Annual Report
of the
Medication Reconciliation & Polypharmacy Committee

Submitted to: Health Information Technology Advisory Council

February 11, 2021

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Acknowledgements

On behalf of the State of Connecticut, the Office of Health Strategy expresses its sincerest gratitude to participants in the Medication Reconciliation and Polypharmacy Committee (MRPC). The safe and effective use of medications is essential for the health of the citizens of Connecticut. The insights and perspectives garnered from participants has resulted in meaningful, practical, and realistic recommendations that will lead to improvements in the health and wellbeing of the citizens of Connecticut.

Executive Summary

The Medication Reconciliation and Polypharmacy Committee (MRPC) was officially established as a standing committee of the Health Information Technology Advisory Council (HITAC) on September 19th, 2019. The MRPC was established to continue the work of the Medication Reconciliation Polypharmacy Working Group, established by Special Act 18-6, the major output of which was a report with eleven recommendations related to medication reconciliation and polypharmacy.[1]

During 2020, the MRPC organized and met to prioritize and advance the working group recommendations. The committee and its members were impacted by the COVID-19 pandemic – both personally and professionally in some cases. After a brief hiatus during the early part of the pandemic, the committee continued to meet in a fully remote format and redesigned its activities to meet social distancing requirements. This report summarizes the progress made and work planned for 2021.

Notable achievements through 2020 include:

- Establishing a public-private cross-functional membership to ensure representation of all voices in committee matters and to garner support for committee outputs and decisions. Membership includes two patient advocates;
- Advancing the work identified in the recommendations of the working group. The committee made progress with deprescribing, CancelRx, and medication reconciliation process improvement, and it also supported related professional education events.
- Developing a robust set of business[2] and functional requirements[3] for a best possible medication history (BPMH) for all residents of the State of CT. These requirements provide a strong framework in developing a technical solution towards a BPMH. Moving forward the MRPC will use actionable strategies to make sure these requirements are pursued and carried out. This work will be a focus of the MRPC throughout 2021.

The main body of this report presents a high-level summary of the committee's activity and progress through 2020. A summary of the committee activities is presented in Table 4.

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[1] https://portal.ct.gov/-/media/OHS/Health-IT-Advisory-Council/MRP/Final-Recoms-Med-Rec.pdf
[2] Business Requirements identify the goals of the Best Possible Medication History based on problems statements identified by committee members. Business requirements define the 'why' for the BPMH, including: How the BPMH relates to the objectives, vision, and goals of the MRPC, and the scope of the needs to be addressed. The business requirements are high-level and can be broadly defined.
[3] Functional Requirements identify the specifications and detailed functions desired of the Best Possible Medication History. Functional requirements define the 'what' for the BPMH including the specific behaviors of the BPMH, specific steps the MRPC and its support will take to achieve the business requirements. The functional requirements are specific and well defined.

Background

The Health IT Advisory Council was established per [Conn.Gen.Stat. § Sec. 17b 59f](#) to advise the Executive Director of the Office of Health Strategy and the Health Information Technology Officer (HITO) on coordination of health IT activities in Connecticut.[4] The Medication Reconciliation Polypharmacy Working Group was established by Special Act 18-6, the major output of which was a report with eleven recommendations related to medication reconciliation and polypharmacy. The Medication Reconciliation and Polypharmacy Committee (MRPC) was chartered as a standing committee of the Health IT Advisory Council to continue the work of the MRPW.

Medication Reconciliation and Polypharmacy

The MRP Working Group (MRPW) noted in its 2019 report to the Connecticut General Assembly that medications are a large and growing component of the prescriber's toolbox and are the first line treatment for 88% of chronic diseases.[5] Prior to the publication of that report, the percentage of patients taking multiple prescription medications increased from 2011-2016. According to data (2011-2014) from the Centers for Disease Control and Prevention (CDC), 40.7% of seniors (65 years or older) and 10.9% of the total population reported taking five (5) or more prescription medications within the past 30 days. For seniors, the 40.7% represents almost a three-fold increase from the period of 1988-1994 (13.8%). More recent data (2015-2016[6]) showed 22.4% of the population, aged 40-79, taking five or more prescription medications within the past 30 days. For patients with intellectual and developmental disabilities these numbers can be even higher; a study featured in the Journal of Intellectual Disability Research identified that 83.4% of the population sampled were prescribed medications, commonly at high doses. Of the population sampled 38.2% were exposed to polypharmacy, and 23% were exposed to psychotropic polypharmacy.[7]

Because a patient's medication regimen is the basis for many treatment decisions, it is extremely important that medication lists are accurate to maximize therapeutic impact and prevent potentially life-threatening patient safety events.

The Medication Reconciliation and Polypharmacy Committee (MRPC) was officially established on September 19th, 2019. As described in the MRPC Project Charter[8], the purpose of the MRPC is:

> *to provide strategic guidance, recommendations and ongoing support to the Health IT Advisory Council and the Office of Health Strategy (OHS) for the development and maintenance of a best possible medication history (BPMH), supported by communication, education, and user-friendly digital tools.*

To that end, the MRPC established five main goals to guide its work through September 2021. All activities will continue to be patient centered and focused on engaging all stakeholders in the continuum of care. For example, in taking steps towards accomplishing Goal 1 the MRPC will work towards developing patient facing and provider facing components. The MRPC plans to focus on refining and working towards these goals in 2021:

1. Develop an approach for the creation of a BPMH;
2. Create an online directory of relevant tools and solutions for communication to key stakeholders;
3. Support[9] development and implementation related to key medication reconciliation activities;[10]
4. Develop an implementation plan for the eleven recommendations from the working group;
5. Actively monitor and support funding opportunities related to the purpose and goals of the MRPC.

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[4] https://www.cga.ct.gov/current/pub/chap_319o.htm#sec_17b-59d
[5] Ekstrand, MJ. *Transforming "Med Wreck" into "Med Rec:" One Health System's Journey*. Webinar presentation: Pharmacy Quality Alliance; July 2017.
[6] https://www.cdc.gov/nchs/data/databriefs/db347-h.pdf
[7] https://onlinelibrary.wiley.com/doi/abs/10.1111/jir.12775
[8] See Appendix A of this report, or visit the OHS website
[9] The MRPC is to support: The Office of Health Strategy, Health Information Alliance, Inc., the Department of Social Services, and the Department of Consumer Protection
[10] Activities related to deprescribing and CancelRx are described in Appendix D.

These five goals are closely tied to the eleven recommendations from the working group in its previous report. The activities that have occurred since the establishment of the committee are summarized in **Error! Reference source not found.**. The remainder of this report will focus on the progress made on each of the five goals and eleven recommendations of the MRPW. A detailed list of the recommendations developed and submitted by the MRPW can be found in Appendix B.

