

Proposal Format
To facilitate a timely and comprehensive evaluation of all submitted responses, responses must be submitted using the format requested in this RFP. Any deviation from this format may lead to the rejection of the response. MHDC has provided an accompanying NEHEN 3.0 RFP Response document outlining the expected content and format of responses to this RFP.

Implicit Process Agreements
This section outlines some implicit agreements attached to responding to the RFP.

Reserved Rights
By responding to this RFP you agree that we reserve the following rights:

- The right to reject any and all offers or proposals without obligation or liability.
- The right to accept a proposal that is not the lowest cost proposal if we determine that is otherwise more advantageous to us, in our sole discretion.
- The right to accept a proposal based on initial offers received without further follow-up. Accordingly, you should submit your best proposal as your initial proposal.
- The right to follow-up with one or more proposing companies without following up with all companies.
- The right to award more than one contract.
- The right to amend or supplement this RFP at any time without prior notice, and to provide the amended or supplemented RFP only to a subset of the recipients of the original RFP or to persons and entities that did not receive the original RFP.

Other Proposal Terms
By responding to this RFP you further agree:

- That any nonpublic information we provide you about our operations, finances, personnel, information systems or security measures will be held in strict confidence and used only to prepare a response to this RFP, and for no other purpose whatsoever.
- That we will have no legal obligations to you as a result of our issuance of this RFP or any statements made during the RFP process except as set forth in a definitive license or software-as-a-service agreement that has been executed and delivered by us to a successful bidder, if any. Without limiting the foregoing, we are not responsible for any costs you incur in the preparation of your bid or any work performed prior to the execution of a definitive agreement.
- Not to use our name or mark for any promotional purpose.
- That you will not cooperate or share proposal information with any other potential bidder except as disclosed in writing to us upon submission of your proposal.
- That on request you will complete and submit our standard Conflict of Interest disclosure form, non-disclosure forms, or other similar forms as requested.
**Intellectual Property**

If you build a custom solution for MHDC and we pay for the development work involved in designing, building, and deploying that solution, the resulting work product is the sole property of MHDC on behalf of its members and any efforts at reuse or marketing the solution to others without our consent is prohibited.

However, if you build a custom solution for MHDC and do not pass on any of the direct costs of developing this solution, MHDC claims no rights to the resulting work product. This is our preferred model.

In both cases, MHDC retains the rights to all NEHEN-specific collateral such as documentation, training, SOP documents, specifications, implementation guides, test plans, marketing collateral, and other IP deemed NEHEN-specific, although MHDC may choose to make some of these materials open source to benefit the community and industry as a whole.

**Intention to Respond**

Interested vendors are strongly encouraged to submit an Intent to Apply form on this webpage by end of business October 13, 2023. MHDC reserves the right to accept submissions from vendors after that deadline and to accept RFP responses from vendors who do not fill out the form.

**Point of Contact**

Online forms are being provided for intention to respond and Q&A submission. All other communication regarding this RFP should be directed to rfp@mahealthdata.org unless explicitly instructed otherwise.

**Evaluation Criteria**

MHDC will use a set of evaluation criteria that separately evaluates vendors looking to support specific aspects of the service and does not unfairly disadvantage a vendor because they are only looking to support a subset of functionality. At the same time, MHDC will give a bump to vendors we feel can adequately service multiple NEHEN components, particularly to infrastructure vendors willing and able to service other aspects of the service.

**Basis of Awards**

As stated throughout this RFP, the successful vendors will meet or exceed all relevant requirements declared and implied in this request for proposal. We will use a weighted evaluation matrix to score the responses (both written and verbal) to the requirements of this solution. The evaluation and weighting will be internally determined and managed and will include all aspects of your response including written, verbal (presentation of solution), personnel qualifications, reference feedback, pricing, and overall confidence in the proposed solution.

**Appendix A: About MHDC**

The Massachusetts Health Data Consortium (MHDC) is a nationally recognized, regionally focused health data services organization. As a 501(c)(3) nonprofit organization, MHDC is dedicated to advancing healthcare quality, accessibility, equity, and cost-effectiveness through collaboration, innovation, and the strategic use of data and technology.

MHDC is a collaborative body that convenes a diverse group of healthcare stakeholders, including healthcare organizations, trade associations, technology companies, policymakers, researchers, and consumers from Massachusetts and the New England region. Established in 1978 as an objective data services hub and facilitator of Massachusetts healthcare transformation, it is now a key contributor to national health data initiatives and a significant influencer in the state’s healthcare landscape, promoting data, technology, and collaborative strategies to advance health and healthcare.

