NEHI Network for Excellence in Health Innovation

Advancing Prior Authorization Automation Across Massachusetts

A NEHI Report

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Acknowledgments

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The views expressed in this report are solely those of NEHI and its staff.

About NEHI

NEHI is a national nonprofit, nonpartisan organization composed of stakeholders from across all key sectors of health and health care. Our mission is to solve complex problems and achieve value in health care by fostering interdisciplinary collaboration and innovation.

NEHI brings together expert stakeholder perspectives with relevant research to devise policies that speed the adoption of innovations.

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Executive Summary

A large portion of administrative burden can be attributed to inefficiencies associated with manual processes for completing prior authorizations (PAs) (i.e., via telephone and facsimile), which engender poor patient satisfaction, physician frustration, unnecessary costs, as well as loss of revenues. A growing number of states are responding with legislative reforms, often advanced by physician and hospital groups, to eliminate or reduce the number of services requiring PA and exempt certain physicians from PA requirements. While these are gaining traction, they remain controversial. Automation of PA, on the other hand, concretely benefits all stakeholders in the PA process by significantly reducing delays in patient care as well as physician costs. It will also serve, in the long term, to facilitate access to data that can guide further changes in PA processes. Indeed, the Centers for Medicare and Medicaid Services (CMS) recently proposed regulations mandating that certain payers, including Medicare Advantage organizations and state Medicaid and Children's Health Insurance Program (CHIP) agencies automate PA by 2026.

This report details the outcome of a project led by the Network for Excellence in Health Innovation (NEHI) in partnership with the Massachusetts Health Data Consortium (MHDC) to enable Massachusetts to take a leadership role in adopting automated PA solutions.

Table 1. TAAG Organizations

- Berkshire Health Systems
- Blue Cross Blue Shield of Massachusetts
- Boston Children's Primary Care Alliance
- Change Healthcare
- Centers for Medicare & Medicaid Services
- Cohere Health
- Community Care Cooperative
- Counterpoint Solutions
- Epic
- Fallon Health
- Health New England
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- Massachusetts Association of Health Plans
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- New England Quality Care Alliance
- Office of the National Coordinator for Health Information Technology
- Point32Health
- Point-of-Care-Partners & HL7 Da Vinci
- Reliant Medical Group
- Self-affiliated Subject Matter Expert
- Steward Health Care
- WellSense/Boston Medical Center Health System
- ZeOmega

The work was funded by the Massachusetts Health Policy Commission (HPC) and four technology service companies: Change Healthcare, Cohere Health, Hook, and ZeOmega. At the center of the project, and core to fulfilling its goals, were committed participants from across the healthcare system, which came to be known as The Automation Advisory Group (TAAG). Consisting of payers, providers, technology companies, electronic medical record (EMR) vendors, and state and federal representatives (see Table 1), TAAG provided feedback on existing guidelines for automation (the Da Vinci Implementation Guides [IGs]), informed by their experiences and capabilities. Based on TAAG's input and analysis of a pilot effort in Massachusetts as well as implementation initiatives elsewhere, NEHI and MHDC made the following recommendations to advance automation in the next two years:

Recommendations

- Automation of PA should be a state mandate applicable to public and commercial payers and providers, with state oversight located in a single state agency.
- The Da Vinci IGs are a strong foundation for automation, with some modifications (consistent with 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 of the PA process will be necessary. A multi-stakeholder Task Force should be established to provide measures of the impact that automation has as well as to recommend additional reforms.
- To ensure that all providers and payers are able to adopt the required technological and process changes that automation requires, the state should make available need-based financial assistance, especially for MassHealth and organizations that serve MassHealth members. By supporting centralized technical assistance, however, the state may efficiently reduce the support required.

The time to automate is now. Finalized federal mandates to automate are imminent and Massachusetts payer and provider organizations are aware of the time and effort that must be given to the implementation process. Automation is a collaborative effort that will be more successful with a clear mandated roadmap, incentives, training, need-based financing, and other supports to assist in its implementation.

Key Definitions

API (Application Programming Interface):
A defined set of protocols that connect applications (apps) via web-based standards

CDS (Clinical Decision Support) Hooks Service:
An API that triggers clinical decision support for the Provider from within the workflow of the EHR

CRD (Coverage Requirements Discovery):
Step during which the Provider's system connects with the Payer's system to determine whether the patient is eligible for the requested service, if prior authorization is necessary, and if other information is needed to make treatment decisions at the point of care (e.g., patient responsible amount[s])

DTR (Documentation Templates and Rules):
Step during which the Provider can access FHIR questionnaires and other forms necessary for the prior authorization request from the Payer. These forms can be auto-populated using a SMART on FHIR app or a custom app from within the EMR

EPA (Electronic Prior Authorization):
The ability to send, receive, and respond to a PA request using a defined set of data exchange standards and technologies by an entire community and with little or no need for human intervention

FHIR (Fast Healthcare Interoperability Resources):
A framework of structured data definitions organized into 'resources' for APIs to use as stand-alone data exchanges or integrated with other web-based RESTful services. REST (REpresentational State Transfer) is a way to access resources that lie in a particular environment. RESTful services define a way in which resources can be accessed

PAS (Prior Authorization Support):
The stage during which the prior authorization request bundle (questionnaire & necessary documents) is sent from the Provider to the Payer/Intermediary (e.g., clearinghouse) to process and ideally send back an automated decision.

SMART (Substitutable Medical Applications and Reusable Technologies) on FHIR App:
A standards-based, launchable application that allows the sharing of electronic health information. The SMART on FHIR app uses FHIR standards

X12 278/275 Transactions:
HIPAA-mandated, standardized data definitions and connectivity rules for Payers and Intermediaries to exchange administrative data

Introduction

Project Overview

This project was conducted by the Network for Excellence in Health Innovation (NEHI) and the Massachusetts Health Data Consortium (MHDC). It was designed to enable Massachusetts to take a leadership role in adopting automated prior authorization solutions by producing an actionable, pragmatic plan that standardizes required activities while accounting for the Massachusetts regulatory, payer, provider, and technology environments. We recommend the data-sharing standards that should be adopted and provide guidance about the structures and incentives that are needed to move the adoption of prior authorization automation forward in a material way within the next two years.

We are grateful for project sponsorship and guidance provided by the HPC and four technology service companies: Change Healthcare, Cohere Health, Hook, and ZeOmega.

The HPC is an independent state agency that develops policies to reduce healthcare cost growth and improve the quality of patient care. It focuses on addressing administrative complexity in health and includes PA in its list of priorities.

Change Healthcare is focused on "accelerating the transformation of the U.S. healthcare system through the power of the Change Healthcare Platform," which "provides industry-leading analytics, expansive data, and unparalleled connection and data transfer between providers, payers, and consumers to help improve workflows, increase administrative and financial efficiencies, and improve clinical decisions."[1]

Cohere Health is committed to "bringing together the science, technology, and expertise to better guide outcomes and experiences for patients," particularly surrounding the prior authorization process.[2] Cohere "leverages an innovative blend of [Artificial Intelligence] and machine learning, deep, evidence-based clinical expertise, and real-time analytics, not only to digitize prior authorization, but also to guide the best and fastest care across the entire patient journey."[2]

Hook's mission is "to create a more efficient healthcare system and eliminate waste by streamlining prior authorization and utilization management."[3] Hook delivers "end-to-end next-generation prior authorization for providers and payers, using a standards-based approach to dramatically reduce care delays, turnaround times, revenue leakage, and write-offs."[3]

ZeOmega "empowers health plans and other risk-bearing organizations with the industry's leading technology."[4] ZeOmega's Jiva platform offers "utilization management, case management, disease management, population health, and analytics capabilities," providing clients with "workflow excellence and proven results thanks to the system's stand-out integration capabilities, clinical intelligence, and powerful rules engine."[4]

Context

Prior authorization (PA), or pre-authorization, is a necessary utilization management (UM) tool; it is a process by which providers seek approval from a health plan (we use *health plan* and *payer* interchangeably throughout this report) to deliver a specific service/treatment to a patient.[5,6] The health plan, or its contracted UM organization, approves or denies the request once it determines that the member's benefit covers the service, the service is medically necessary, follows the standard of care, is cost-effective, and occurs at the correct site/location.[5,6] In some cases, payers ask the provider or provider's staff for more information before making a decision, often prompting multiple exchanges between providers and payers, including phone calls and the delivery of documents by facsimile and mail. These multiple exchanges and the use of paper documentation increase administrative burden.

Commentaries on the burdens imposed by PA processes include the lack of transparency in medical necessity guidelines across payers resulting in delays in patient care.[6,7,8,9,10] Epling et al.[10] (2014) compared provider time spent submitting PA requests across Medicaid and commercial insurance. They found that commercial PA requests require approximately six additional minutes compared with Medicaid PA requests and suggest that, in addition to differences in PA requirements across commercial payers for the same service, varying medical necessity criteria and submission processes likely add to administrative complexity, resulting in additional time needed to complete the process.[6,10]

The resources required to administer PA are also significant. According to a 2021 survey administered by the American Medical Association (AMA), 40% of physicians reported that they have staff members dedicated to processing PA requests.[11] Physicians also reported spending "an average of almost two business days (13 hours) each week completing PA" requests.[11] Furthermore, practices surveyed by the AMA reported that they must complete 41 PA requests, on average, per physician.[11]

The burdens associated with PA contribute to administrative spending, although converting from manual to automated transactions will save time and therefore costs.

The 2022 CAQH Index,[A] estimated that automated PAs would save providers 11 minutes[B] per transaction when compared with manual PAs[12] According to CAQH, this translates to a savings opportunity per transaction of $9.60 across both providers and health plans. CAQH defines cost per transaction as the "labor costs (e.g., salaries, wages, personnel benefits, and related overhead costs) associated with… transactions as reported by… providers." The "costs include the labor time required to conduct the transaction, not the time and cost associated with gathering information for the transaction and follow-up.")[12] Based on the estimated national volume of PAs, CAQH reported an industry (i.e., providers and health plans) cost savings opportunity[C] of $449 million.[12] Of course, as we later clarify, savings derived from adopting full automation, as we recommend, will vary both by the extent to which a provider and payer have adopted some automation processes and by the costs associated with personnel who currently carry out PA processes. Cost reductions from automation are principally related to the reduction in labor required to submit and adjudicate PA requests.

PA has become a target of legislative and regulatory reforms. In December 2022, the AMA launched a grassroots advocacy campaign on PA. Both federal and state policymakers have introduced initiatives to address the burden caused by current PA rules and processes. As many as 26 bills related to PA were submitted this year (2023), according to a late January article[13] PA reforms, such as Texas's 2021 gold-carding[D] bill, have inspired other states to introduce their own legislation; gold-carding laws were also passed in 2022 in Michigan and Louisiana.[13] New Jersey is currently aiming to reduce PA decision time frames and eliminate PA for entire courses of care for chronic conditions.[13]

A CAQH Index tracks "annual volume and costs associated with nine transactions, [including PA], for the medical and dental industry."[12] It should be noted that CAQH differentiates between PA transactions and attachment transactions; the latter includes PA attachments.

B CAQH did not provide time savings estimates for health plans.

C CAQH defines cost savings opportunity as "the cost savings that could be achieved by switching the remaining partially electronic and fully manual transactions to fully electronic [automated] transactions."[12]

D Gold-carding is a process by which providers are exempt from PA for a specific service/treatment if they demonstrate a history of high approvals (e.g., 95% approval rate) for said service/treatment. Audits are, however, necessary to ensure the physician's ordering behavior remains static.