Committee Membership and Goals

Membership of the MRPC broadly represents stakeholders involved in matters of medication reconciliation and polypharmacy. Per the charter for the group, experience and expertise is to involve, at a minimum a diverse group of healthcare professionals, consumer advocates, industry representatives, informaticians, and subject matter experts, as detailed in Table 1 below. The committee meeting schedule for the past year is presented in Table 2 below. A team of support staff provide ongoing strategic planning and functional support to the MRPC, and are identified in Table 3. All meeting materials including agendas, minutes, and recordings can be found on the OHS website[11].

Table 1: MRPC Members, Affiliations, and Membership Categories

Member Name	Membership Category
Sean Jeffery, Co-Chair	Expert in medication reconciliation
Nitu Kashyap, Co-Chair	Expert in medication reconciliation
Alejandro Gonzalez-Restrepo	Expert in psychopharmacology
Amy Justice	Expert in polypharmacy
Anne VanHaaren	Pharmacist
Diana Mager	Represents LTPAC/Hospice
Ece Tek	Prescribing practitioner
Elizabeth Taylor	Represents DMHAS
Jason Gott	Represents DSS
Jennifer Osowiecki	Represents expertise in law
Jeremy Campbell	Represents pharmaceuticals
Kate Sacro	Expert in medication reconciliation
Lesley Bennett	Represents consumers
Margherita Giuliano	Pharmacist
Marie Renauer	Represents hospitals
Mark Silvestri	Represents a FQHC
MJ McMullen	Represents expertise in CancelRx
Nate Rickles	Expert in polypharmacy
Patricia Carroll	Represents consumers
Rachel Petersen	Represents expertise in CancelRx
Rod Marriott	Represents DCP
Stacy Ward-Charlerie	Represents expertise in CancelRx
Valencia Bagby-Young	Represents DDS

Table 2: MRPC Planned 2020 Meetings

Planned 2020 Meeting Schedule of the MRPC	
January 13, 2020	July 20, 2020*
February 27, 2020	~~August 17, 2020~~
March 16, 2020 *	September 24, 2020 *
~~April 20, 2020~~	October 19, 2020 *
May 18, 2020 *	November 16, 2020 *
June 25, 2020 *	December 21, 2020 *

Table 3: MRPC Support Staff

OHS	UConn Health	CedarBridge Consulting
Adrian Texidor	Thomas Agresta	Terry Bequette
	Rachel Rusnak	Kassi Miller
	Ryan Tran	

Note: In light of Covid 19, in March 2020 the committee moved to virtual meetings. All virtually held meetings are marked with an (*). Additionally, two planned meetings were cancelled, those dates are identified with a strike through (-).

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[11] https://portal.ct.gov/OHS/HIT-Work-Groups/Medication-Reconciliation-and-Polypharmacy-Committee/MRPC-Meeting-Agenda

Figure 1 represents the evolution of the MRP Working Group into the standing MRPC, and continued progress on the identified recommendations.
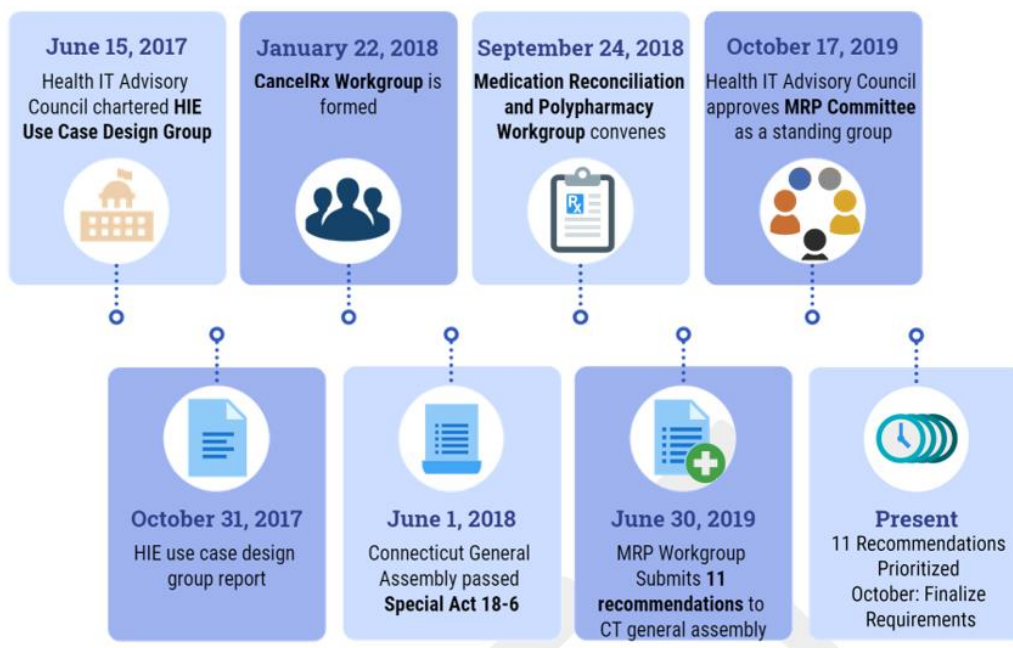

Figure 1: MRPC Evolution and Activities

Committee Progress

The committee convened its first meeting in November 2019. Members elected two co-chairs to serve as leadership. With general agreement on committee objectives and goals for 2020, the group reviewed and prioritized tasks. The committee utilized several tools such as on-line voting and survey methodology to elicit member feedback on the highest priority and time-sensitive tasks. The key phases of work are summarized below:

1. **Identify goals and objectives**: A charter with overall goals, objectives and deliverables was created and approved. See Appendix A for the approved charter.