MHDC continues to contribute significantly to the advancement of health information technology in Massachusetts,
including initiatives to promote Electronic Health Records (EHRs) and other digital health tools, ensuring these technologies, related data, and associated data exchange are implemented to improve patient outcomes. We actively support health reforms and policy changes to improve healthcare delivery, including efforts to contain healthcare costs, improve the quality of care, and ensure equitable access to healthcare services.

**Current Services**

MHDC currently consists of four service offerings:

- Analytics
- Consulting and Education
- Data Governance
- Health Information Exchange

**About Analytics**

Spotlight Analytics provides analyses of market share, patient origin, disease prevalence, cost of care, and comparative costs and outcomes for every acute care hospital in Massachusetts and Rhode Island. With the addition of the Lown Institute data, Spotlight Analytics provides data on how Massachusetts providers rank and compare to each other in health equity, clinical outcomes, and value of care.

**About Consulting and Education**

In addition to member and public webinars and events, MHDC offered a year-long Executive Forum series in 2023 focused on interoperability, data and exchange standards, third party health apps, privacy, security, identity, consent, and other elements of a successful modern health data ecosystem.

MHDC has also begun offering consulting services in the following areas:

- Data Education and Standards
- Technology, Data Mapping, and Process Integration
- Project Evaluation and Improvement
- Project Implementation and Stakeholder Engagement

MHDC has recently completed projects including a pilot project demonstrating the use of Coverage Requirements and Discovery in electronic prior authorization with a major payer, a specialty hospital, and a technology services provider and assisting a major health plan and its provider networks in understanding data standards, regulations, and workflow/process barriers related to health equity data exchange implementation.

**About Data Governance**

The Data Governance Collaborative (DGC) is a collaboration between payer and provider organizations convened to discuss, design, and implement data sharing and interoperability among payers, providers, patients/members, and other interested parties who need health data. As a one stop interoperability resource, the DGC primarily focuses on three areas:

1. Collaboration: Building common understanding of and specifications for data standards, exchange mechanisms, and what it means to participate in the modern health IT ecosystem
2. Education: Helping participants understand their regulatory obligations, the data and exchange standards they’re expected to use, and modern technology and related processes
3. Innovation: Identifying and developing of projects and services needed to make modern health data practices and exchange a reality
About Health Information Exchange

The New England Healthcare Exchange Network (NEHEN) manages a secure electronic data interchange (EDI) infrastructure to facilitate the exchange of administrative and financial data among its participant organizations. NEHEN’s current mission is to provide extremely affordable, high value EDI (electronic data interchange) services using (primarily) industry standard X12 electronic transactions including eligibility (270/271), claims (837), remittances (835), claim status inquiry (276/277), and referrals (278). Since its formation in 1998 NEHEN has been a participant driven, collaborative exchange service designed to provide affordable, efficient community of partners working together to solve both routine and complex data exchange requirements.

A more comprehensive discussion of NEHEN, its history, and our plans to transform it into an exchange service that will meet the future needs of Massachusetts healthcare and beyond can be found below.

MHDC in the Future

While the achievements of MHDC are significant, we look to navigate the rapidly changing health data landscape by engaging our members in creating a patient-centered health data economy in Massachusetts. Over the last decade, federal and state regulations, technological advancements, the explosion of patient data, and market evolution have led to patients and members being more active in their health and health care. MHDC is leveraging our existing experience with data governance and administrative health information exchange to become the trusted exchange broker our community needs.

This transformation will involve the entire organization. Existing and discrete service lines will be integrated to offer a more holistic set of health data and health IT services that work together to promote data quality, standardization, and exchange. Organizations will be able to pick which features and services they need and leverage the expertise that will help them best thrive moving forward. MHDC will focus on the following four interdependent services:

This transformation will involve the entire organization; streamlining service offerings into a more holistic set of health data and health IT services that promote data quality, standardization, and exchange. Organizations will be able to pick which features, services, and expertise they need to help them successfully move forward. MHDC will focus on the following four areas:
Appendix B: History of NEHEN

In 1994, a group of health system and health plan CIOs came together at MHDC to create the Affiliated Health Information Networks of New England (AHINE). The five main founding organizations – Brigham and Women’s Hospital, Beth Israel (now Beth Israel Lahey Health), Harvard Pilgrim Health Care (now part of Point32Health), Tufts Health Plan (also now part of Point32Health), and Lifespan Health System - recognized the need for a collaborative, cost-effective, standardized, and secure way to exchange patient information.