In a prior project, NEHI discussed many of these proposals with a multi-stakeholder group comprising payers, hospitals and health systems, as well as clinicians.[E] Although no one argued that automating the PA process would resolve every issue, there was agreement that, if implemented correctly, automation will significantly reduce burden[F] surrounding PA requests and improve the speed and accuracy of responses at the point of care.[14] It will also provide a standardized method for collecting data that informs management of the process and thereby enables further reform. Sometimes referred to as electronic PA (ePA), automation provides the ability to send, receive, and respond to a PA request with little or no need for human intervention, using a defined set of data exchange standards and technologies. A provider is able to send a PA request to the health plan from the provider's electronic medical record (EMR) or a third-party vendor solution.[15] The payer receives this request and, within seconds, transmits a response back to the provider via the EMR or third-party vendor solution. (We describe this process in more detail in our Methods section).

AUTOMATION IS NOT A PANACEA, BUT, IF IMPLEMENTED CORRECTLY, WILL SIGNIFICANTLY REDUCE THE BURDEN SURROUNDING PA REQUESTS

E NEHI previously conducted a consensus-based project titled 'Streamlining Prior Authorization' and produced several recommendations that would serve to ease the burden of PA; accelerating the move toward automation received full consensus among the group.[6]

F There will always be complex services and/or situations for which manual review by the health plan is necessary.

The Time for Automation at Scale is Here

The 21st Century Cures Act, which was signed into law in 2016,[16] is arguably the catalyst for current federal focus on advancing healthcare interoperability. Among several provisions, the Cures Act[17] sought to advance EMR adoption, mandate patient information access, and prohibit information blocking.[G] The following proposed agency mandates are derived from the Cures Act.

The Office of the National Coordinator for Health Information Technology (ONC), a federal agency focused on certifying electronic health records to promote the effective electronic exchange of information, released a Request for Information (RFI) in January 2022 to collect public input on ePA standards, implementation specifications, and certification criteria that could be adopted in the future within the ONC Health IT Certification Program.[19] The Health Information Technology Advisory Committee (HITAC), was tasked with making recommendations to the National Coordinator in response to the RFI based on consideration of comments submitted and its own deliberations. In March 2022, it released 13 recommendations to ONC.[20] ONC is in the process of revising its certification criteria based on the recommendations. Most stakeholders expect these to be released within the next few months. (America's Health Insurance Plans [AHIP], has made a strong argument for requiring certified electronic record technologies to include ePA.)[21]

Perhaps the most significant development, is the release of a proposed rule in December 2022(CMS-0057-P; hereafter *Proposed Rule*), by the Centers for Medicaid and Medicare Services (CMS) (nearly one year after the commencement of this project).[H] Reffered to as "Advancing Interoperability and Prior Authorization Automation," it aims to improve electronic data exchange in healthcare and streamline the PA process.[24] One of the Proposed Rule's five key provisions mandates changes in the PA processes

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G Information blocking "is a practice by an 'actor' that is likely to interfere with access, exchange, or use of electronic health information…except as required by law or specified in an information blocking exception."[18]

H It should be noted that the Proposed Rule is long-awaited after a withdrawn Final Rule, originally published in January 2021, referred to as the "CMS Interoperability and Patient Access final rule." The rule called for impacted payers to streamline PA by supporting data exchange and ePA through the use of FHIR-enabled APIs that would connect provider and payer technologies to request and respond to PA requests electronically.[22,23] The current Proposed Rule is similar, though not identical to the withdrawn Rule.

of impacted payers (Medicare Advantage [MA] organizations, state Medicaid and Children's Health Insurance Program [CHIP] Fee-for-Service [FFS] programs, Medicaid managed care plans and CHIP managed care entities, and Qualified Health Plan [QHP] issuers on the Federally Facilitated Exchanges [FFEs]). It requires these payers to build and maintain a Fast Healthcare Interoperability Resource (FHIR) Prior Authorization Requirements, Documentation, and Decision (PARDD) Application Programming Interface (API). APIs are a defined set of protocols that applications (apps) through web-based standards (e.g., provider and payer systems). Effectively, this would automate determinations of a patient's health plan coverage, confirm or rule out the need for PA, identify PA information and documents required for the payer's decision, and facilitate the exchange of information from EMRs or practice management systems. (We describe this workflow, according to the Da Vinci Implementation Guides [IGs], in more detail in our Methods section). Finally, the Proposed Rule requires the implementation of automation by impacted payers by January 1, 2026.

Because some reports also tout the improvements Artificial Intelligence (AI) will bring in alleviating burden in the healthcare industry[25,26] and has been cited as one method to further improve PA automation,[27] it seems worth addressing the intersection between automation and AI. Indeed, payers can use AI to understand clinical data to which they apply their medical necessity rules, and providers can use AI to better organize the data they transmit to payers. AI thereby facilitates and optimizes automation, including increasing the utility of the data automation produces. That said, automation produces multiple benefits without incorporating AI and it is unrealistic to expect payers and providers to move from primarily manual PA transactions to transactions using AI, particularly for those organizations or practices with fewer resources available. For this reason, we do not focus on AI in this report.

Massachusetts is primed to pursue automation. The state's emphasis on providing universal access has also forced it to confront healthcare costs,[I] putting pressure on

I The Massachusetts Health Policy Commission (HPC), an independent state agency, was created in 2012 through Bill S.2400 – An Act Improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation.[28] The HPC is responsible for setting the health care cost growth benchmark and setting and monitoring provider and payer performance relative to the health care cost growth benchmark, among other responsibilities.[29] The HPC "may encourage, cajole, and, if needed, shame [an entity] into doing their part to control costs."[30] For example, the HPC may require an entity that surpasses the cost growth benchmark to "file and implement a performance improvement plan."[30]

both payers and providers to reduce costs. A focus on workforce burnout by providers has also accelerated their calls for PA reform.[J] Moreover, Massachusetts is a unique environment; most of its public and commercial health plans are local, not-for-profit organizations, and it has executed collaborative efforts in years prior to accelerate the adoption of technical changes involving healthcare processes.

An actionable, pragmatic plan that standardizes required automation implementation activities while accounting for the Massachusetts regulatory, payer, provider, and technology environments, will accelerate automation and the benefits it provides.

J 'An Act to improve the health insurance prior authorization process' (H.1143) was filed earlier this year (2023).

METHODS

Considering the project's objectives, NEHI and MHDC initiated work by recruiting members for an advisory committee, "The Automation Advisory Group" (TAAG), which would together comment on a roadmap for the automation process and attendant requirements. We selected TAAG members from the MHDC and NEHI member bases and identified additional stakeholders through research and prior work on streamlining PA. In addition to technology service providers (interchangeably referred to as vendors), the group sought to involve Massachusetts payer and provider organizations of different sizes and resources. NEHI and MHDC met with their primary funder, the Massachusetts HPC, as well as representatives of the Mass Collaborative,[K] to review the list of participants and provide input. Finally, NEHI and MHDC invited state and federal policymakers to participate given the large role that federal regulations will play. Interviewees and focus group participants were selected from TAAG. (List of TAAG members in Appendix B.)

To assess stakeholder readiness for automated PA solutions, the project team used the Da Vinci IGs as a foundation for automation requirements. The Da Vinci IGs were created by Health Level 7 (HL7) and the Da Vinci Workgroups.[L] They are often referenced in automation discussions due to the broad input HL7 and the Da Vinci Workgroups have obtained through their extensive member base, which includes payers, providers, and health IT vendors.[32] It should be noted that while the Proposed Rule does not require the use of the Da Vinci IGs, it recommends their use. In essence, the IGs were not specifically developed for inclusion in the Proposed Rule but remain consistent with the Rule's requirements.

K The Mass Collaborative is a voluntary, open organization of more than 35 payers, providers, and trade associations dedicated to reducing complex and cumbersome health care administrative processes in Massachusetts.

L The Da Vinci Workgroups do not consider medications "covered under a prescription drug program benefit" within scope, as PA for such medications is conducted electronically using a separate set of standards.[31] (Read more about the National Council for Prescription Drug Program's [NCPDP] SCRIPT standard here). We therefore excluded medications for the purpose of this project although clearly obtaining PA for medications is a significant issue for many providers, particularly pediatricians and specialists, who often rely on complicated medication regimens (e.g., oncologists).

The IGs outline a workflow that accelerates the adoption of FHIR-based standards. There were some gaps in the understanding or interpretation of the Da Vinci workflow among project participants, but there was no reticence or resistance to the use of or reference to the IGs. In this report, however, we also identify and suggest modifications in the application of the IGs based on TAAG feedback.

The Da Vinci Implementation Guides Provide a Foundation for an Automation Roadmap

The IGs prescribe activities that constitute end-to-end automation, minimizing the time and effort of both the providers and administrative staff, while accelerating the payers' decision-making process. There are three IGs, which describe how phases of automation are intended to work.

The first IG, Coverage Requirements Discovery (CRD),[33] prescribes how the provider creates an order for a service/treatment within the EMR or by use of a third-party vendor solution. Within the provider's EMR, the provider uses what is known as a Clinical Decision Support (CDS) Hooks API to activate the payer's API service. As defined above, APIs are a defined set of protocols that connect applications (apps) (e.g., provider and payer systems) via web-based standards. The payer's API service responds to the inquiry and automatically provides both coverage and PA requirement information, specific to the member/patient and service requested, back to the provider's EMR. This information is presented to the provider as a set of "cards." (See Appendix A).

The IG, Documentation, Templates, and Rules (DTR)[34] describes the phase during which the provider then reacts to the card's information retrieved from the payer's Prior Authorization Rules Repository. Typical responses include '*Prior Auth Not Required*' or '*Please complete the questionnaire at this link: {embedded URL},*' or '*Please respond to this SMART on FHIR Questionnaire.*' A payer can include any number of responses on a CDS Card, including suggestions for alternative treatments or alternative locations of service, copay/financial responsibility of the patient for the requested service, and more.

In this stage, the provider can link to a SMART on FHIR App that provides automatic access to the payer's rules (i.e., questionnaire and necessary documentation) for the

patient's plan of benefits and service requested. The App can then pull data to populate the questionnaire from the EMR or third-party application using FHIR Resources. This reduces the need to manually complete questionnaires with clinical and administrative data related to the request.[M]

When setting up APIs, the payer is given access to EMR information, which the provider and payer can define using prefetch tokens or prefetch templates. Prefetch tokens are defined by the provider's EMR system and allow payers to access information related to a specific context (e.g., patient, encounter, etc.). The payer is then able to "query" against the data with the provided context and pull relevant information from the EMR's FHIR resources. Prefetch templates, on the other hand, are predefined by payers and seek to pull only the necessary information needed to process the request at hand (i.e., payers cannot gather data that is not pre-defined for the requested service). The SMART on FHIR App then stores the PA information in the EMR for completion (if unable to successfully collect all necessary information, missing information must be manually entered by the provider or provider's staff) and later submission.

The third IG, Prior Authorization Support (PAS),[35] involves the final exchange of information between the provider and payer and the payer's decision based on the information provided. The provider or provider's staff supplements information automatically pulled from the EMR and submits the "bundle" (FHIR Resources)[N] to the payer or intermediary (e.g., clearinghouse) from the EMR or third-party solution. The payer then electronically processes the PA request bundle and assigns a status to it (e.g., '*pended*,' '*approved*,' '*denied*,' or '*request for additional information*'). The payer sends a FHIR response bundle back to the provider's EMR (if the EMR can accept a FHIR bundle) or to a Prior Authorization Converter (if the response must be converted to an electronic X12 transaction from a FHIR bundle). The provider's EMR receives and processes the payer's response and stores the authorization number (if the request is approved). The status of the PA request is also updated in the EMR. If the request is assigned a status indicating that additional information is needed, the provider (or their staff) is able to return to the point in the workflow in which more information or documentation must be provided and subsequently submitted.