2. **Prioritize tasks:** The committee members unanimously agreed to pursue the recommendations summarized in the Medication Reconciliation Polypharmacy Workgroup report. An electronic survey was created to elicit impact and effort assessments from all members. Results of the survey are presented via an impact-effort grid in Figure 2. From this grid, low effort items without any dependencies were selected as work streams in addition to a single foundational element that was deemed as the cornerstone for any medication reconciliation at any level of care. This critical element was the Best Possible Medication History (BPMH), defined in Figure 3.
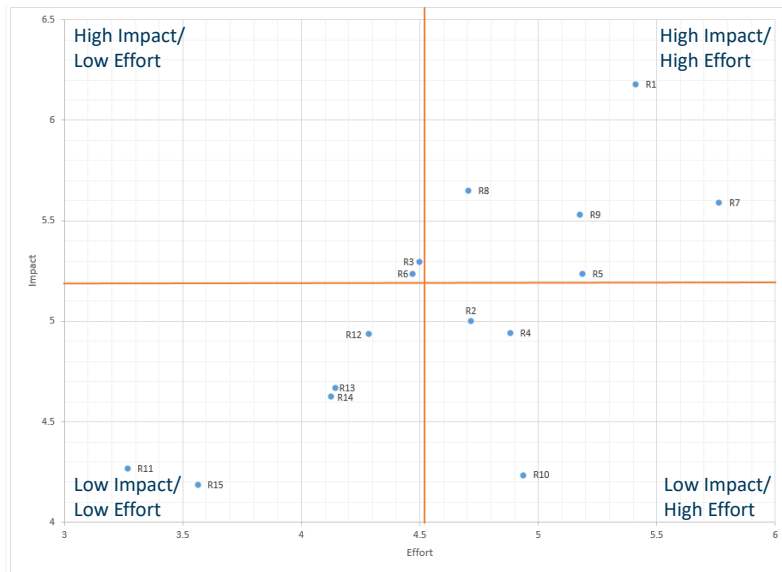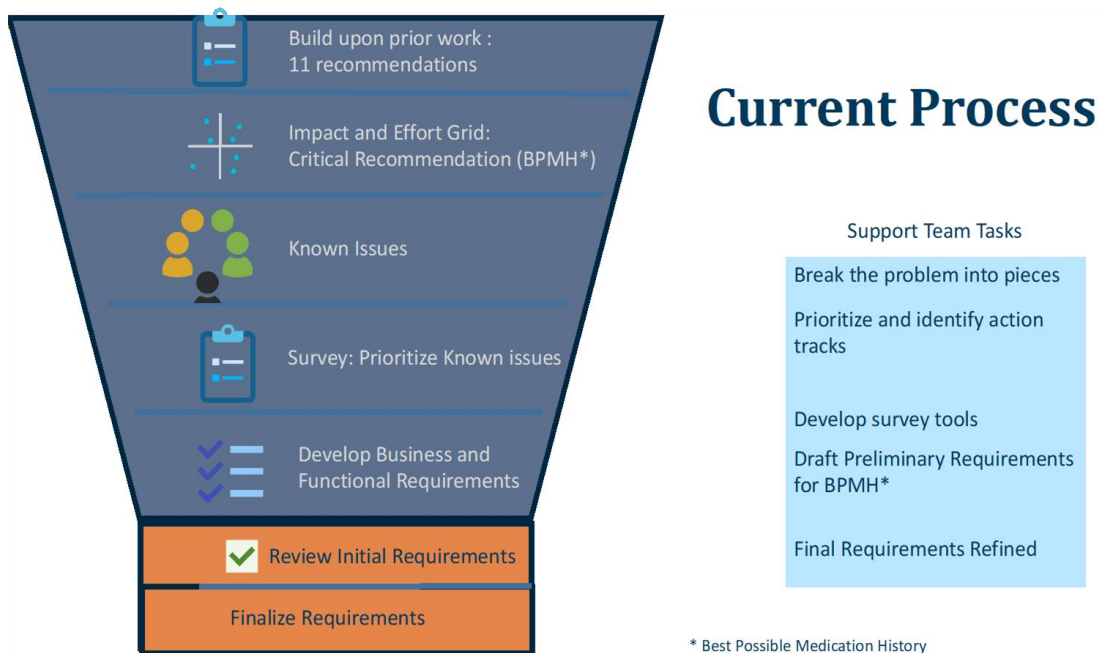
Figure 2: Impact Effort Grid

Figure 3: BPMH Recommendation Development

3. **Timelines and Deliverables:** Priority tasks were next plotted on a timeline to account for any deliverable deadlines or collisions with other important deadlines. For instance, when CMS required use of new SCRIPT standards for e-prescribing beginning in 2020, it afforded an opportunity to promote the CancelRx message standard for electronic deprescribing of medications that are discontinued in an electronic prescribing system. This work built upon prior work done by the Cancel Rx subgroup. The overall initial timeline for tasks is presented in Figure 4 below. The timelines needed to be revised due to two unexpected natural events. In April, the State of CT saw its peak of COVID-19 cases during the first wave of the pandemic. Several committee members were re-tasked in order to support the battle against COVID-19; consequently, the April meeting was suspended. Similarly, storm damage across the state compelled the cancelation of August's meeting. Despite these obstacles, the committee members, with support from the MRPC administrative team, were able to iteratively develop and refine BPMH requirements. These are summarized below under the BPMH section.
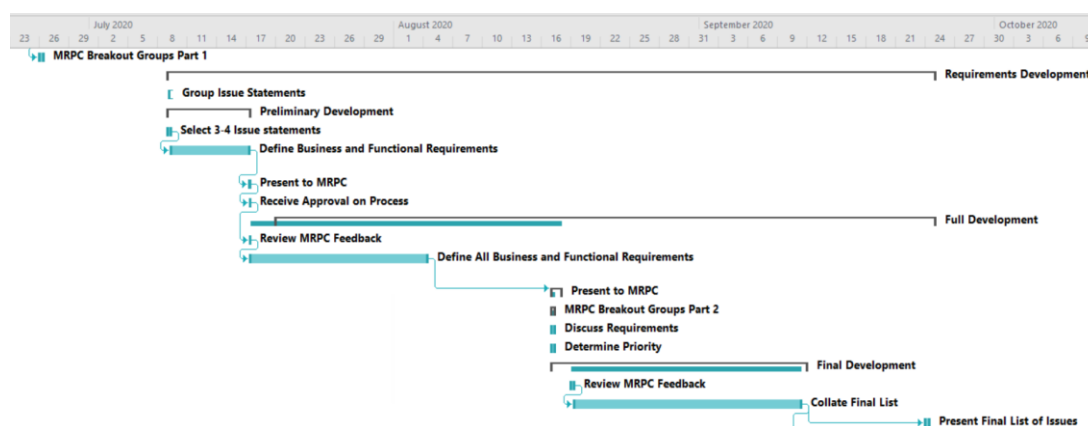
Figure 4: MRPC Abbreviated Activities Timeline

4. **Finalize and Plan Next Steps**: At the close of fiscal year 2020, the committee drafted its final report, which is presented here. In addition, a roadmap for next steps was reviewed and is presented in the Future Work section below. The committee recognizes that medication safety is an important public health mission and needs broad participation across stakeholders. During the committee meetings, developments in this space across the state and the country were reported on. For example, there have been periodic presentations to, and coordination with the Health Information Technology Advisory Council (HITAC), established to advise the State of Connecticut's Health Information Technology Officer and coordinate health IT activities including health reform initiatives in Connecticut. Additionally, the MRPC has kept abreast of the development of the State health information exchange (HIE), Connecticut Information Exchange (Connie), a nonprofit nongovernmental entity established to develop and provide HIE services for the state of Connecticut. Finally, some members of the committee have met with other organizations to understand pros and cons of an approach to expand the Prescription Drug Monitoring Program (PDMP), which collects prescription data for Schedule II through Schedule V drugs into a centralized database. In Connecticut the Prescription Monitoring and Reporting System (CPMRS) is used by healthcare providers and pharmacists in the active treatment of their patients. The purpose is to present a complete picture of a patient's controlled substance use, including prescriptions by other providers. The future work section encompasses this situational awareness into a vision of possible ways to bring the BPMH from nascent concept to a realized solution to benefit citizens and clinicians across the State. The committee

membership and support teams have made consistent efforts to stay tied into state agency activities, and maintain collaborative working relationships, with the realization that the work of this committee is a part of the larger state Health IT landscape. The group remains open to learning from other states and hosting more exploratory and informational sessions. The committee anticipates expanding and increasing our State, regional, and national awareness and collaboration with a view towards action-oriented work in 2021.