In 1998, AHINE became a separate organization called NEHEN (New England Healthcare Exchange Network). NEHEN was initially managed by Computer Sciences Corporation (CSC), then by the Massachusetts eHealth Collaborative (MAeHC) from 2012 until 2021 (when MAeHC ceased operations). NEHEN then merged back with MHDC, returning the organization to its original foundation.

Over the years, NEHEN evolved and adapted to the changing healthcare landscape. It has remained at the forefront of promoting interoperability, advocating for standardized data exchange protocols, and supporting innovative approaches to healthcare information technology. NEHEN has become a trusted platform for healthcare organizations in New England, fostering collaboration and enabling seamless data exchange to improve patient care.
The first version of NEHEN’s solutions was a client-server model with locally hosted servers in each of the member’s data centers using connectivity agents that made the connections to all trading partners on the NEHEN network. This model used multiple point-to-point interactions which required extensive monitoring and upkeep to maintain reliable transaction capabilities. A local portal could also be deployed within each participant organization that used the connectivity of the local server for its transactions. At one point NEHEN also supported clinical transactions and ePrescribing exchange services via SureScripts using the NCPDP standards, but both of these services have been discontinued.

In 2015 NEHEN moved to its current architecture (NEHEN 2.0) which is a web-standards based architecture with no on-premise hardware or software components. NEHEN adopted a hub and spoke model of exchange where all transactions flow through a central, cloud hosted point; each participant maintains only one connection to the central point and all trading partners are available from there. This is a far more efficient architecture than the previous design in that it eliminated the many-to-many connectivity model and removed the locally hosted components. Additionally, this model created a central point for performance monitoring, reporting, security, and other benefits the previous design did not offer. NEHEN saw significant gains in productivity and performance once this design was moved to the cloud and processing resources could be allocated dynamically as needed to meet the demands of its users.

Appendix C: The Current State of NEHEN

NEHEN currently provides a secure electronic data interchange (EDI) infrastructure to facilitate the exchange of administrative and financial data among its participant organizations. NEHEN’s mission is to streamline administrative processes, reduce costs, and improve efficiency in healthcare operations. NEHEN is a mature, reliable, and valued administrative data exchange service serving the Massachusetts healthcare market. For purposes of this RFP, the current state of NEHEN will be referenced as NEHEN 2.0.

Today NEHEN uses a subscription model where participants access an array of exchange services including real-time integrated (Core API) transactions, online real-time portal transactions, batch-mode exchange services, and other features such as reporting, tracking, and automation capabilities for a single fee. NEHEN’s participants include most of the major and minor payer organizations in the greater Boston area and an array of large to small providers (see breakdown below).

NEHEN is a collaborative community, as experienced through monthly user meetings, regular updates, and listserv communications about system updates, security, and other issues. NEHEN operates with two types of participants, typically split by size, into larger Classic and smaller Net participants. The two groups have a slightly different approach to access and usage; Classic participants play a more active role in NEHEN operations.

Active NEHEN Payer and Provider Participants

The following table outlines the coverage of potential Massachusetts business represented by large NEHEN payer and provider organizations (Classic NEHEN customers in the NEHEN 2.0 scheme).

The data comes from the Center for Health Information and Analysis or CHIA, an independent state agency whose mission is to serve as a steward of Massachusetts health information and to promote a more transparent and equitable health care system that effectively serves all Massachusetts residents. The payer information comes from the Enrollment Trends report released in September 2023 with data from March 2021 through March 2023 and the provider information is from the Massachusetts Acute Hospital & Health System Financial Performance report released September 2023, covering the 2022 fiscal year.
### Classic NEHEN Customers