M It is not expected, however, that all relevant data will be electronically available in the FHIR resources at the time of the request, but any data that can be collected electronically reduces the burden of manual data collection.

N The bundle includes the completed questionnaire(s) and attachments.

The Automation Advisory Group (TAAG) – First Meeting

TAAG consisted of seven provider organizations/provider system representatives, seven payer organizations, six technology service provider organizations, two state policymakers, two federal policymakers, and three subject matter experts. See Appendix B for the participating organizations on TAAG.

The first meeting, held in May 2022, explained participants' roles in the project and shared an explanation of the components of end-to-end automation. NEHI and MHDC also sought feedback on topics to cover in assessing Massachusetts provider and payer capabilities and on individuals and organizations with whom they should speak.[O] The group noted that focusing on a specific use case would serve to organize the conversation, rather than attempting future discussions that would venture concerns about capabilities for the automation of many different types of services/treatments. The group also agreed that focusing first on the first phase of automation (CRD) would provide detail from which TAAG could produce realistic implementation recommendations that could make a difference for participants in terms of mitigating burdens of PA.[P]

We held a smaller, 30-minute discussion with representatives of the payer organizations on TAAG to identify services that were subject to PA and may be prime use case candidates. We asked payers to consider services that were: 1) of relatively high volume; 2) subject to relatively straightforward medical necessity guidelines; 3) processed

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O NEHI and MHDC shared material with participants prior to the meeting that defined the role of TAAG, outlined the project timeline, and provided important definitions related to the technological architecture necessary for automation. We also delivered a brief background on significant regulatory and demonstrating organizations. See Supplement 1 for the meeting materials.

P We did not focus on the PA appeal process. Automation, if implemented correctly, should reduce the number of PA transactions resulting in a denial and subsequent appeal. That said, automation will not completely relieve administrative burden tied to the PA process. It will, however, produce data (which we discuss in our Recommendations section) that will highlight additional areas for reform that should lead to other administrative simplification efforts and further reduce the number of denials leading to an appeal. Finally, PA automation is a reform effort already backed by multi-stakeholder groups; efforts to reduce variation in medical necessity criteria, for example, are not widely agreed upon across stakeholders. In addition to highlighting additional areas for reform, the data produced by automation may also bolster support for such efforts.

"in-house" (i.e., services not contracted out to third-party UM organizations); and 4) often denied due to inadequate documentation. While it was difficult to select a use case that met all these criteria, payers promoted the following services for consideration: bariatric surgery, physical therapy/occupational therapy (PT/OT), durable medical equipment (DME), genetic testing, and home health. We presented these options to TAAG at its second meeting.

Interviews

Between June and August 2022, we interviewed five provider organizations/provider system representatives, six payer organizations, six technology service provider organizations, one state policymaker, two federal policymakers, and one subject matter expert. See Appendix C for the list of interviewed organizations. See Appendix D for the interview guides. The purpose of the interviews was to gain insight into implementation roadmaps and recommendations given significant operational, workflow, and cultural differences among payer and provider organizations/stakeholders.

The Automation Advisory Group (TAAG) – Second Meeting

The second TAAG meeting, held in August 2022, served to reach consensus on one or two use cases on which we could focus the discussions surrounding automation capabilities and needs moving forward; the group agreed to adopt PT/OT and bariatric surgery as use cases.

The secondary meeting goal was to conduct a "deep dive" into the technological components of CRD (though much of the conversation covered aspects of the next phase, DTR, as well). We asked payers to consider the information they needed from providers to confirm aspects of the CRD phase—whether the patient's benefit plan provided coverage for the service requested, and whether PA for the service was required. Providers were then asked what information they wanted from payers (e.g., do providers want to know when PA is not required or only when PA is required?). The group also discussed ideal provider workflow configurations (e.g., where the provider would like to receive PA notifications from the payer and in what format). We continued this discussion via focus groups.[Q]

Q See Supplement 2 for meeting materials.

Focus Groups

Due to the number of TAAG participants and limited time for discussion during the second TAAG meeting, we conducted small focus group discussions to extend the conversation surrounding CRD and DTR and give each stakeholder an opportunity to provide feedback (e.g., if the CRD workflow according to the Da Vinci IGs complements their existing workflow), express concerns, and ask questions. Focus group participants consisted of four provider organizations/provider system representatives, six payer organizations, six technology service provider organizations, and one subject matter expert. We held four focus groups and one supplemental interview between September and October 2022. All TAAG payer, provider, and vendor organizations were invited to participate in one focus group, although not all who were invited were able to participate. Due to scheduling challenges, participants were asked to sign up for a date and time that best fit their schedule, therefore, stakeholders were not evenly distributed across focus groups.[R]

The Automation Advisory Group (TAAG) – Third Meeting

The third TAAG meeting was held in December 2022. The purpose of the meeting was twofold; we provided a brief overview of the CMS Proposed Rule and highlighted its impact on stakeholders present at the meeting, as well as the Rule's alignment with the current project goal. Second, we used the meeting to test and discuss our recommendations with the group. Overall, TAAG was receptive to the proposed recommendations and did not voice major concerns or objections.[S] NEHI and MHDC plan to host a final meeting to discuss the recommendations made in this report.

R See Appendix E for the focus group guide, which was shared with participants prior to the focus groups.

S See Supplement 3 for meeting materials.

Stakeholder Assessment Findings[T]

Major Priorities and Concerns: TAAG Discussions

There was strong consensus across stakeholders that a roadmap for adopting automation is essential. TAAG members agreed that a single roadmap for Massachusetts stakeholders would bolster coordination and efficiency by providing clarity. This consensus continued when tested against the question of whether to await finalization of the Proposed Rule to confirm automation requirements. TAAG participants stipulated that the roadmap would need to be sufficiently flexible to adjust to federal specifications but concurred that the Rule as finalized would accommodate the Da Vinci IGs. Further, TAAG participants agreed that beginning the process of automation would provide an advantage in meeting federal requirements. Perhaps more importantly, TAAG participants recognized that even the early stages of automation would provide meaningful reductions in PA burdens; knowing whether PA was required for a particular service would benefit both providers and payers by avoiding unnecessary submissions and delays in care.

In proceeding with efforts to automate, however, TAAG members, especially payers and providers, were united in pushing for ways to measure the outcomes of automation. This reflects the need to justify expenditures and ensure that goals for reducing the burdens of PA are met. TAAG members also stressed the need to make data accessible and transparent. In addition, providers were focused on being able to audit and track PA outcomes. It will be important for both providers and payers to verify that automation maintains the integrity of the PA process—that decisions are based on complete and accurate information exchange. Moreover, data can be made available on a system-wide basis (it can be de-identified). In that case, individual payer and provider stakeholders can assess their performance. This has the potential to reduce both unnecessary care and the imposition of PA requirements. We emphasize this in our recommendations.

We provide more specific examples below of priorities and concerns:

T These observations concurrently evolved with the prototype and federal developments.

Massachusetts needs a roadmap to coordinate efforts.

Although the contents of the Proposed Rule clearly indicate the healthcare industry's push to advance automation, a roadmap will still be necessary to outline implementation phases and timelines. The automation implementation process will necessarily occur in phases, which will allow for corrections and adjustments.[U] This will constrain conflicting demands on stakeholder groups, such as providers, EMR and other vendors, giving organizations time to build/buy, test, and refine their solutions before January 1, 2026. In addition to outlining key phases and time frames, a roadmap will also provide for the ability to coordinate responses to issues raised by stakeholders in order to build flexibility while still adhering to certain fundamental steps. To this end, we outline workflow modifications to the Da Vinci IGs in our recommendations.

Implementation efforts should start with CRD.

As implementation will occur in phases, it makes sense to begin with the first phase of automaton (CRD), particularly from a burden reduction standpoint. As described above, CRD connects providers' EMRs (or other third-party application) with payers' rules repositories, and informs the provider whether the select service/treatment requires PA for the patient in question, based on the patient's coverage. All stakeholders agreed that knowing whether a service is subject to PA will significantly reduce burden from the current PA process and provide immediate benefits; providers will not feel compelled to submit PAs to protect themselves regarding reimbursement and payers will not have to process and respond to unnecessary requests.

Implementation must account for differences in stakeholder capabilities.

Aside from the "incentive" that federal regulations will provide for automation, stakeholders asserted that the true benefits of automation cannot be attained without additional supports (carrots) and requirements (sticks), particularly those that will ensure that individual stakeholders fulfill their roles as well as work cooperatively with each other. Financial incentives fit the bill and will be necessary to propel automation implementation and usage across all stakeholders; we know there are stakeholders, even outside our project, of varying sizes and with varying resources at their disposal who will require additional assistance. It does not benefit the overall goal of PA simplification and burden reduction if only select stakeholder groups or large organizations have the ability to (and get to) move forward without the rest.

U Corrections and adjustments will depend on stakeholder and organizational goals, workflows, and more.

Automation must produce data that measures its benefits, improves trust among stakeholders, and makes transparent the functions of the PA process.

TAAG participants were clear that measurements must accompany any mandates to pursue automation for associated reductions in cost and burden. TAAG members advanced the following measures in discussion:

- The reduction in personnel devoted to PA processes. The metric indicates improved efficiency in administrative functions, regardless of whether providers and payers achieve absolute reductions in labor costs. Indeed, perhaps because payers and providers are both facing labor shortages, the desire or need to re-purpose personnel currently devoted to PA may ease concerns about the loss of jobs due to automation.
- Reduction in turnaround time (i.e., time to approval).
- Reduction in time spent on manual tasks (phone calls and faxes).
- Reduction in the volume of PA requests submitted.
- Reduction in the rate of denials.
- Reduction in losses from services provided without PA could be used as a measure of benefit; one system reported that it was aware of "losing millions of dollars in… Massachusetts" due to delays in the PA process, which led it to provide patients with services before receiving authorization.[V]
- Improvements in patient experience.
- Improvements in provider trust in and acceptance of PA.

Participants cautioned, however, that the burden of reporting must be considered so as not to override the benefits of automation.

In discussing the importance of enhancing trust, providers emphasized concerns about payer access to unrelated clinical information in their EMRs in the process of retrieving information for an authorization decision. Providers are concerned that SMART on FHIR questionnaires, which will be able to pull data for requests, could lead to increased

V Rendering of services before PA is approved was noted by several provider organizations, acknowledging the loss in revenue but noting their determination to deliver care to patients.

oversight and interference in the physician-patient relationship. Our recommendations explain that providers can limit the information to which payers have access. Indeed, automated retrieval of information from providers' EMR is accomplished by use of prefetch tokens or prefetch templates. As described in our Methods section, prefetch tokens are defined by the provider's EMR and allow payers to access information related to a specific context (e.g., patient, encounter, etc.). The payer is then able to "query" against the data within the provided context and pull relevant information from the EMR's FHIR resources. Prefetch templates, on the other hand, although predefined by payers, pull only the information needed to process the request. Tokens may allow payers to find the information they need even with variability in providers' entries. The templates, however, strictly limit provider access to information within EMRs. In this way, automation processes can be structured to accommodate provider concerns.

Finally, measures must be perceived as critical in informing further reforms of PA. Providers especially would like to ensure that automation enables access to standardized data that can be used to highlight areas for reform. Variations in PA denials across payers for a given service may, for example, prompt review of medical necessity criteria. We expand on this in our recommendations by clarifying what information automated processes are likely to generate.

Providers emphasized the importance of being able to audit information in the automation process.