Committee Tasks

The key tasks and activities that the MRPC has worked towards in the past year are summarized in this section of the report. These tasks were identified and prioritized by the committee, as outlined in the committee progress section above. While each of these tasks is outlined separately within this section they all relate back to the mission of the MRPC of providing strategic guidance and recommendations to the Health IT Advisory Council and the Office of Health Strategy with regards to improving Medication Safety.

Best Possible Medication History (BPMH)

In keeping with the workgroup recommendation for near-term efforts focused on making tangible progress toward an enhanced and uniform best possible medication list, the committee made a concerted effort to move forward with the development of the BPMH. Efforts began with a curated a statement to capture the spirit of a BPMH:

> *Safe, quality and timely delivery of healthcare requires access to the 'Best-Possible Medication History". The BPMH should include all prescription and non-prescription medications, supplements and herbal products. The BPMH should be accurate, up-to-date and accessible to stakeholders (including but not limited to patients, caregivers and health care providers) at the point of decision making. Access to the BPMH will support collaborative care, reduce medication costs and errors and improve clinical outcomes.*

This statement elucidates the objectives identified in the charter while recognizing that in the short term the focus will be on identifying critical features and input sources for the BPMH. To identify and refine the requirements statements[12], the committee first identified the roles of stakeholders of the BPMH. Roles were then grouped into logical cohorts such as clinicians, prescribers and health systems and patients, care givers and home health agencies. Thereafter using breakout sessions, each group identified gaps in medication history that exists today in their respective areas. These gaps or "known issues" were statements for answering the question "What problem are we trying to solve?" These issues were then distilled into features that would be most useful in a BPMH as business and functional requirements by the administrative team and endorsed by the committee. Figure 5 represents the development of business requirements and subsequent functional requirements from an identified known issue statement. A timeline of activities can be found in Figure 6, and a list of known issue statements, business requirements, functional requirements are detailed in Appendix C.
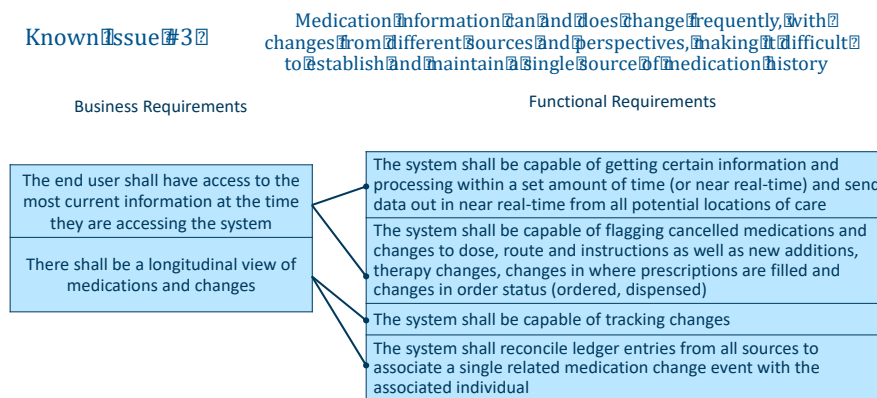

Figure 5: Sample of BPMH Requirements

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[12] Business requirements define the 'why' for the BPMH: they provide the scope of needs to be addressed. Functional requirements define the 'what' for the BPMH: they provide the specific steps the MRPC will need to take to achieve the business requirements. These requirements are more explicitly described in Appendix C.

Developing the BPMH Business & Functional Requirements
A visual timeline of work done by the MRP committee and the Admin team

Admin team includes*:
- OHS (Adrian Texidor)
- UCHC (Tom Agresta, Rachel Rusnak, Ryan Tran)
- CedarBridge (Terry Bequette, Kassi Miller)
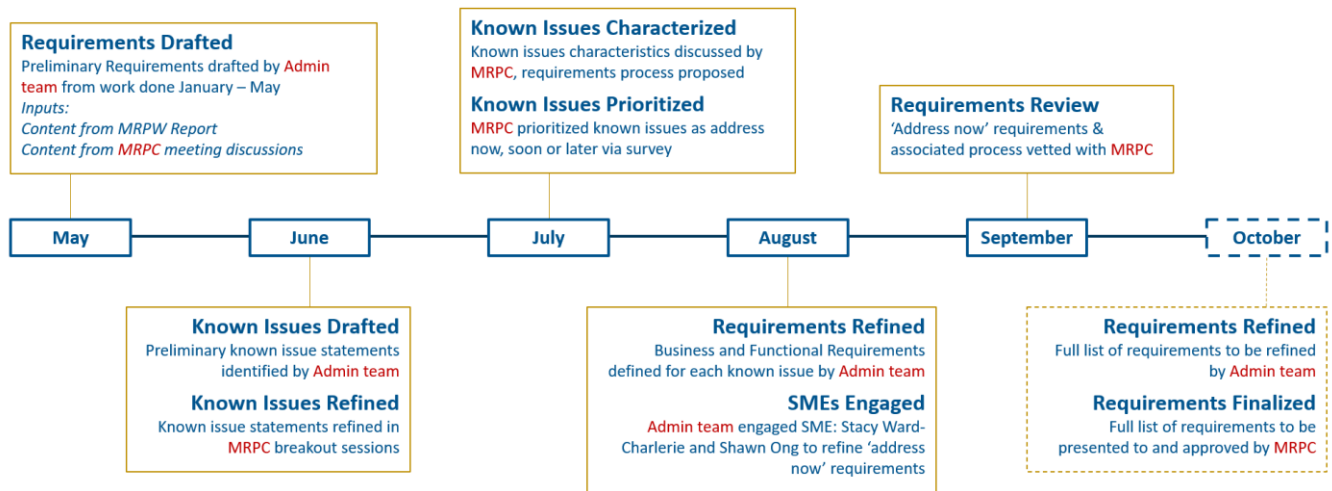
*Regular support from the Co-Chairs

Requirements Drafted
Preliminary Requirements drafted by Admin team from work done January – May
Inputs:
Content from MRPW Report
Content from MRPC meeting discussions

Known Issues Characterized
Known issues characteristics discussed by MRPC, requirements process proposed

Known Issues Prioritized
MRPC prioritized known issues as address now, soon or later via survey

Requirements Review
'Address now' requirements & associated process vetted with MRPC

| May | June | July | August | September | October |

Known Issues Drafted
Preliminary known issue statements identified by Admin team

Known Issues Refined
Known issue statements refined in MRPC breakout sessions

Requirements Refined
Business and Functional Requirements defined for each known issue by Admin team

SMEs Engaged
Admin team engaged SME: Stacy Ward-Charlerie and Shawn Ong to refine 'address now' requirements

Requirements Refined
Full list of requirements to be refined by Admin team

Requirements Finalized
Full list of requirements to be presented to and approved by MRPC