<table>
<thead>
<tr>
<th>Payers</th>
<th>2022 Enrollment*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Payers</td>
<td>3,346,000</td>
</tr>
<tr>
<td>Public Payers</td>
<td>2,890,000</td>
</tr>
<tr>
<td>Total</td>
<td>6,236,000</td>
</tr>
<tr>
<td>Total MA Market</td>
<td>6,974,000</td>
</tr>
<tr>
<td>Market Share</td>
<td>89.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providers</th>
<th>2022 Net Patient Services Revenue*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Health Systems</td>
<td>$10,773,940,000</td>
</tr>
<tr>
<td>Teaching Health Systems</td>
<td>$1,694,765,000</td>
</tr>
<tr>
<td>Medical Groups</td>
<td>$1,100,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>$13,568,705,000</td>
</tr>
<tr>
<td>Total MA Market</td>
<td>$31,130,759,000</td>
</tr>
<tr>
<td>Market Share</td>
<td>43.6%</td>
</tr>
</tbody>
</table>

* Data was rounded to the nearest thousand

### Appendix D: Prior Authorization Background

The utilization management practice known as prior authorization has long been a burden on payers, providers, and patients alike but it has generated heightened controversy recently. Private and public payers note that it is essential to ensure patient safety, decrease utilization of low-value care, avoid overuse of health care services, and direct care to appropriate, cost-effective health care settings. Providers push back on its administrative complexity, the cost of complying with different requirements, lack of transparency in their development, and patient care delays in their call to limit the services subject to prior authorization.

Industry groups such as the Da Vinci FHIR accelerator have been working diligently to make improvements to the prior authorization process possible, most notably in the area of automation and use of APIs to exchange prior authorization data. Three FHIR implementation guides (Coverage Requirements Discovery or CRD, Documentation Templates and Rules or DTR, and Prior Authorization Support or PAS) have been developed and published that together cover the entirety of the prior authorization process from the initial PA inquiry to the final determination whether one is granted. These guides have been accepted by the healthcare industry as the standard for automating prior authorization.

Prior authorization has also been the focus of ongoing legislative and regulatory scrutiny. CMS released a notice of proposed rulemaking in December 2022 that, among other things, mandates the use of a PARDD FHIR API that is effectively a combination of the three Da Vinci implementation guides noted above (it does not mandate the use of
these IGs for technical reasons but strongly recommends them). ONC is expected to release its version of a proposed rule covering prior authorization later this year. Various bills have been considered and taken up by the US Congress in the current or prior session, several of which are still active, and more than 30 states (including Massachusetts) have considered more than 90 bills in the recent past. This activity shows no signs of abating and, as long as prior authorization remains a pain point, is likely to increase.

MHDC and NEHEN have been working on projects to improve prior authorization processes and reduce related administrative burdens for years. NEHEN ran an automated prior authorization pilot program in 2017 in conjunction with Harvard Pilgrim Health Care (now Point32Health) and several provider organizations including Baystate Health System, Partners Healthcare (now MassGeneral Brigham), UMass Memorial Health Alliance, VNA Care Network, and Beth Israel Deaconess Medical Center’s OB-Gyn service. This program focused on managing medical guidelines and policies for a variety of services including medications, home health care, and surgeries. It used provider questionnaires instead of manual processes like faxes and manual interventions dropped from 100% of requests to 18% and achieved a touchless rate of 82% for prior authorization processing. It also reduced the average time for response from 6 days to 15 minutes and updating guidelines took less than 24 hours instead of days or weeks. While the pilot project greatly streamlined the prior authorization process, it was eventually discontinued for a variety of reasons including the absence of standards, the need for more consistent technical infrastructure, the inability to accommodate changing standards and expectations, and the need for more widespread participation across the state to make the efforts worthwhile.

In 2022, MHDC ran a prototype electronic prior authorization project with Blue Cross Blue Shield of Massachusetts, New England Baptist Hospital, and its technology services vendor Olive (now Availity). This time, the project was standards based, using the Da Vinci CRD FHIR implementation guide to determine when prior authorization was needed for a service. Funded primarily by a grant from the former Massachusetts eHealth Collaborative, MHDC offered implementation assistance to test this use case for a limited number of clinical scenarios. Requiring about six months of planning, development, and testing, the project showed that the CRD IG could be successful in a production environment.

While the prototype was ongoing, MHDC simultaneously worked with the Network for Excellence in Health Innovation (NEHI) to convene The Automation Advisory Group (TAAG) consisting of payers, providers, technology companies, EMR vendors, and state and federal government representatives. Funded by the Health Policy Commission and four technology services companies working in the prior authorization space (Change Healthcare, Cohere Health, Hook, and ZeOmega), TAAG provided feedback on existing options for automation such as the three Da Vinci implementation guides based on their experience and existing capabilities. Using this feedback and experience from the MHDC prototype project, MHDC and NEHI made recommendations for standardized electronic prior authorization rules to be adopted across the entirety of Massachusetts.