All stakeholders agreed that automation would be a significant benefit if it revealed clearly and expeditiously whether a service required PA. Providers noted, however, that they also needed to be able to rely on the information they obtained. Many providers submit PA requests even if payers notify them that a PA is not required for the requested service because they are concerned that the information is provided in error and will not be honored when they submit a claim for the service. TAAG members discussed making the ability to save and audit responses to PA requests a required feature of an automated solution and this is reflected in our recommendations. A unique identification number (***uuid***) associated with each request can be tied to the patients' EMR and will ensure payers and providers can trace PA communications and decisions without risking loss of reimbursement. Requests and associated decisions can also be stored for audit purposes.

Lessons Learned from Pilot Efforts

Piloting automation activities are top-of-mind for many of the organizations involved in the current project.[W] Vendors and payers are more actively involved in piloting and prototyping efforts than provider systems and each stakeholder is attracted to different components of the automated PA process. Those not involved in any pilots explicitly shared their willingness to design and participate in future pilots within the next year (2023). Of those organizations involved in current automation activities, all are willing to share findings with TAAG, though pilot measurements to track progress were not made available at the time this report was written.

We describe lessons learned from the reported activities:

Decisions to pilot are opportunistic.

Commercial payers are focused on piloting services that allow for rapid notice of authorization or denial; they found that this is possible for services with either relatively straightforward medical necessity criteria or those that match InterQual criteria, as such criteria is easier to codify. Orthopedic services were a common use case across three piloting efforts. Successfully piloting "straightforward" services, such as orthopedics, seems to have encouraged payers to participate in additional (though unrelated) pilots and to begin to address more complex services/treatments.

Those involved in automation activities are also choosing solutions that address a current need or solve a specific problem. Vendors appear more focused on the latter phases of automation (i.e., DTR and PAS); their solutions pre-populate payer questionnaires and send information from providers directly to the payer. Payers, as mentioned above, are drawn to solutions that automate medical necessity criteria for high-volume service areas (i.e., DTR). Providers, meanwhile, wish to know the most basic information–whether PA is necessary and what the payer's requirements are to obtain approval (i.e., CRD and DTR).

W Four commercial payers described piloting efforts. Two are recent and ongoing, one is complete, and one occurred several years ago and was abandoned, although it produced important considerations for automation efforts going forward. Three provider systems shared current or upcoming piloting efforts, while two reported no piloting activities. Finally, four vendors shared current and planned piloting activities while two vendors did not share specific information related to automation pilots.

Stakeholders were using some measures to determine pilot success, but they seemed applicable to the individual pilot and pilot participants' goals. There was little indication that they were sharing metrics with other organizations. It was also unclear how stakeholders will build on existing or completed pilots. Many found success in one phase of the automation process and expressed interest in applying this success in other service areas, rather than tackling the remaining phases of automation. Perhaps the effect on burden reduction in a segment of the process is encouragement enough for organizations to do so elsewhere. Nevertheless, these reported activities provided encouraging and necessary experience in building and implementing an automated PA workflow, as well as an appreciation for the careful work involved.

Providers are willing to automate so long as the process does not negatively affect their workflow.

Provider systems are interested in participating in pilots, and automation in general, if they remain in control of their preferred workflow. Providers were amenable to a pilot in which imaging medical necessity guidelines were previously agreed to by the payer and provider and one in which the EMR automatically pulled patient data to pre-populate payer questionnaires.

The ability to remain in the EMR and automate PA is motivating to providers, though there was some concern regarding EMR readiness for automation and ability to become Da Vinci-compliant. Providers were adamant that their only path forward to automation is through a solution that can be "turned on" within the EMR, provided training on how to navigate any new workflow requirements is also supplied. Our recommendations address the need for education and reflect larger EMR-related concerns as voiced by providers.

There are Gaps in Payer and Provider Technical Capabilities that Technology Service Providers Can and Must Fill

As noted, technical capabilities vary within and among stakeholder groups. Both payers and providers share the challenge of structuring data and information in a form that allows the exchange of relevant, discrete, and machine-readable information. Additionally, they must adopt (i.e., build, buy, or upgrade to) FHIR-compatible architectures to support the exchange of relevant information.

Providers will strictly rely on their EMR vendors to align clinical information with the necessary FHIR resources to support the exchange of relevant data for payer evaluation and response. Most vendors providing the necessary components to support the Da Vinci standard features and workflows are in various stages of .development, and a few vendors were fully Da Vinci-compliant at the time this report was written.

Though EMR and automation vendors appear well on their way to becoming Da Vinci-compliant, we still highlight the need for interim solutions in our recommendations to accommodate gaps in full readiness. We expect ONC to issue updated Health IT Certification Program requirements soon, as ONC has issued several RFIs relating to the certification requirements, specifically for the support of ePA.

Payers

Payers will bear the brunt of technological changes required by automation. Most payers use vendor products from organizations participating in TAAG but must still build or, more likely, buy FHIR-based technology, and develop FHIR skill sets. In addition, they must adapt their rules and medical necessity guidelines into an electronic format within a new 'Rules Engine' technology that is configured to respond to documentation requirements (DTR phase) inquiries and supporting structured questionnaires, templates, and SMART on FHIR Apps. Payers view both tasks as a "massive lift." There are likely hundreds, if not thousands of clinical scenarios that must be converted into structured rules with references to the clinical information required to evaluate a PA request. In this sense, purchasing vendor solutions and necessary technology seems to be the unanimous path forward among payers. Whether the return on investment, coupled with federal mandates, are sufficient to move payers forward is unclear (the Federal Rule does not apply to commercial payers). Our recommendations seek to supplement these incentives.

Providers

Providers explained that adopting automated solutions would require buy-in from their IT leadership, revenue cycle department, and clinical champions. Some form of "buy-in" will necessarily be achieved once federal regulations are finalized and incentives, such as funding and technical support, are available. Otherwise, larger provider systems are the only entities likely to move forward with automation in a significant way, in contrast with smaller provider systems that will likely require more assistance and guidance.

All providers noted that their automation technologies and workflow capabilities rely on EMR vendors' architecture. (Provider systems represented on TAAG reported use of EMRs also represented on TAAG.) Most agreed that it would not make sense to build an automated solution for PA outside their EMR; rather, they would look to EMR vendors to make solutions available through future capabilities. Interestingly, providers do not appear (except for a few standalone cases) to be considering gateway/portal vendor solutions more broadly—even those that can be integrated within the EMR. This may be due in part to the expensive EMR purchase and implementation process, as well as upkeep,[36] and an unwillingness to allocate additional funds for services providers believe should be included in their current EMR package.[X]

Vendors

Of the automation vendor organizations that participated in TAAG, a few are considered fully Da Vinci-compliant, meaning that their solutions follow the Da Vinci IGs. One vendor has not participated in pilot work, though they were in pre-piloting conversations at the time they were interviewed. Other automation vendor organizations shared some insight into their platform solutions that connect providers and payers. Some vendors act as a "gateway" (i.e., offer a provider portal solution) and can be integrated with medical necessity guideline solutions, such as InterQual and MCG, although providers seem uninterested in options that remove them from their current workflow (i.e., the EMR). While all vendors on TAAG are eager to meet the needs of their clients, they recognize the need to move away from point solutions (e.g., portal-based solutions); they see the potential that standardized, end-to-end automation has to offer. It seems likely that broader automation mandates, such as the Proposed Rule, will accelerate the development of appropriate vendor solutions by creating a market for their products.

At the time of the interviews, the EMR vendors represented on TAAG were building and refining components of the Da Vinci workflow requirements. Due to their awareness of provider preference to use EMR solutions, they were taking a slow and thoughtful approach to their builds[Y] For example, EMR vendors noted that feedback they received from provider workgroups indicated that CDS Hooks cards are considered

X Providers have increasingly become reliant on a single vendor/solution approach whereas in previous business cycles a 'best of breed' approach was often used.

Y Speed did not seem to be a priority; rather, getting the product "right" while still supporting other ePA transactions seemed to be the goal.

"invasive;" some providers would clearly prefer a "nudge." Vendors' ability to address provider preferences and concerns, while remaining aligned with the Da Vinci IGs, will likely determine their uptake and market position and, therefore, the speed at which automation proceeds.

RECOMMENDATIONS

Based on the work outlined above, NEHI and MHDC present the following conclusions and recommendations:

- Massachusetts can and should take a leadership role in promoting the automation of prior authorization (PA) by creating structures and incentives that coordinate payer, provider, and vendor activities.
- The Commonwealth should pursue automation now both to achieve compliance with new federal rules and to alleviate the burdens and costs of current PA processes.
- The Da Vinci Implementation Guides (IGs) should be used as the foundation for the work required to achieve automation.
- The Commonwealth should ensure continued efforts to improve PA processes in concert with the capabilities that automation provides.

Our recommendations are designed to advance the adoption of automated PA among Massachusetts payers and providers within the next two years (by 2026). We describe our recommendations in detail below.

Use state regulatory authority to mandate automation based on a technical roadmap

While there is much that can be accomplished without a state mandate, TAAG participants favored the adoption of a coherent requirement to proceed with automation. There are several reasons for this. First, automation cannot achieve its intended benefits without the participation of different sectors of the healthcare community. Providers and payers *must* both make changes in their workflows and systems to achieve expected benefits. Detailing what each sector must do to proceed with automation removes the friction that would inevitably occur among stakeholders, including vendors. In addition, a state mandate will improve the efficiency with which automation is adopted as payers, providers, and vendors travel down the same path and can take advantage of lessons learned. Finally, a state mandate will standardize the process so that providers and payers will have the same ground rules and expectations

when interacting with each other, despite variation in PA requirements among payers and variations in EMRs among providers.

From a political standpoint, a mandate in this area is unlikely to garner strong objections.[Z] Promulgation of the CMS Proposed Rule (hereafter *Proposed Rule*) strongly signals that the industry must move in this direction. A mandate consistent with the Proposed Rule as finalized simply organizes and promotes forward movement in a manner consistent with the Commonwealth's circumstances and goals. Moreover, both stakeholders and state agencies have highlighted the need to remove waste and burden from the system considering the Commonwealth's coverage and cost control objectives.

Our proposed mandate incorporates the major provisions of the Proposed Rule as finalized for non-pharmacy services to public and commercial plans operating in the Commonwealth. This will clarify that all payers[AA] should comply with the automation requirements, as well as the time frames for decisions and appeals, and attendant reporting mandates (e.g., reason for authorization denials), as set forth in the Proposed Rule. Furthermore, payers and providers should continue to apply HIPAA rules, pending further federal developments. (This relates to the use of HIPAA-mandated X12 278 and 275 transactions.)[AB] In addition, through its authority to regulate hospitals and oversee physicians' practice of medicine, we likewise recommend that the state mandate adoption of those activities that will enable automation of PA requests.

We also recommend, however, that the state's mandate be based on a technical roadmap that incorporates the Da Vinci IGs. The roadmap will supplement the provisions of the Proposed Rule. Automation implementation is an iterative process—a

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Z Providers (especially physicians) continue to express concern that automation will crowd out other PA reforms. We have included recommendations that clarify that automation is a first—but a necessary step—in advancing additional reforms, especially in terms of providing more widespread support for these. While a few clinicians argue that PA is unnecessary, this remains a minority view. Eliminating PA is not a politically or economically feasible option; indeed, health systems engaged in value-based contracts have signaled the continued need for PA.[6]

AA We acknowledge that the state generally cannot regulate self-insured/self-funded employers,[37] but the extension of the Proposed Rule to commercial and public payers, particularly MassHealth, will make it far more likely that payers will adopt a single process for PA.