Figure 6: Development of the BPMH Business & Functional Requirements[13]

Next Steps

The business and functional requirements identified provide a strong foundation for informing a technical solution for medication history regardless of the scope or tool used. For instance, sources of discrete medication history that are available in a standardized and shareable digital format are identified. Critical data elements needed for medication history to be useful such as dose, strength, last dispense date are identified. The need for near-real-time updates is clearly evident from these requirements. Any technical solution, whether designed as a dynamic clearinghouse or repository would need to meet these requirements. Furthermore, some elements of a user interface by role are also described in these requirements. For example, clinicians would need to see the latest information by default and would like access to dispense history which can be a click or two away. The MRPC will continue to expand on these feature sets and technical specifications and partner with other stakeholders at state or national level. An approach to evaluating the feasibility and technical requirements will be discussed in 2021. Additionally, next steps on this pathway should be a part of early discussions in the next year.
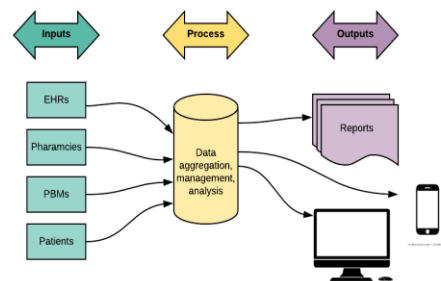
Implementation and Adoption of CancelRx and promoting Deprescribing

Deprescribing is the planned process of reducing or canceling medications that may no longer be of benefit to the patient or may be causing harm. The ability to cancel a prescription medication electronically has existed from a technical perspective for several years through a technical messaging standard (SCRIPT Standard 10.6) developed by the National Council for Prescription Drug Programs (NCPDP) and adopted by the Office of the National Coordinator (ONC). With the implementation of 2017 NCPDP standards, all prescribing systems were required to support sending electronic cancelation messages when a medication is discontinued. Identifying discontinued medications in the med list is an integral part of medication reconciliation, the formal process for creating the most complete and accurate list possible of a patient's current medications. Additionally, appropriate

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[13] SME's: Subject Matter Experts

deprescribing is essential for maintaining an accurate medication list and will be vital to a Best Possible Medication History(BPMH). Since deprescribing complements the MRPC's efforts to pursue the Best Possible Medication History, the committee took advantage of the opportunity to promote education, awareness and preparedness amongst end users and pharmacies around CancelRx and deprescribing best practices. CancelRx[14] is messaging standard that facilitates communication for deprescribing by allowing prescribers to send electronic cancellation messages from their EHRs to pharmacies when medications are discontinued. A statewide survey of all prescribers was conducted in partnership with Department of Consumer Protection, Drug Control Division, which identified a need for education on the existence and use of an electronic messaging standard for deprescribing medications, CancelRx. The results of the survey demonstrated a clear knowledge gap and an interest in web-based education regarding this topic along with other Med Rec/Polypharmacy related issues. Figure 7 outlines the provider types that responded to the survey. Figure 8 describes Surescripts trends in Connecticut.
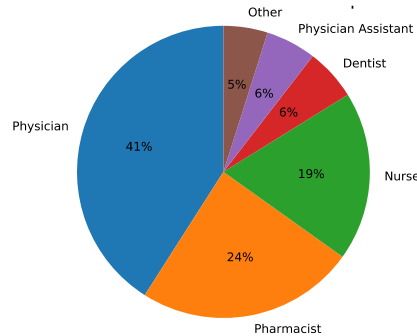
Figure 7: Distribution of responding provider types to the CancelRX Survey .
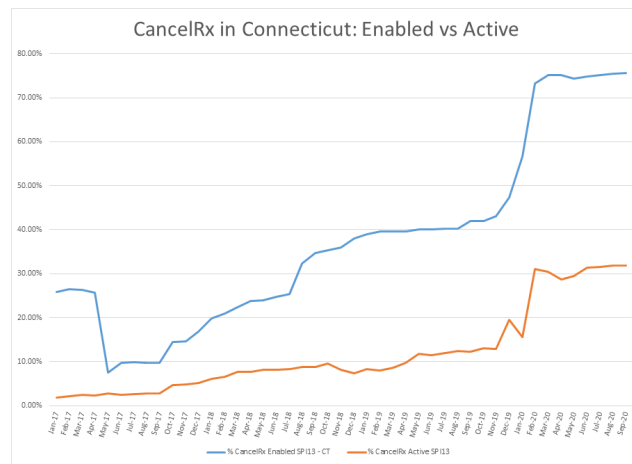
Figure 8: Surescripts Prescriber Trends in Connecticut

Note: The spikes in Figure 8 at the end of 2019 in to 2020 are the result of health systems using Epic enabling the capability to utilize the new standard upon upgrade to the new version of the NCPDP script standard. The majority of Epic Health Systems nationwide upgraded in Q4 of 2019.
Enablement: The prescriber's system has the technical capability to use the transaction and the prescriber has been turned on to send it.
Active: The prescriber has sent a CancelRx transaction in the last 30 days.

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[14] Surescripts is one of the significant drivers of the uptake of CancelRx transactions in 2019 and 2020. Surescripts encouraged all prescribing and pharmacy systems to enable the capability to send or receive the CancelRx transaction before they could transact on the network in the new version of the NCPDP standard. This is vital because if there are no pharmacies to receive cancelation transactions there will be transmission of transactions.

The committee recognized that there was a substantial knowledge and skill gap regarding the varied workflows, tools, Health IT standards and policies to most effectively improve medication reconciliation and reduce inappropriate polypharmacy amongst various stakeholders including: clinician providers, pharmacists, healthcare organizations, patient and family caregivers and even amongst committee members themselves. Figure 7 displays the distribution of provider types who responded to the deprescribing survey. This presented an occasion to utilize a continuing medical and pharmacy education opportunity available through the UConn Health team to provide education and outreach to a broader community within the state.

Committee members then developed and presented a webinar for providers across the state on deprescribing. Deprescribing, the planned and supervised process of dose reduction or stopping of medication, is an essential practice of good prescribing. One committee member served as a moderator and two additional members served as panelists at a successful continuing medical education event hosted in June 2020. The webinar had 165 attendees with learning objectives that included the impacts of polypharmacy, the challenges associated with deprescribing, the role of Health IT in medication management, CancelRx workflow and best practices to implement and apply CancelRx in clinical practice.

Additional webinars shared with the committee included a description of the varied Health Information Exchange structures within New England and how regional states were handling the COVID-19 pandemic as well as one regarding the use of Telehealth within Connecticut that included a section on challenges and best practices in doing Med Rec through the use of Telehealth. Further details on the activities undertaken around deprescribing and increasing adoption of CancelRx can be found in Appendix D.