Recommendations from the report, called Advancing PA Automation Across Massachusetts, include:

- Automation of PA should be a state mandate applicable to public and commercial payers and providers, with state oversight in a single state agency
- The Da Vinci IGs are a strong foundation for automation, with some modifications (consistent with the Center for Medicare and Medicaid Services (CMS) Proposed Rule) to address unique concerns and circumstances in Massachusetts
- Technical assistance for providers and payers is required and should be centralized to reduce costs for individual organizations and promote coordination
- Ongoing improvements to the PA process will be necessary. A multi-stakeholder Task Force should be established to provide measures of the impact of automation and recommend additional reforms.

We believe these recommendations – and the proposed work in this RFP - are consistent with ongoing state and federal legislative and regulatory pushes but acknowledge this is a rapidly changing area and the ability to make quick...
adjustments (in keeping with the final bullet point above) will likely be necessary.

**Appendix E: Quality Measures Background**

MHDC has been working with the payers and providers in Massachusetts to standardize data and exchange methods for quality measures for years. To date, most of this work has been under the auspices of our Data Governance Collaborative (DGC). MHDC released the first version of the MHDC Quality Measures Specification developed by the DGC in December 2019 and it is currently being used by multiple payers and providers across the state. This specification outlines a flat file Secure FTP exchange using pipe-delimited data in categorized text files. You can find the current and past versions of the specification [here](#).

Payers and providers both agree that standardized data exchange supporting quality measures is an essential component of healthcare operations. MassHealth (our state Medicaid agency), its parent the Executive Office of Health and Human Services (EOHHS), and the Health Policy Commission have expressed interest to MHDC in moving toward a FHIR-based exchange of quality measures data. Large payer organizations in the state have also expressed interest in developing and implementing a standardized way to exchange quality measures data using FHIR and a reasonable pathway for ensuring its consistent, widespread adoption.

NCQA and CMS have also been pushing their quality measures in the same direction. Both organizations have committed to using FHIR for quality measures within a few years with the rate of their proposed adoption accelerating over time. The first digital-only, FHIR-based quality measures are scheduled for Measure Year 2024, meaning they need to be used for the Spring 2025 reporting cycle.

USCDI+ extends USCDI by defining minimum supported data sets for specific domains or programs. The ONC initiative ensures data aligns with core USCDI when possible, follows standards, and meets program requirements. ONC collaborates with agencies like CMS, CDC, and HRSA to create these data sets. ONC published a draft of USCDI+ for Quality and recently closed a public feedback period. This is the minimum dataset they envision being necessary to support quality measures across the healthcare industry. Once finalized, USCDI+ for Quality may be referenced or required in regulation.

There is also a QI-Core implementation guide that’s existed for a long time that represents a set of baseline data needed to represent most quality measures in FHIR. It is not yet clear if this is expected to align with USCDI+ for Quality in the future the same way new versions of US Core align with each version of USCDI.

A future necessitating quality measures data standardization and exchange of that data via FHIR is clear. We see this as a core use case for NEHEN 3.0, one that is a natural extension of our current work in the area of quality measures.

**Supporting Existing Users of the MHDC Quality Measures Specification**

The existing MHDC Quality Measures specification is being used by payers and providers throughout Massachusetts. MHDC. Development of a glidepath to FHIR for these users is essential. We expect for many of our users this will mean using NEHEN 3.0 to meet their existing and future quality measure exchange needs, but it is important to MHDC as a non-profit organization to continue supporting the community as a whole when we can and to not leave any existing users out in the cold even if they do not wish to move to NEHEN 3.0 immediately.

Part of the initial NEHEN quality measures work is supporting both of these constituencies. We see this containing two components:

1. Development of a FHIR-based quality measures specification (implementation guide) that, at a minimum, includes the existing features and data included in the MHDC specification. This specification could be used within NEHEN or on its own for organizations that may not be ready to sign on to the NEHEN option.
2. Onboarding of some or all of the existing MHDC specification users to the NEHEN FHIR equivalent using the new MHDC specification.

We see the specification development step falling under the data governance pieces of NEHEN and being managed primarily by MHDC (likely through the DGC) with community and, as appropriate, vendor input. Further discussion of how this fits into our wider quality measures vision and support is outlined in the main quality measures use case discussion above.