AB As described above in our Methods section, these electronic transactions must be converted from/to FHIR bundles when PA requests and decisions are shared between provider and payer parties.

statement with which all stakeholders agree. As such, the technical roadmap will indicate when and how the modified Da Vinci IGs (CRD, DTR, and PAS) should be implemented. As explained further below in discussing the roadmap's technical specifications, we also propose certain modifications in the Da Vinci IGs to address issues raised by TAAG participants.
[37]

When we discussed oversight of the mandate with TAAG, we recommended that the Health Policy Commission (HPC), which is charged with "monitoring health care spending growth in Massachusetts and providing data-driven policy recommendations regarding health care delivery and payment system reform,"[38] could be an appropriate Agency within which to locate this responsibility. The Division of Insurance (DOI) or the Executive Office of Health and Human Services (EOHHS) might also be considered. Legislation will be needed to address some of the responsibilities envisioned. The state will, for example, need to obtain data from both providers and payers. In addition to monitoring progress in implementing the technical stages of automation, we recommend that the responsible Agency develop measures that connect to three goals as part of the automation mandate: 1) improving trust in the process by increasing the transparency of PA functions; 2) providing information that enables an evidence base for continuing PA reforms; and 3) measuring administrative savings achieved. Data reported should be made transparent to payers, providers, and consumers in an accessible manner.

Automation will yield standardized data elements that are useful for all stakeholders involved in the process. At a minimum, devising mandated reporting on simple metrics such as services subject to PA, PA response times, and payer rates of denials will be critical to showcase process transparency. Measures that clarify the frequency with which providers request different services subject to PA and automation adoption rates will also be important.

In addition to the above, automation will also yield data that enable a far more expeditious analysis of different PA outcomes, such as the ability to refine an understanding of why denials occur (e.g., lack of coverage, lack of documentation, failure to meet medical necessity guidelines), thereby improving feedback for both providers and payers. In this sense, mandated reporting can and should highlight opportunities to reduce unnecessary variation in the PA process. For example, reporting on individual payer products subject to PA will illuminate differences in requirements

across payers. Reporting may also highlight high approval rates for certain services compared with others, leading payers and providers to examine other ways to avoid over-utilization.

Although we did not explicitly address ways to reduce variability in PA requirements in our discussions with TAAG, we note that a state mandate can incorporate this directive, especially in promoting centralized functions that reduce the infrastructure that payers and providers must individually establish. We explain this further in the section below on structuring a technical assistance center.

Finally, although there are national estimates of the savings that could be generated by automation, the state should monitor the reduction in administrative costs generated by PA automation for both payers and providers. For example, it will be important to measure whether automation results in fewer requests for authorization from providers to payers, which will reduce the number of transactions processed. Calculating the average cost per transaction will yield an estimate of savings. Likewise, it will be critical to measure cost reductions connected to the automation of providers' documentation responses and, concomitantly, payers' ability to approve or deny a request based on the information provided. The reduction in time spent on these activities should allow both providers and payers to estimate decreases in labor costs, regardless of whether personnel involved in the process are shifted to other tasks. Developing measures that examine changes in the major activities now involved in PA will provide a more granular picture of the impact that PA has on Massachusetts payers and providers.

Overall, it is worth noting that automation can generate this data quickly and efficiently; reports will be much easier to produce through automation, as such information is stored and can be obtained electronically. This removes the need for manual tabulation to meet reporting requirements, which could encompass tracking down faxes and notes/records from phone calls.

Even so, the challenge to minimize added burden through reporting requirements is real. As explained above, automation will enable easier collection and production of relevant data. We also recommend, however, that stakeholders themselves identify meaningful measures for consideration by the responsible state agency. For this reason, as explained below, we make this a focus of the Task Force we recommend

establishing. We also observe that state reporting requirements must consider related federal reporting mandates and optimize the use of these.

Based on TAAG feedback, modifications of Da Vinci IGs should be part of the roadmap

Although the Federal Rule contains detailed requirements, we recommend that the Commonwealth adopt more specific guidance in achieving these. By incorporating compliance with the Da Vinci IGs in its roadmap, the Commonwealth will facilitate coordination and efficiency among diverse stakeholders. The IGs have been tested by multiple stakeholders across the healthcare industry, and thus reflect a feasible approach, striking a balance between flexibility and standardization. As noted above, the Proposed Rule requires affected payers to build a FHIR Prior Authorization Requirements, Documentation, and Decision (PARDD) API. While the Rule does not specify adherence to the Da Vinci IGs, they are the functional equivalents of PARDD.[AC]

We have, however, specified seven modifications that will address issues that arose during our project; both payers and providers concurred that they were worth resolving. Our proposed modifications of the IGs will do so and will not conflict with the Proposed Rule (and can be adjusted if necessary to comply with the Final Rule). The modifications we recommend are focused on the CRD and DTR phases of the Da Vinci workflow. (The modifications correspond with Slides 13 and 14 in Supplement 3.)

1. The first modification is designed to enhance the flexibility of the CRD workflow. In brief, the CRD IG includes the automatic launch of the CDS Hooks service to activate the payer's service to determine coverage and PA requirement information specific to the member and service requested.

   While we agree with the Guides' use of the CDS Hooks standard for CRD, we recommend that providers have the ability to launch the CDS Hooks service from any point in the EMR workflow (i.e., not only when an order or treatment is initiated). We recommend that this process allow for modifications according to the provider's preference. For example, a provider may choose to launch CRD via an integrated button or app within the scheduling application to obtain information about the

AC CMS' reluctance to require compliance with them in the Proposed Rule does not indicate disagreement with their substance. There is no indication that requiring compliance with the IGs will create conflict with the Proposed Rule.

payer's PA requirements while considering a patient's potential course of treatment. Likewise, a provider may choose to run CRD as a 'background' process, through which the information and options specific to the member and service requested are placed in a work queue for provider staff to manage. Launching an inquiry via CDS Hooks triggers should also be supported but optional.

2. Our second modification inserts the use of a unique identifier (*uuid*) in CDS cards, which the IGs make an optional field for CDS cards. Our modification will mean that each PA Bundle will have its own, searchable number and, thereby, facilitate audits of particular PA transactions. Provider stakeholders were particularly vocal about the need to be able to track requests, even after a decision is made by the payer, in the event of a claim dispute. In addition to the *uuid*, the request bundle should also maintain all information associated with the request, including information from the provider, such as (but not limited to) any CPT (or other) codes sent in the CDS Hooks service request and supporting documentation. Although not part of the automation roadmap requirements, we recommend clarifying, by regulation or otherwise, that payers must, absent fraudulent submissions, be required to honor PA responses for claims payment.
3. Third, we recommend modifying the IGs to eliminate the option of a 'no response' status from the payer to the provider. By eliminating the 'no response' status, the payer must indicate that there is no available PA rule for the requested service (if applicable). It should be noted that timeouts due to a technical issue may result in a 'no response' which should be treated as an error state. This recommendation, in combination with the use of a unique identifier (above), should serve to eliminate unnecessary PAs and save both provider and payer time submitting and processing such requests.
4. Our fourth modification strongly encourages use of the "prefetch templates" method during the CRD stage to gather necessary information from the EMR in support of the PA request. This method, as opposed to the prefetch token, is a more defined data approach where both payers and providers can identify which additional data are needed at the time of a PA request.[AD] Provider stakeholders voiced concern regarding payer access to EMRs; with "prefetch templates," payers may only retrieve

AD Prefetch tokens are defined by the provider's EMR system and allow payers to access information related to a specific context (e.g., patient, encounter, etc.). The payer is then able to "query" against the data with the provided context and pull relevant information from the EMR's FHIR resources. Prefetch templates, on the other hand, are predefined by payers and seek to pull only the necessary information needed to process the request at hand.

patient information defined by the prefetch template (i.e., needed to process the PA request). This method also serves to increase efficiency of the transaction process. We note, however, that prefetch tokens may be used when the use of prefetch templates is not possible or practical.

5. Like the CRD workflow, the DTR launch should be customized according to user-preference. By way of background, the DTR IG involves the provider's response to the CDS card options payers provide during CRD. If PA is required and the provider wishes to submit a request for the service at hand, they select the card with the link to launch a SMART on FHIR App through the EMR. The SMART on FHIR App automatically retrieves the associated questionnaire from the payer's system and, using clinical query language (CQL), begins collecting data from the EMR that is needed to complete the questionnaire. Missing data must be manually inserted by the provider. In order to allow provider's staff, rather than the treating physician, to supply the necessary information, we recommend that providers have flexibility in launching DTR from a work queue in a delegated task mode rather than automatically after CRD.
6. Our sixth recommended modification requires structured questionnaires to have CQL logic embedded. CQL is not required according to the IGs, however, it is normally specified and referenced when discussing DTR. CQL will provide for a more discrete (i.e., distinct) data capture ability that is more easily performed automatically and is useful in instances when more complex PA requests require structured data capture (i.e., some PA requests can be authorized in the CRD step, while others will require additional information which is obtained in the DTR step). This modification also ensures that payers are not simply recreating current forms and questionnaires that often differ by payer and would ultimately require mostly manual completion by the provider. In sum, the use of structured questionnaires and structured CQL logic allows for a more robust and efficient ability to collect data automatically from the EMR. This will require work to build and structure, but should ultimately reduce burden, if applied consistently and correctly.
7. Our final modification recommends that payers be required to pre-populate information on the initial questionnaire response, if able. The IGs do not require pre-population, though we believe this should be both a CRD and DTR requirement. It is possible that the payer may already have data needed for the PA process in their system (e.g., through claims history, etc.). Payers should also collect information in the CRD step (using "prefetch templates"). Rather than requiring information

that is already available and collected to be reentered, payers should use this data to pre-populate the initial questionnaire response or SMART on FHIR App where applicable.

Structure centralized technical assistance

NEHI and MHDC recommend that the state establish a statewide Technical Assistance Center (MassTAC) to assist in the coordination of implementation efforts by Massachusetts stakeholders. Because the automation roadmap will undoubtedly still require interpretation and clarification in individual circumstances, the MassTAC would be responsible for resolving technical issues as well as providing access to lessons learned from individual experiences.[AE] This would facilitate implementation while minimizing unwarranted variation. Further, MassTAC will develop the knowledge base required to match stakeholders with vendors for complex or sustained assistance by clarifying specifications for an engagement and identifying potential vendors with which a stakeholder might contract. MassTAC would also ensure that technology and timing are consistent with the Proposed Rule once finalized. Finally, MassTAC would offer education and training through webinars and courses targeted to different phases of the implementation process.

We envision establishing MassTAC as a public-private partnership. Public participation provides support and oversight. It is important that stakeholders view MassTAC as a neutral, trusted resource. Private participation provides technical and operational expertise. Here we make a self-interested observation: MHDC has experience in assisting Massachusetts stakeholders in adopting and adapting to new technologies and standards (e.g., EMR implementation efforts and ICD-10 Collaborative Testing Program).[39] The partnership with MHDC or a similar organization could allow MassTAC to develop interim services that bridged the gap between stakeholders' technical capabilities and required processes, in addition to fulfilling MassTAC's scope of work above.

For example, the New England Healthcare Exchange Network (NEHEN), MHDC's information exchange, could implement clinical and administrative data exchange services that would be shared by payers (public and commercial) and providers.

AE Funding will be required to staff MassTAC, but it will be a relatively minor amount. We would discourage charging stakeholders a fee for using MassTAC; organizations of different sizes and capabilities *will* require outside assistance.

This use of "infrastructure as a service" minimizes repeated and costly capital and maintenance expenses for these stakeholders. As members in the exchange, they would share the costs to operate the exchange, participate in its governance, set implementation priorities, and collectively produce and disseminate reports required for business oversight and regulatory compliance.