Next Steps

In addition to ongoing education to improve the effectiveness of deprescribing practices, the committee will review the relationship of deprescribing with other committee activities. For example, deprescribing has overlap with team-based medication reconciliation as well as with the BPMH. With the close ties of deprescribing and CancelRx in mind, the MRPC considers adoption of CancelRx to be a critical component of the committee's purpose and goals. The committee will continue to monitor the implementation of CancelRx in Connecticut and will consider policy initiatives, including legislation, to ensure this standard is fully adopted in the state and that measures of this tool's effectiveness are in place.

Medication Reconciliation Resources

Medication reconciliation resources have been identified and produced. A preliminary set of resources was made available via a web repository in December 2020. These resources include peer reviewed literature, documentation around standards, recommendations and best practices, as well as developed educational materials for health care providers. Additional resources will include materials for patients, caregivers, policy makers, and others. These resources will address general medication reconciliation and polypharmacy issues, as well as deprescribing, CancelRx, medication management, BPMH, and other topics as deemed relevant by the committee. This work is ongoing.

SUPPORT Act and IAPD funding

A number of timing factors, including the launch of Connie as the state's HIE and the availability of resources to pursue activities related to the SUPPORT Act in the short window of time available through the IAPD, precluded making much progress in this area. However, the fundamental interest of determining if leveraging the Prescription Drug Monitoring Program (PDMP) database and processes to support the BPMH is an appropriate part of a solution is still keen. The Director of the Department of Consumer Protection (DCP) Drug Control Unit, who oversees and administers the State's PDMP, is an active member of the MRPC. Recently awarded Support Act funds, have resulted in plans that will provide integration for EHRs with Connecticut's Prescription Drug

Monitoring Program. This integration will occur at no cost for providers and health systems for two years, and will facilitate easier access to Connecticut's PDMP for providers. Ongoing close coordination with the DCP is planned to ensure harmonization between the agency and the MRPC. A potential area for collaboration for the MRPC could include identifying how to best facilitate the adoption of the PDMP/EHR integration opportunity, driving adoption and use throughout the state, and encouraging enhanced coordination and medication management between State partners for consumer benefit. The MRPC could offer educational opportunities to showcase how other HIEs and healthcare systems across the country have done this and implemented successfully.

Privacy and confidentiality of medication-related information was frequently mentioned in the course of discussing other topics at MRPC meetings during the past year. Operation of the BPMH, when it becomes an implemented resource for providers and prescribers, must align with HIPAA. Depending on the data sources, the BPMH may also be impacted by alignment with 42 CFR Part 2[15], which pertains to the confidentiality of patient records related to substance use disorder. Due to the timing of IAPD submission and approval the MPRC was not able to access certain planning funding available through the IAPD. However, these funds should now be available in FFY 2021 and the committee will begin generating ideas for utilizing these funds to advance the goals of the MRPC.

Next Steps

The MRPC will determine how best to align the activity and projects of the committee with the Medicaid enterprise, to the fullest extent possible. Initiatives such as the BPMH, CancelRx, and best practices for deprescribing and polypharmacy have benefits for Medicaid populations and providers and the associated Medicaid funding can help to secure implementation and ongoing support.

As the MRPC wraps up the requirements for a BPMH it will continue to work on policy alignment including medication quality measures, incentives for medication management and reconciliation, assessing a policy mandate for the CancelRx standard, privacy and confidentiality of medication-related information, and introducing team-based medication reconciliation into healthcare provider workflows. The committee will continue to monitor activities related to the integration of the Prescription Drug Monitoring Program, updates, enhancements and to evaluate potential collaboration opportunities with DCP, in efforts to support the BPMH and medication reconciliation in general.

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[15] https://www.hhs.gov/about/news/2020/07/13/fact-sheet-samhsa-42-cfr-part-2-revised-rule.html

Table 4: Overview of MRPW Recommendations and Subsequent MRPC Accomplishments

Recommendation	Task	Activity
Best Possible Medications History (BPMH)	Near-term efforts (1-2 years) should be focused on making tangible progress toward an enhanced and uniform best possible medication list.	The committee has engaged in a thoughtful process to identify known concerns and translated them in to business and functional requirements.
Patient Engagement	Develop a process for patient and family/caregiver engagement.	The development of requirements for the BPMH was undertaken with the patient at the forefront. Several of the identified requirements pertain to patient and family engagement. Activities in this area will continue in 2021.
Medication Reconciliation Process Improvements	Develop a repository of evidence-based, best practice medication tools, technical advisories, subject matter experts, and policy and regulatory guidance documents should be developed.	Surveys have been deployed, a webinar series has been initiated, and the development of the repository is in progress, initially launched in December 2020.
Team Approach	Mission critical team members, whose participation in medication reconciliation is essential for success, should be identified.	Key roles were identified in the process of the BPMH requirements development process.
Implementation and Adoption of CancelRx	Complete a formal assessment of the return on investment (ROI) for the CancelRx standard and other medication reconciliation recommendations to support the widespread adoption by pharmacies should be conducted.	CancelRx adoption in Connecticut is relatively high. Alternative approaches to increase adoption are under consideration.
Deprescribing	Identify evidence-based best-practices for deprescribing and added to the repository of medication reconciliation tools.	Surveys were developed and deployed to providers and pharmacists in Connecticut. Additionally, a continuing education webinar on deprescribing was hosted in June 2020. The materials developed for the webinar, as well as survey results, and materials identifying best practices will be included in the forthcoming are included in the resource repository.
Technology	Focus on developing a best possible medication list, leveraging existing data resources that include community pharmacies, PBMs, and EHRs.	The committee has discussed technology and potential solutions regularly and has identified some technical suggestions for the BPMH. Technology will remain a consideration for the committee.
SUPPORT Act Funding and Planning/Design Process	Develop a process for communication and coordinated planning between the SUPPORT Act activities and the initiatives and future planning activities recommended by the MRP Work Group.	In progress
Aligned Policy	Identify and align work with medication quality measures that align clinically meaningful outcomes.	The committee has considered policy issues and has kept them in mind during work completed thus far in the development of the BPMH, deprescribing and CancelRx. Further work is expected in this area.
Planning/Design Process and Use of IAPD Funding	Funds from the current IAPD should be utilized to finalize planning, design and requirements for the projects and services recommended in this report.	These plans were delayed due to the Covid 19 public health crisis. The committee is planning to pursue work in this area in 2021.
Continuation of the MRP Workgroup	The MRP Work Group should be constituted as a standing committee of Health IT Advisory Council.	The workgroup was transitioned into a standing committee that has an approved charted, meets monthly, and is composed of diverse membership.

MRPC Future Work

As it pertains to the original MRPC charter, the committee considers significant progress to be made in the development of a detailed strategic approach for the creation of a BPMH, and the development and implementation of a plan for deprescribing transaction standards. The requirements and recommendations developed by the committee for the BPMH address these goals and lay the foundation for future development at the State level. Progress towards providing support for the Implementation Advance Planning Document (IAPD) and the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act funded initiatives as related to the MRPC are in progress, and the committee's ideas for utilizing these funds to advance the work are being finalized.