Appendix F: Future Vision

This section provides some additional information about our vision for the future of data exchange.

Background

MHDC sees FHIR as the future of health data and health data transactions for the foreseeable future. We plan to make using FHIR as easy as possible and provide a glidepath for organizations using flat file data exchanges via Secure FTP or invasive direct data access or other current mechanisms for limited data exchange to move to FHIR and expand the amount and type of data they exchange as that exchange becomes easier, more automated, and more consistent across exchange partners. At the same time, we understand the existing X12 EDI transactions are a critical underpinning of our healthcare system for certain use cases and MHDC must continue to support high quality exchange of these HIPAA-mandated transactions.

We hope that at some point in the future HIPAA rules are changed to allow for easier use of technological advancements such as FHIR. There is no reason that administrative data could not be exchanged using FHIR for at least certain use cases if allowed by law and regulation and our expectation is that infrastructure needed to support this would likely expand over time if allowed.

At the current time, the only way to use a FHIR solution for these transactions without onerous data mapping and translations is via the exception process managed by CMS. Exceptions grant the right to bypass certain HIPAA transaction rules for a limited time period in exchange for extensive reporting on the process and results. NEHEN is not currently planning to seek any such exceptions but may revisit that decision in the future.

In the meantime, MHDC will continue offering all of the existing NEHEN X12 EDI services while building a core FHIR infrastructure and an expanding stable of supported use cases discussed further below. While we will limit the initial use cases, we intend for the core infrastructure - our base FHIR platform - to be designed and built for general FHIR support with an eye toward standard features and not designed specifically for our first or first few use cases without regard for other general features.

Vendor Requirement 1: Please discuss how you will you ensure that any solutions you supply to meet core infrastructure or initial use case needs will be able incorporate and adopt to future changes, new features, new use cases, new regulations, and other potential future needs as appropriate for your solutions.

Vision

We are looking for a scalable, extensible, performant, and affordable infrastructure for both X12 EDI and FHIR. While we see FHIR as the future, that does not mean we are ignoring the needs of our X12 EDI customers (and, as noted above, some of our FHIR services may need to leverage X12 for portions of their workflows to comply with HIPAA). We plan to update our existing services to support adopted updates to X12 versions and CAQH CORE operating rules as well as to be more performant and affordable.

On the FHIR side of the house, we plan to start with an infrastructure that allows for iterative development of use cases that all use a common set of support services such as identity management, consent, and provenance management. Our
goal is to make it technologically, operationally, and financially possible to move exchange functionality to FHIR APIs for as many organizations as possible.

NEHEN as it currently exists is focused solely on transactions between payers and providers. We plan to continue supporting payers and providers as our main customer base. Our initial use cases continue to involve transactions between payers and providers, but we anticipate supporting other variations (payer/payer and provider/provider) in the future. However, while we currently have no plans to support consumer access to data via NEHEN, we do not want to make any decisions that would preclude supporting use cases requiring consumer access in the future.

**Potential Additional Phase 2+ Use Cases**

MHDC has no concrete plans for the feature set of NEHEN 3.0 phase 2. As indicated by our RFI above, equity exchange is a likely candidate. Some of the additional use cases under consideration for later implementation include:

1. Price transparency. We anticipate adding functionality specifically aimed at collecting and transmitting the data needed to compile Good Faith Estimates (GFEs) among all providers involved in a specific estimate as well as transmitting the relevant data from the convening provider to the payer for Advanced Explanation of Benefits (AEOBs). Per the No Surprises/CAA law, we anticipate using realtime, current information on a patient's benefits and supporting both scheduled care and patients requesting price information to help them decide where to schedule their care.

   In the future we foresee expanding this functionality to potentially support real time price data availability in the EHR at the time of treatment to help inform clinicians and patients at the time treatment decisions are being made.

   We may also choose to implement functionality to help coordination between convening providers/facilities and co-providers/co-facilities, perhaps via requests to payers for information about coverage status for certain secondary portions of the bundle being handled by others and/or network status of their preferred facilities and/or providers (we note that network status of specific providers may not be particularly relevant given the No Surprises Act clause requiring all providers seen at an in-network facility to be treated as in-network providers).

2. Provider directory support

   There are many provider directory requirements in various regulations, but very little direct support for coordinated backend functionality. We do not anticipate hosting a standalone provider directory ourselves unless we see significant customer demand, but rather we see our role as providing the support needed to ensure payer and provider participants can send, receive, and validate content for their directories/providers/facilities in keeping with the No Surprises Act and other regulatory requirements and to provide a better experience for consumers.