For PA automation, specifically, NEHEN would provide the CRD and DTR functions for participating payers and providers. This use of shared infrastructure could also serve as a forcing function in aligning payers' medical necessity criteria, likely beginning with those services for which there is already little material variation or variation among only a minority of payers and proceeding to others for which standards have been developed and are widely accepted. The benefit accrues to providers and payers, especially if the data demonstrates that current variation in PA requirements for certain services yields minimal benefits.

In addition to the MassTAC, we also recommend that the agency responsible for overseeing automation implementation also work with CMS and ONC to accelerate the release of the updated Health IT Certification Program requirements that support automation. As mentioned in our Introduction section, ONC has not yet shared information pertaining to their release of revised Certification Program requirements that would foster FHIR-based PA automation, initiated from the provider's EMR.

Create a multi-stakeholder task force for ongoing coordination and guidance

NEHI and MHDC found that TAAG, even as a voluntary multi-stakeholder entity, enabled respectful and productive exchanges that enriched the recommendations made here. We recommend establishing a similar body that can function during the implementation process to enhance trust and accountability in the adoption of automation, especially because both were repeated themes in discussions with TAAG. A Task Force can be formally authorized by legislation or executive order, or informally constructed by associations in Massachusetts that represent key stakeholders (such as the Mass Collaborative and Health Care For All). We favor a more formal constitution if only to ensure that entities make appropriate commitments to participate in the Task Force and produce key deliverables that advance both automation and further reforms of the PA process. Our conception of the Task Force includes a body of approximately

15 members, which is large enough to represent diverse interests while operating to produce concrete results. Regardless of whether the Task Force is formally organized, we recommend that the Mass Collaborative have a strong voice in appointing at least six of its members, with at least three members representing consumer or patient advocacy organizations.

We recommend that the Task Force take on the following responsibilities:

Recommend measures to improve trust, transparency, and process improvement.

Within six months of the Task Force's first meeting, members should provide a slate of recommended measures on which payers and providers will report.[AF] The measures should enable stakeholders to (1) evaluate the implementation of automation on administrative costs, burden, and patient access to care; and (2) evaluate opportunities to reduce unnecessary variation in PA processes.

Propose reforms of prior authorization.

The Task Force should be required to make recommendations to the HPC or other responsible state agency for reducing administrative burden and the use of low-value care, including the use of gold-carding and similar PA reduction programs and the alignment of documentation required for approval of PA requests and other ways to reduce variation in PA processes.

Remain apprised of Technical Assistance Center (MassTAC) activities and ensure communication and transparency.

The Task Force should coordinate reform efforts (related to automation) with the MassTAC and stay apprised of MassTAC work and findings, such as further recommended modifications to the Da Vinci IGs, in alignment with the Proposed Rule as finalized. The Task Force can also play an important role in communicating automation issues and progress, and function as a conduit for broad stakeholder input.

AF We advise that recommendations be made to the Agency that oversees the automation process, whether the HPC, DOI, or another state government body. We would further recommend that the legislation authorizing oversight require such Agency to require reporting on these measures at least annually.

Provide need-based financial assistance to enable compliance

Even prior to engaging TAAG, it was understood that the differences in size and resource allocations across payer and provider organizations will serve as a major barrier to the ability to pursue automation. As such, NEHI and MHDC recommend providing need-based financial assistance to organizations to enable compliance with the Proposed Rule's technological, reporting, and timeline requirements. We acknowledge that although automation implementation will require significant investment on the front-end, its ROI is unmistakable if correctly implemented (i.e., if the implementation process is given careful consideration and planning, implemented in phases allowing for testing and improvements, and implemented in a collaborative manner across stakeholders). In Appendix F, we provide a high-level estimate of costs for payers. It seems likely that providers will need to work with their EMR vendors to reconfigure data elements. We have not been able to estimate these costs but assume that there will be economies of scale. Process changes and workforce training should be relatively minor in comparison to other information system upgrades.

Despite a clear ROI, organizations are faced with budget constraints and competing operational priorities; several payer organizations participating on TAAG serving the Medicaid population stated that COVID-19 remains a dominant focus for their organizations, leaving them unable to venture a guess as to when the focus could be shifted to automation. Of course, this was prior to the release of the Proposed Rule. Nevertheless, while mandates (federal and state) will serve to anchor the focus on automation implementation, we cannot ignore the reality that providers and payers will still require financial assistance to enable compliance.

In our judgment, based on feedback from the MassHealth TAAG participant, MassHealth will require financial assistance. As MassHealth is directly affected by the provisions in the Proposed Rule, it must be ready to automate by January 1, 2026, which will require direction and assistance. The latter will likely require funding. We recommend earmarking funds in the MassHealth budget to enable implementation of PA in accordance with the automation requirements as specified above. In addition to earmarking funds, we also recommend requiring MassHealth to pursue any federal funding available for implementation efforts. At present, it is unclear what funding is available to assist payers in complying with the Rule.

It seems likely that at least some commercial payers will also require financial assistance to implement technologies and workflow changes. Commercial payers on TAAG viewed purchasing FHIR-compliant technology, rather than building it themselves, as key to automation. We recommend considering need-based grants to move payers forward as a unit. If the state can structure a low interest loan program that offers forgiveness over time, this may also be worth consideration.[AG]

We also believe that providers may require financial assistance as they will need to work with their EMR vendors to reconfigure and align data elements with the automation requirements; ONC's certification requirements will be relevant here.[AH] Providers on TAAG unanimously agreed that it was unlikely for their organizations to build an automated solution outside their EMRs. In addition, they may be forced to rely on intermediary solutions, such as portals offered by other vendors pending EMR changes. Although Epic and Meditech, both TAAG participants, indicated that they are preparing for automation, we were not able to evaluate other vendor capabilities.

Finally, in a general sense, we recommend the state pursue federal funding opportunities for both payers and providers. Though unclear at present, we expect that opportunities will be included in the Final Rule, which was not published at the time of this report.

AG This should be defined by the state and based on stakeholder input.

AH It is unclear whether the automation integration would be offered as an update or if it must be purchased from the EMR vendor by the provider system.

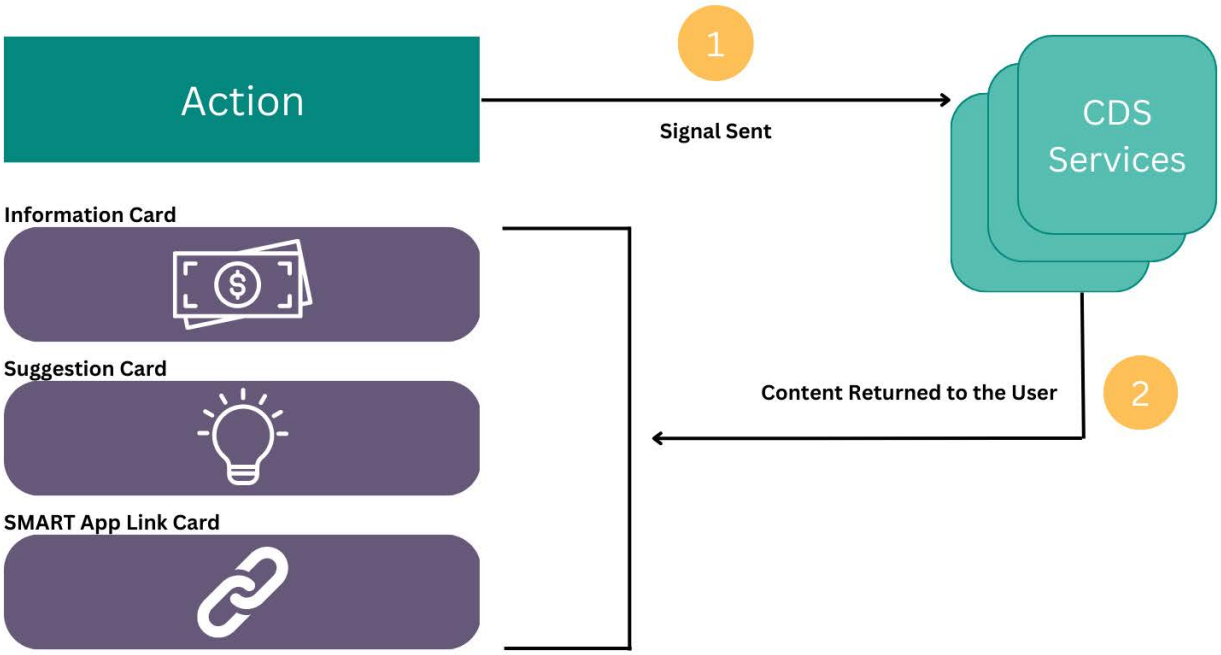
CONCLUSION

Now is the right time for Massachusetts to automate. Massachusetts is a unique environment in which to advance automation in a coordinated and efficient way. Although payers, providers, and vendors report being at different stages of readiness, they are supportive of automation and the recommendations that will push stakeholders forward in concert with one another.

The recommendations here—clear mandates, technical supports, and ongoing multi-stakeholder engagement—should enable this. We have addressed different stakeholders' needs, provided for ongoing oversight of activities and their outcomes, and accounted for the need to support efforts and build trust and greater understanding of PA processes.

Automation is a key first step in reforming PA and removing burden from providers and payers alike. It will remove administrative waste that is adding to the cost of healthcare in an unproductive and unnecessary fashion. Other industries have managed complex technological and process changes. We can do this.

Appendix A. *CDS Cards Example*



Appendix B. *TAAG Organizations*

Organization

- Berkshire Health Systems
- Blue Cross Blue Shield of Massachusetts (BCBSMA)
- Boston Children's Primary Care Alliance
- Change Healthcare
- Centers for Medicare & Medicaid Services (CMS)
- Cohere Health
- Community Care Cooperative (C3)
- Counterpoint Solutions
- Epic
- Fallonn Health
- Health New England
- Hook
- Massachusetts Association of Health Plans (MAHP)
- Massachusetts Executive Office of Health and Human Services (EOHHS)
- Mass General Brigham (MGB)
- Massachusetts Health & Hospital Association (MHA)
- Massachusetts Health Policy Commission (HPC)
- Massachusetts Medical Society (MMS)
- MassHealth
- MEDITECH
- Mt Auburn Cambridge Independent Practice Association (MACIPA)
- New England Quality Care Alliance
- Office of the National Coordinator for Health Information Technology (ONC)
- Point32Health

- Point-of-Care-Partners (POCP) & HL7 Da Vinci
- Reliant Medical Group
- Self-affiliated (Subject Matter Expert)
- Steward Health Care
- WellSense/Boston Medical Center Health System
- ZeOmega

Appendix C. *Interviewed Organizations*

Organization

- Blue Cross Blue Shield of Massachusetts (BCBSMA)
- Boston Children's Primary Care Alliance
- Centers for Medicare & Medicaid Services (CMS)
- Change Healthcare
- Cohere Health
- Epic
- Fallon Health
- Health New England
- Hook
- Mass General Brigham (MGB)
- Massachusetts Executive Office of Health and Human Services (EOHHS)
- Massachusetts Health Data Consortium (MHDC) / New England Healthcare Exchange Network (NEHEN)
- MassHealth
- MEDITECH
- Mt. Auburn Cambridge Independent Practice Association (MACIPA)
- Office of the National Coordinator for Health Information Technology (ONC)
- Point32Health
- Reliant Medical Group
- Steward Health Care
- WellSense/Boston Medical Center Health System
- ZeOmega

Appendix D. *Interview Guides*

Payers Interview Guide

1. How do you think about the automation of prior authorization? Is it part of your strategic objectives? Where does it fall in your list of priorities and why?
2. Do you anticipate automating prior authorization in the 5 years? In the next 2 years? Other than a state or federal mandate, what would change your timeline?

    a. Do you have an estimate as to how costly implementation would be?