The committee proposes to focus future work on the development, launch, and refinement of the online directory of medication management and medication reconciliation tools and solutions and continuing to serve as a resource and collaborative partners across Connecticut, while promoting the advancement of the BPMH and expansion of deprescribing standards. Partners in these efforts include the Office of Health Strategy (OHS), the Connecticut Information Exchange (Connie), the Department of Social Services (DSS), who administers the State's Medicaid program, the Department of Consumer Protection (DCP), who administers the prescription drug monitoring program, and others. The MRPC plans to continue this work through September 2021. Continued engagement of the MRPC and its membership with Connecticut State Agencies, non-profits, and national entities will strengthen the position of Connecticut and its journey towards medication safety. The committee recognizes the value that these collaborations bring, and that these partners are those who will implement the recommendations and work produced, moving them through the next stages of development, prototyping, and application. Figure 9 reflects how the MRPC views its collaboration potential with state, regional, and national entities. Figure 10 describes the foundational work completed by the committee through 2020.
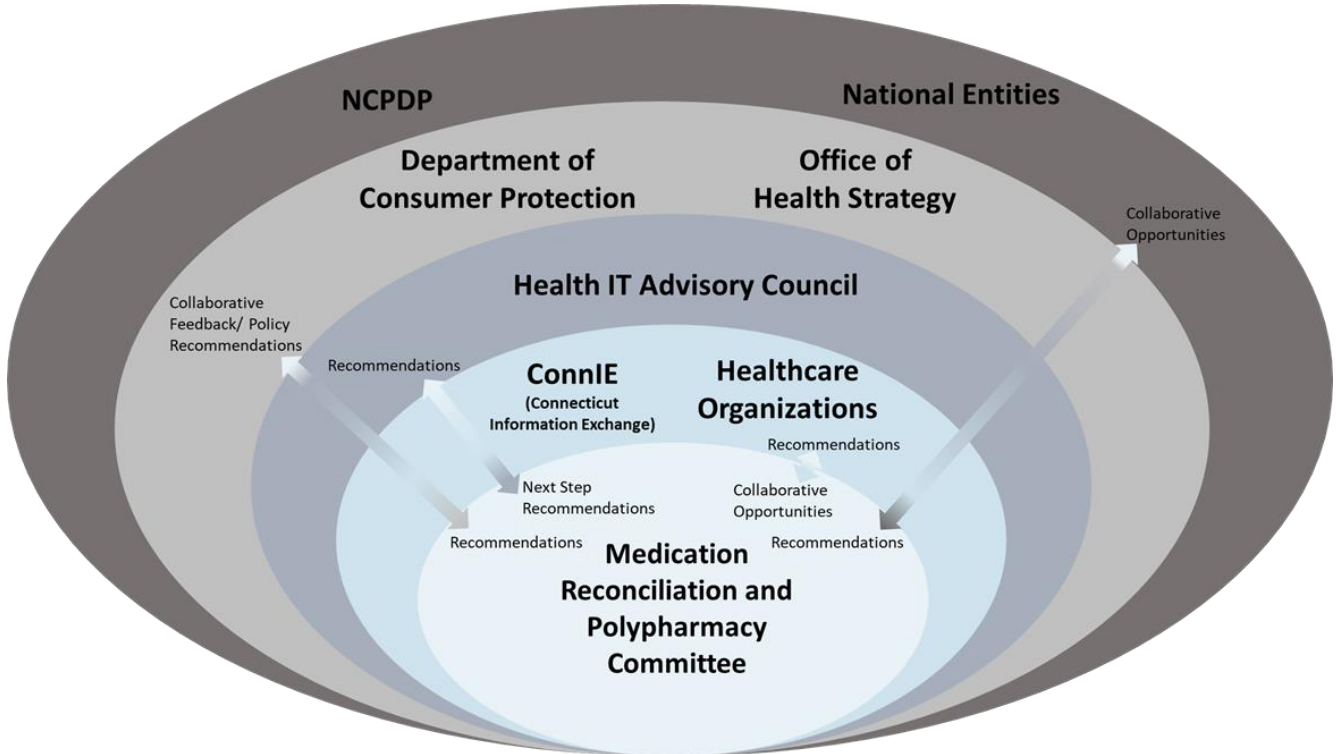
Figure 9: An Illustration of MRPC Connection to State Entities
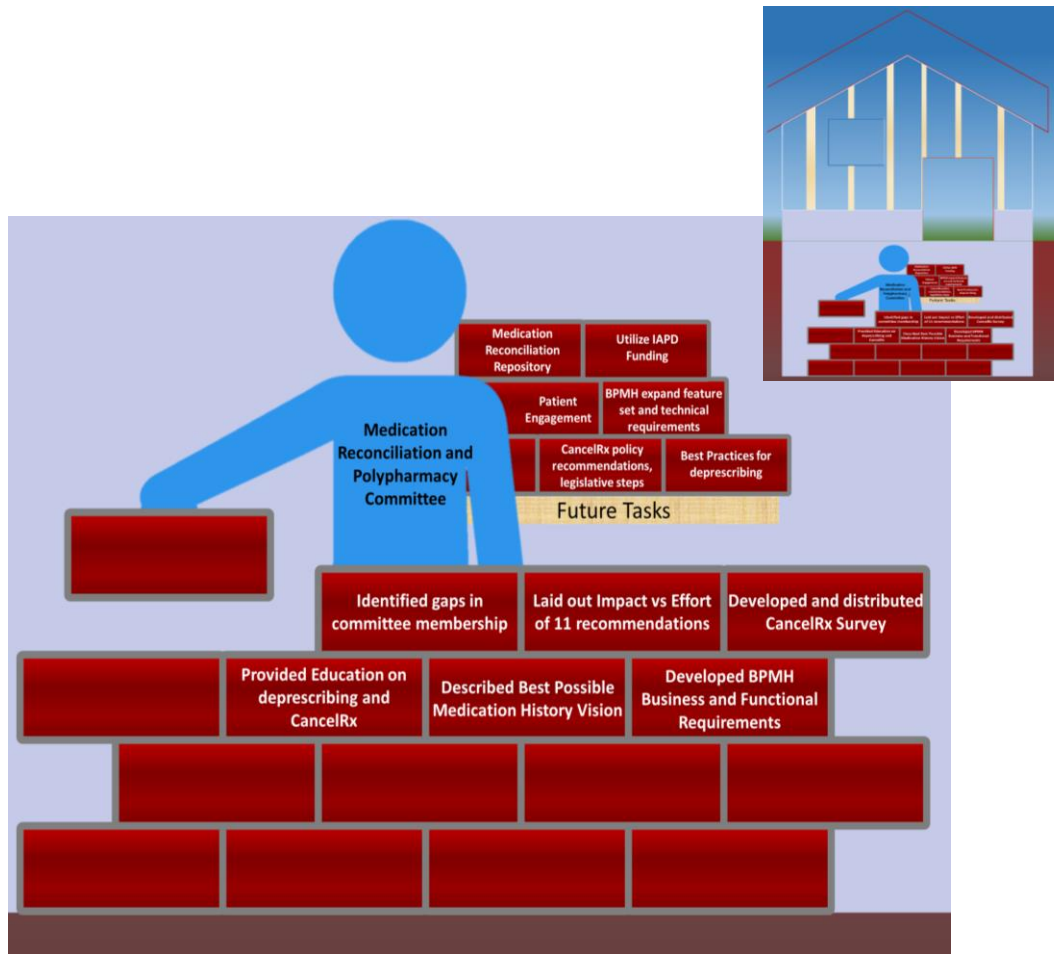
Figure 10: Foundational Activities of the MRPC

Project Charter
Medication Reconciliation & Polypharmacy Committee (MRPC) of the Health IT Advisory Council
September 24, 2019

Article 1: Name

Section 1: The name of this entity shall be the Medication Reconciliation & Polypharmacy Committee (MRPC), established by the Health Information Technology (IT) Advisory Council on September 19, 2019.