   For payers, this means having the ability to get updates from all of their providers through a single interface in a standard format at the required intervals or when an event triggers the need to update information. It also means being able to send required validation requests in a standard format to all participating providers and receiving their responses in a timely, standardized format.

   For providers, it means having the ability to update all payers at once whenever clinician or facility data changes, having a standard predictable set of data and format to use for these updates, and having a standardized format for required validation requests.

3. Payer/provider endpoint directory for payers, providers, and third party applications

   While we see NEHEN remaining focused primarily on payers and providers, we also believe a centralized single data store containing all available FHIR (and perhaps other) endpoints is valuable beyond that primary audience.

   For third party apps, particularly those serving patients, discovering the correct endpoints for each payer and provider
can be a real pain point. Being able to offer these app developers a validated list of relevant endpoints would be a real service that potentially would require little additional effort on MHDC’s part.

4. Provider Access APIs. Certain payers are required to send providers who can demonstrate a treatment relationship with a patient clinical and administrative data upon request (the CMS-0057-P proposed rule only requires this for in-network providers, but made it clear that there was consideration of requiring this for all providers). We anticipate providing this service for all payers. We would consider optionally supporting this for out of network providers if the CMS final rule remains restricted only to in-network providers.

5. Proof of patient treatment relationship. In the CMS-0057-P proposed rule, providers are required to demonstrate the existence of a treatment relationship with patients before requesting their data via Provider Access APIs. We potentially anticipate supporting a standardized mechanism for providing this proof. The proposed rule solicited comment on what should constitute such proof but did not outline specifics. MHDC responded with several thoughts, but would convene the NEHEN/MDHC community to collectively decide on a consistent set of rules should the CMS final regulation give discretion to implementers.

6. Payer=>Payer APIs. Certain payers will be required to support FHIR-based APIs to move administrative and clinical data from an existing payer to a new one upon opting in at enrollment or request of the patient at any future time. MHDC envisions supporting this process for all payers in a future iteration.

7. Consent management. Many of the data exchanges included in regulation require either patient opt-in or support the right for patients to opt-out. In addition, patients have the right to request certain data not be shared even if it would normally otherwise qualify for exchange. We are considering providing a service to help facilitate management of these consents. At the current time, most consent requirements are at a fairly generic level (either global or groups of similar data considered with a single consent rule) and initially any consent functionality would likely focus on regulatory consent requirements, but our vision includes eventual support for more granular consent. We note that high-level all-or-nothing consent may be part of the general FHIR infrastructure; the future plans will likely be related to expansion of this to support more granularity or specific use cases.

8. FHIR integration for small providers and payers. We understand that the IT experience, resources, and budget for certain smaller provider offices and even some smaller payers may make FHIR adoption very difficult. Yet regulations keep coming, business use cases benefit from its use, and trading partners are starting to request it. MHDC is considering a service whereby certain providers could outsource their FHIR support to NEHEN for the purposes of participating in NEHEN-based FHIR data exchange. We envision two potential pathways for this support:

- use of a SMART on FHIR app connecting to non-certified health IT
- collection of data via some other standardized format, converting it to FHIR, and maintaining it in a FHIR data store for further exchange with NEHEN participants

9. Expansion of a single pot of data to encompass additional use cases. MHDC has long believed in the benefits of defining a common pot of clinical, patient, and administrative data crossing the boundaries of use cases to exchange in a standardized, consistent format. Nearly every organization we’ve spoken to about data exchange indicates one of the major pain points is the need to exchange mostly the same (mostly clinical) data in slightly different formats using slightly different exchange mechanisms to different business units at each exchange partner for each exchange partner they have. Providers have been a bit more vocal about this issue, but it consistently comes up with both payers and providers.

10. Revenue cycle management. NEHEN may wish to add additional administrative features around revenue cycle management including automated claims status inquiries, automated pre-encounter checks for patient responsibility amounts, or other related features.
We welcome comments on your experiences or thoughts on any or all of these potential future services with the understanding that we are not currently planning to select vendors to implement any of them and will not base any of our decisions on such comments. However, we may look favorably on vendors with experience we feel lends itself toward implementation beyond the current use cases and/or with clear thoughts on potential pathways to support a roadmap from our current requests to a future supporting some or all of these or other potential use cases.