3. Do you anticipate seeking outside assistance in your implementation efforts? For what functions?
4. Who will have responsibility for automation implementation within your organization?
5. What are the resources you expect to require in implementing automation? What resources do you already have at your disposal?
6. **Showing you this process map**, what feature of the automation process would you find most valuable? At which phase could your organization begin? Do you have the capabilities and resources in place to start at a certain phase?
7. Which UM/UR system(s) are you using today for your health plan?
8. What is the return/benefit you are expecting if you invest in implementing automation (e.g., time savings)? Over what period of time do you expect to achieve this return?
9. *(If unanswered)* What are the biggest challenges/hurdles you foresee in implementing automation?
10. What questions do you have about automation or about this project?

Technical Questions

1. How ready is your health plan to establish/provide a CDS Hooks service that responds to prior authorization inquiries?
2. How ready is your health plan to establish/provide a query-able Rules Repository for (at least) an initial set of automated prior authorization requests? (Incl. procedure/

service code reference, documentation requirements, questionnaires, CDS card content [SMART on FHIR App, URL, alternatives, information])

3. What (initial) information would you need to respond to a (CDS Hooks) prior authorization inquiry? Location of the service to be provided? Procedure/service requested? Performing provider? Etc.
4. If you have a Rules Repository with questionnaires for specific service requests, do the questionnaires use Structured Data Capture Templates as defined in the FHIR standards? Do the questionnaires contain CQL (Clinical Query Language) logic for the retrieval of discrete data from EHRs?
5. Does your health plan accept inbound FHIR resources today? Does it plan to accept inbound FHIR resources in the future? If so, what does the timeline look like?
6. Does your health plan support inbound X12 278 (Referral request) messages today? Does it plan to support inbound X12 278 (Referral request) messages in the future? If so, what does the timeline look like?
7. Does your health plan support inbound X12 275 (attachments) messages today? Does it plan to support inbound X12 275 (attachments) messages in the future? If so, what does the timeline look like?
8. Do you work with an intermediary? If so, who? Do they support the translation of a FHIR bundle to X12 messages and vice-versa?
9. Does your health plan support the X12 278 response request for additional information (RFAI)?
10. Does your health plan have the ability to auto-process an x12 278 (referral) request with associated clinical (attachment) responses in the form of a completed questionnaire?
11. Does your health plan have the ability to construct and send a FHIR bundle response to a prior authorization request or alternatively an X12 278 Referral status response with or without the RFAI?

Providers Interview Guide

1. How do you think about the automation of prior authorization? Is it part of your strategic objectives? Where does it fall in your list of priorities and why?
2. Beyond technical restraints, we'd be interested in understanding the degree to which uncertainty about future regulation is itself a barrier to implementation.
3. Do you anticipate automating prior authorization in the next 5 years? In the next 2 years? Other than a state or federal mandate, what would change your timeline?
4. Do you have an estimate as to how costly implementation would be?
5. Do you anticipate seeking outside assistance in your implementation efforts? For what functions?
6. Who will have responsibility for automation implementation within your organization/practice?
7. What are the resources you expect to require in implementing automation? What resources do you already have at your disposal?
8. **Showing you this process map**, what feature of the automation process would you find most valuable?
9. Which EHR system(s) do you use? Which additional EHR capabilities are needed in order to implement electronic prior authorization?
    a. During the CRD phase?
    b. During the DTR phase?
    c. During the PAS phase?
10. Within your organization/practice, who/how many people complete the prior authorization process (i.e., how many FTEs)? How much less work, in terms of person hours, would ePA enable?
11. What is the return/benefit you are expecting if you invest in implementing automation (e.g., time savings)? Over what period of time do you expect to achieve this return?
12. *(If unanswered)* What are the biggest challenges/hurdles you foresee in implementing automation?

13. What questions do you have about automation or about this project?
14. Are we at liberty to list [Organization Name] as a participant in this project? Individual names and quotes will not be shared.

Technical Questions

1. Does your EHR support the ability to store/retrieve a partially completed prior authorization request and complete/submit it separately from the provider ordering workflow?
2. Do you believe that 'Order Sign' and 'Order Select' are the right triggers for electronic prior authorization requests? Is this the right timing in the clinical workflow?
3. Does your EHR support have a comprehensive FHIR repository or resources available? If so, does your EHR support the use of CQL (Clinical Query Language) to retrieve data from the FHIR repository?
4. Is your EHR enabled to create a FHIR Bundle as defined in the Da Vinci implementation guide standard for submission of the prior authorization request bundle?
5. Is your EHR able to submit an X12 278 (referral) request and an X12 275 (attachment) transaction with re-association codes (if sent separately)?
6. Does your EHR support the X12 278 response request for additional information?

Regulators (Federal & State) Interview Guide

1. What do you consider to be the strengths and weaknesses of the Da Vinci ePA implementation guides? What steps do you think regulators need to take in advance of their adoption?
2. Would it be possible to require the use of open (e.g., Da Vinci) standards for the exchange of electronic prior authorization at a state level? If so, what supports are essential to making this possible (e.g., incentives, mandates, monitoring, other enforcement efforts)?

    Clarifying questions if needed or if interviewee does not address these points after answering question 2:

    - What role do you see federal regulators playing in the coordination and guidance of the overall adoption of electronic prior authorization?
    - State regulators?

3. Is there a governance role for federal regulators to play in regard to adherence to standards, adoption timelines and prior authorization proliferation, and use as a UM / UR mechanism? For state regulators?

    - What is the optimal timeline for the adoption of electronic prior authorization?
    - Is there a role for Congress or the state legislature?

4. Do you have any insight as to when CMS will release the final rule "Interoperability and Prior Authorization" (formerly CMS-9123-P)?
5. Do you have any insight as to the timing of (or likelihood of) an ONC certification for EHRs for electronic prior authorization?

    - HITAC released its 13 recommendations to improve the ONC Certification Program. What are your thoughts on the recommendations? Do you agree with the bulk of the recommendations?
    - Do you agree with their statement that the Da Vinci IGs need to further mature?
    - ***(If interviewing CMS or ONC)*** HITAC calls for coordination between CMS

and ONC. Are you able to share if you know of any coordination efforts?

6. Is there current federal support available for payers and providers who wish to adopt electronic prior authorization but need help? State support?
7. Which regulatory levers can we employ to advance the adoption of electronic prior authorization in the Commonwealth?
8. In your efforts to advance burden reduction initiatives, what is the largest challenge you face as a regulator?

Vendors Interview Guide

1. Do you support the use of the Da Vinci implementation guides for electronic prior authorization? If not, how do you expect to compete with standards-based prior authorization solutions? How do you scale?
2. Does your product(s) support the open (API-based) standards and workflows for the exchange of electronic prior authorization information as defined in the Da Vinci implementation guides for electronic prior authorization? If not, which methods do your products support for electronic prior authorization automation? Do they prevent your customers from managing multiple connections with trading partners (i.e., payers, providers, and intermediaries)?
3. Does your product(s) support workflows as described in the Da Vinci implementation guide for electronic prior authorization? If not, which alternatives do you support/suggest and how do you reconcile this with CMS requirements?
4. Does your product(s) support the use of Structured Data Capture Templates and/or CQL (Clinical Query Language) logic to assist with the retrieval of data from the EHRs?
5. Beyond technical restraints, we'd be interested in understanding the degree to which uncertainty about future regulation is itself a barrier to implementation.
6. Are you supportive of additional pilot/prototype implementations to jump-start the adoption cycles and establish working examples of successful electronic prior authorization use?
7. What do you hope to get out of this project?
8. Are we at liberty to list [Organization Name] as a participant in this project? Individual names and quotes will not be shared.

Appendix E. *Focus Group Guides*

1. **Payers:** When we talk about prior authorization automation, we are referring to the ability to send, receive, and respond to a request with little or no human intervention. Which parts of the automation process do you think you can automate now? In the next six months?

    a. In providing your answer, are you planning to build capabilities, or do you think you will be able to buy them from technology service providers? How are you thinking about the "build or buy" decision?

2. **Payers:** We have been discussing providers' threshold requirements for automation: is there a way for payers to let them know whether a service they order requires prior authorization? What information, e.g., site of service, do you need beyond *Member ID* and *service* to determine if prior authorization is required?

    a. For bariatric surgery

    b. For PT/OT

3. **Providers:** Based on Payers' response- are you or your organization currently able to provide these data elements and/or details? If not, what would you need to make this possible (e.g., build vs. buy)?

4. **Providers:** How would you rank the importance of knowing whether PA is required on a scale of 1-10, with 1 being most important and 10 being least important?

    a. What are your top two goals for automation in terms of burden and cost reduction?

        i. How will you measure whether automation has made a difference in the burden or cost of prior authorization processes?

    b. If you anticipate a reduction in labor needs, do you anticipate reallocating personnel and, if so, to what areas of your operations? Can you make a case for automation improving overall efficiency?

5. **Payers:** Which data elements (or categories of information) would you need from the providers to provide [the additional information providers are requesting]? to decide on whether to authorize a request for the CPT codes in the bariatric surgery

family? (Please respond using the 80/20 rule—i.e., information that would permit a determination in ~80% of bariatric surgery requests).

a. For PT/OT?

6. **Providers:** Based on Payers' response- is it possible to extract these data elements from your electronic health record now? If not, what would you need to make this possible in terms of both process and technology changes? Would you anticipate buying these capabilities or building them?
7. **Providers:** Where in the workflow do you want to receive payers' responses? Do you need the ability to "save" payers' responses? Do you need a feature that allows interchange with payers about their responses?
8. *[I think our conversation will begin to encompass DTR (or DRLS), but we should begin steering the conversation that way]*

    a. Are there standard questionnaires (or decision-branching logic) for bariatric surgery and PT/OT? If not, how would you begin to think about building those?

    b. If standard questionnaires (for any service subject to prior authorization) are submitted electronically now, where are they stored? Where would you like them to be stored? Is this possible now? What do you need to do this?

    c. *[consider broaching CQL again]*

    d. **Providers:** When a SMART questionnaire is automatically filled, who do you want to check it (if anyone)? If all the necessary information needed could not be gathered, what sort of indicator do you want (e.g., pop-up message, pop-up message sent to PA staff, etc.?)

Appendix F. *PA Automation Implementation Costs for Payers (Estimated)*

The automation of PA involves infrastructure additions, legacy systems connections, as well as workflow and process changes. Labor and technology comprise the main components of these costs. Because automation will involve common elements for all payers, especially in alignment with the Da Vinci IGs, many of the costs, especially those in the category of infrastructure, can be shared by centralizing the automation functions.

MHDC (and NEHEN) already provide a similar benefit to their members, which include most payers in Massachusetts. Through a subscription model, NEHEN offers claims, eligibility, referrals, claim statuses, and remittances at a rate lower than that of a traditional clearinghouse. It does so by purchasing capabilities from third party vendors at what is essentially a bulk rate. It then coordinates and manages these services. Moreover, NEHEN is a payer and provider collaborative; vendor specifications and solutions are governed by its members. If a member develops a solution that might benefit the group, that solution is often shared in a collaborative manner with other members. Finally, as a collaborative, NEHEN allocates costs based on the member's size, which generally corresponds with higher service use.

NEHEN estimates that it can stand up the initial stage of automation, Coverage Requirements Discovery (CRD), at relatively low "per member" cost. CRD is a gateway function. It informs providers about whether PA is required by a payer for a particular patient. Based on performing similar functions, NEHEN anticipates that it will charge members for access to a centralized CRD service between $20K to $400K annually. Two vendors, Olive and MCG, which have automated CRD, estimate that automating CRD has saved approximately 50% of PA costs by avoiding unnecessary requests and attendant processes. This should neutralize the cost entirely. It is difficult to estimate payers' additional integration and process redesign costs, but these are primarily one-time costs.

The other phases of automation will require significant changes in process and workflow, but the labor savings from implementation of CRD may mitigate the need for additional personnel. The main task for payers will be to translate their PA policies into machine-readable (electronic) questionnaires. From these, payers can automate or partially automate the collection of necessary information from providers' EMRs corresponding to the payers' criteria for approval. In more straightforward clinical scenarios,

it should be possible to automate the collection of needed information fully, and, therefore, payers would be able to respond with an approval or denial without any further provider exchanges. We note that the process of converting policies to electronic formats may encourage payers to reduce their PA requirements as they weigh the workload involved in the conversion process.

Additional technical work to implement the DTR (Documentation Templates & Rules) phase of automation involves making the rules machine readable for each service that requires PA. This is the foundation for payers' ability to retrieve discrete data from providers' EMR systems, ideally using a standard format called Clinical Query Language (CQL). We estimate individual payers will incur between $500K and $2M to adopt these changes, depending on how many services require PA, the complexity of the current rules for each, and the staffing and resources available to assist in the process. This is a one-time cost. MHDC/NEHEN is looking into technical services that may be available to assist with the codification of human-readable (paper) based rules into structured clinical rules using AI methods. Although human review would still be required, this would reduce labor costs.

Technical infrastructure will also be required to enable the automated identification of the appropriate payer rules matching a provider's PA request. This will take the form of a DTR rules engine, which is a FHIR-enabled service that responds to specific PA service inquiries by locating the applicable structured questionnaire (as developed in the above step). A SMART on FHIR App is then able to reference the provider's EMR's FHIR resources to pre-populate the questionnaire responses. We have estimated what MHDC/NEHEN will charge for a centralized service that offers the infrastructure and technology for a DTR rules engine in a subscription model. Payers will be able to obtain this service from MHDC/NEHEN for between $10K to $200K annually. These costs do not include the integration that payers may be required to perform with existing infrastructure. Accordingly, total annual infrastructure costs for full automation of the PA process will likely be in the range of $30K to $600K.

Additional Implementation Costs

These costs do not include work required to map the automation process and develop a detailed project plan. For payers (as well as providers) to avoid replicating these costs, we strongly recommend establishing a Technical Assistance Center (MassTAC), which MHDC/NEHEN would lead. MassTAC will establish the automation roadmap and

provide technical assistance to individual payers and providers in project planning. It will also identify vendors able to provide customized assistance to payers that require individualized solutions and assist in the preparation of Requests for Proposals. While MassTAC will closely coordinate with NEHEN's service functions, which will be funded through membership subscriptions, MassTAC can ensure a standardized implementation process, which will improve efficiency and accountability. We estimated the cost of this work to be approximately $120K, which is far lower than what we suspect it will cost individual payers to perform the same work. We note that the MassTAC's work may obviate the need for incentive grants to payers and providers.

Endnotes

1 Change Healthcare. Our Mission. Change Healthcare. Published 2023. Accessed February 26, 2023. https://www.changehealthcare.com/about

2 Cohere Health. Intelligent Prior Authorization. Cohere Health. Published 2023. Accessed February 27, 2023. https://coherehealth.com/our-solutions/

3 Hook. About. Published 2023. Accessed February 27, 2023. https://hook.md/about

4 ZeOmega. About Us. Published 2023. Accessed February 27, 2023. https://www.zeomega.com/company/about

5 Pestaina K, Pollitz K. Examining Prior Authorization in Health Insurance. KFF. Published 2022. Accessed October 23, 2022. https://www.kff.org/policy-watch/examining-prior-authorization-in-health-insurance/

6 Warring W, Bedel LEM. Streamlining Prior Authorization: Final Report & Recommendations.; 2021:59. Accessed May 19, 2022. https://www.nehi-us.org/writable/publication_files/file/11.18_pa_white_paper.pdf

7 Lucy, Adams AS, Ross-Degnan D, et al. Association Between Prior Authorization for Medications and Health Service Use by Medicaid Patients with Bipolar Disorder. Psychiatric Services. 2011;62:186-193.

8 Ferries E, Racsa P, Bizzell B, Rhodes C, Suehs B. Removal of Prior Authorization for Medication-assisted Treatment: Impact on Opioid Use and Policy Implications in a Medicare Advantage Population. JMCP. 2021;27(5):596-606. doi:10.18553/jmcp.2021.27.5.596

9 Wallace ZS, Harkness T, Fu X, Stone JH, Choi HK, Walensky RP. Treatment Delays Associated with Prior Authorization for Infusible Medications: A Cohort Study. Arthritis Care & Research. 2020;72(11):1543-1549. doi:10.1002/acr.24062

10 Epling JW, Mader EM, Morley CP. Practice Characteristics and Prior Authorization Costs: Secondary Analysis of Data Collected by SALT-Net in 9 Central New York Primary Care Practices. BMC Health Services Research. 2014;14(1):109. doi:10.1186/1472-6963-14-109

11 American Medical Association. 2021 AMA Prior Authorization (PA) Physician Survey.; 2022:2. Accessed October 23, 2022. https://www.ama-assn.org/system/files/prior-authorization-survey.pdf

12 CAQH Explorations. 2022 CAQH Index: A Decade of Progress. CAQH. Published 2023. Accessed March 30, 2023. https://www.caqh.org/sites/default/files/2022-caqh-index-report%20FINAL%20SPREAD%20VERSION.pdf

13 Dreher A. States jump into fight over prior authorization requirements. Axios. Published 2023. Accessed March 14, 2023. https://www.axios.com/2023/01/27/states-target-doctor-authorization

14 CAQH Explorations. 2021 CAQH Index: Working Together: Advances in Automation During Unprecedented Times.; 2021. Accessed October 23, 2022. https://www.caqh.org/sites/default/files/explorations/index/2021-caqh-index.pdf

15 CAQH. Prior Authorization & Referrals Operating Rules. Published 2021. Accessed August 9, 2021. https://www.caqh.org/core/prior-authorization-referrals-operating-rules

16 Bonamici S. 21st Century Cures Act.; 2016. Accessed March 15, 2023. https://www.congress.gov/bill/114th-congress/house-bill/34

17 Lengyel-Gomez B. 21st Century Cures Act—A Summary. HIMSS. Published 2018. Accessed March 15, 2023.

https://www.himss.org/resources/21st-century-cures-act-summary

18 HealthIT. Information Blocking. HealthIT.gov. Published 2022. Accessed March 15, 2023. https://www.healthit.gov/topic/information-blocking

19 HealthIT. Request for Information: Electronic Prior Authorization Standards, Implementation Specifications, and Certification Criteria. HealthIT.gov. Published 2022. Accessed June 14, 2022. https://www.healthit.gov/topic/laws-regulation-and-policy/request-information-electronic-prior-authorization-standards-implementation-specifications

20 HealthIT. Health Information Technology Advisory Committee (HITAC) | HealthIT.gov. HealthIT.gov. Published 2022. Accessed June 14, 2022. https://www.healthit.gov/hitac/committees/health-information-technology-advisory-committee-hitac

21 AHIP. AHIP Comments on ONC Proposed Rule on Health Data, Technology, and…. AHIP. Published 2023. Accessed April 18, 2023. https://www.ahip.org/news/press-releases/ahip-comments-on-onc-proposed-rule-on-health-data-technology-and-interoperability

22 CMS Proposes New Rules to Address Prior Authorization and Reduce Burden on Patients and Providers. Center for Medicare and Medicaid Services. Published December 10, 2020. Accessed April 20, 2021. https://www.cms.gov/newsroom/press-releases/cms-proposes-new-rules-address-prior-authorization-and-reduce-burden-patients-and-providers

23 King R. Biden Admin Appears to Withdraw Final Rule Aimed at Streamlining Prior Authorization. FierceHealthcare. Published 2021. Accessed August 22, 2021. https://www.fiercehealthcare.com/payer/biden-admin-appears-to-withdraw-final-rule-aimed-at-streamlining-prior-authorization

24 Centers for Medicare & Medicaid Services. Advancing Interoperability and Improving Prior Authorization Processes Proposed Rule CMS-0057-P: Fact Sheet. Centers for Medicare and Medicaid Services. Published 2022. Accessed December 8, 2022. https://www.cms.gov/newsroom/fact-sheets/advancing-interoperability-and-improving-prior-authorization-processes-proposed-rule-cms-0057-p-fact

25 Davenport T, Kalakota R. The potential for artificial intelligence in healthcare. Future Healthc J. 2019;6(2):94-98. doi:10.7861/futurehosp.6-2-94

26 Turner BEW. Epic, Microsoft bring GPT-4 to EHRs. Modern Healthcare. Published 2023. Accessed April 17, 2023. https://www.modernhealthcare.com/digital-health/himss-2023-epic-microsoft-bring-openais-gpt-4-ehrs

27 Al-Haque S, Khanna V, Mandal S, Rayasam M, Singh P. AI ushers in next-gen prior authorization in healthcare. McKinsey & Company. Published 2022. Accessed April 17, 2023. https://www.mckinsey.com/industries/healthcare/our-insights/ai-ushers-in-next-gen-prior-authorization-in-healthcare#/

28 Health Care Reform Conference Committee. S.2400 - 187th (2011-2012): An Act Improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation.; 2012. Accessed November 9, 2022. https://malegislature.gov/Bills/187/S2400

29 Commonwealth of Massachusetts. About the Health Policy Commission. Published 2022. Accessed November 9, 2022. https://www.mass.gov/about-the-health-policy-commission-hpc

30 Steinbrook R. Controlling Health Care Costs in Massachusetts With a Global Spending Target. JAMA. 2012;308(12):1215-1216. doi:10.1001/2012.jama.11322

31 HL7. Use Cases and Overview. HL7 FHIR. Published 2022. Accessed October 23, 2022. https://build.fhir.org/ig/HL7/davinci-pas/usecases.html

32 HL7. Da Vinci Members. Published 2022. Accessed November 7, 2022. https://www.hl7.org/about/davinci/members.cfm

33 HL7. CRD IG Home Page. HL7 FHIR. Published 2022. Accessed October 23, 2022. https://build.fhir.org/ig/HL7/davinci-crd/

34 HL7. Documentation Templates and Rules Implementation Guide Home Page. HL7 FHIR. Published 2022. Accessed October 23, 2022. https://build.fhir.org/ig/HL7/davinci-dtr/

35 HL7. Prior Authorization Implementation Guide Home Page. HL7 FHIR. Published 2022. Accessed October 23, 2022. https://build.fhir.org/ig/HL7/davinci-pas/

36 Dyrda L. 18 Hidden Costs in EHR Purchase and Implementation. Published 2016. Accessed September 27, 2021. https://www.beckershospitalreview.com/healthcare-information-technology/18-hidden-costs-in-ehr-purchase-and-implementation.html

37 Division of Insurance. Consumer Alert: Beware of the Risks in Self-Funded Health Plans. Accessed March 7, 2023. https://www.mass.gov/service-details/consumer-alert-beware-of-the-risks-in-self-funded-health-plans

38 Massachusetts Health Policy Commission. Massachusetts Health Policy Commission. Published 2023. Accessed March 7, 2023. https://www.mass.gov/orgs/massachusetts-health-policy-commission

39 Goroll AH, Simon SR, Tripathi M, Ascenzo C, Bates DW. Community-wide Implementation of Health Information Technology: The Massachusetts eHealth Collaborative Experience. J Am Med Inform Assoc. 2009;16(1):132-139. doi:10.1197/jamia.M2899