Article 2: Purpose

Section 1: The purpose of the MRPC is to provide strategic guidance, recommendations, and ongoing support to the Health IT Advisory Council and the Office of Health Strategy (OHS) for the development and implementation of patient-centered and evidence-based best practices necessary to contribute to the development and maintenance of a best possible medication history (BPMH), supported by communication, education, and user-friendly digital tools**.** The MRPC will build upon the approved recommendations and areas of focus identified by the Medication Reconciliation & Polypharmacy Work Group (found in Appendix B: MRP Work Group Recommendations). Through September 2021, the MRPC will focus on the following project goals:

- *Goal 1:* Develop a detailed strategic approach for the creation of a BPMH, supported by active patient engagement, that results in near-term value for stakeholders while laying the foundation for a longer-term, more extensive and integrated solution.
- *Goal 2:* Create an online directory of medication management and medication reconciliation tools and solutions for communication of evidence-based, best practice medication tools; patient engagement strategies; technical advisories; subject matter experts; and policy and regulatory guidance documents.
- *Goal 3:* Serve as a resource to OHS, Health Information Alliance, Inc., Department of Social Services, and Department of Consumer Protection to support development and implementation related to: technical solutions and use cases; workflow integration; medication reconciliation pilot activities; stakeholder engagement; and measurement and evaluation.
- *Goal 4:* Develop an implementation plan for the Medication and Polypharmacy Work Group recommendations related to deprescribing transaction standards, including CancelRx.
- *Goal 5:* Support Implementation Advance Planning Document (IAPD) and Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act funded initiatives and actively monitor funding opportunities related to the stated purpose and goals of MRPC.

Other goals may be considered to support the purpose and goals of the MRPC, as needed.
Section 2: The MRPC will not endorse or recommend any specific software solutions as part of its work; however, they may evaluate and review functionality for the purposes of achieving the above stated purpose and goals.

Article 3: Membership

Section 1: Membership in the MRPC shall be broadly representative of stakeholders involved in the matters of medication reconciliation and polypharmacy. Experience and expertise represented will include, at a minimum, the following:

- Patients, consumers, and caregivers
- Subject matter expertise in medication reconciliation
- Subject matter expertise in polypharmacy
- Community pharmacy
- Payers / pharmacy benefit managers
- Hospitals and health systems
- Providers / prescribers
- Long-term post-acute care, including skilled nursing and home health
- State agencies, including, but not limited to:
    - Department of Social Services
    - Department of Consumer Protection
    - Department of Mental Health and Addition Services
    - Department of Developmental Services
- Representation from the Health IT Advisory Council
- Health IT technology development and implementation

Section 2: Members of the MRPC shall initially be appointed by the Co-Chairs of the Health IT Advisory Council. Thereafter, the Chair, or Co-Chairs, in consultation with OHS, shall appoint members of the MRPC.

Section 3: Membership recruitment should take into consideration such factors as the geographic residence, race, ethnicity, and language of potential candidates to ensure that the group is as representative of as many perspectives and experiences as possible. This group will also include patient advocates to consult on patient engagement.

Section 4: As determined by the Chair, or Co-chairs, of the MRPC, additional subject matter experts (SMEs) may be sought on a permanent or periodic basis for the areas identified in the MRP Work Group's recommendations (see Appendix B), including, but not limited to: software development; electronic health record (EHR) and pharmacy information systems; and policy and regulations.

Section 5: Although this is not a time-limited group, membership will be reviewed annually by the Health IT Advisory Council and OHS to determine if membership is adequate to support the above stated purpose and goals of the MRPC. Recognizing that consistent participation in MRPC meetings is critical for success, failure by any member to attend at least 66% of meetings (within a given calendar year), or members who are absent for three consecutive meetings, shall result in consideration of termination from the MRPC. Members should notify the Chair, or Co-chairs, if they will be absent for any meeting. Members serve on a voluntary basis and without compensation.

Article 4: Officers

Section 1: The Chairperson shall be chosen by the members of the MRPC during the first scheduled meeting. The MRPC may also choose to elect Co-Chairs if Co-Chairs (rather than a single Chair) are deemed a better structure to support the stated purpose and goals.

Section 2: As Chair, or Co-chairs, the selected individual(s) will be responsible for setting meeting agendas, establishing regular meeting schedules, appointing subcommittees as needed, and acting

as liaison between the MRPC, OHS, the Health IT Advisory Council, and the Health Information Alliance, Inc.

Article 5: Subcommittees

Section 1: Subcommittees of the MRPC may be formed as needed by the Chair, or Co-chairs, in collaboration with OHS designated staff. Subcommittee leaders will be appointed by the Chair, or Co-chairs, in collaboration with OHS designated staff. The subcommittee lead member is responsible for organizing subcommittee meetings, with assistance from OHS staff, as necessary. The subcommittee lead member will report subcommittee findings and recommendations to the full MRPC for their information or action.

Article 6: Operating Procedures

Section 1: The MRPC operates as a standing committee of the Health IT Advisory Council. All records of the MRPC will be transmitted as soon as practical to OHS for inclusion in Health IT Advisory Council matters as appropriate.

Section 2: The MRPC is initially chartered for the period November 2019 through September 2021. At the conclusion of this initial period, the MRPC may decide to continue its work if deemed valuable at that time. If so, the MRPC will make a request for continuation to the Health IT Advisory Council. Otherwise, the MRPC shall document the basis for the conclusion of its work.

Section 2: The Office of Health Strategy (OHS) may establish procedures to allow members to participate in meetings by videoconference or teleconference.

Section 3: Meetings will be governed by Robert's Rules of Order, Abbreviated. One half of the membership will constitute a quorum. Action on agenda items may be taken by no less than a majority of members present at the meeting.

Section 4: The Chair, or Co-chairs, may solicit agenda items from members in advance of a meeting and establish agendas in collaboration with the OHS designated staff. Items may be added to the agenda on the day of the meeting if approved by the Chair, or Co-Chairs.

Section 5: All meeting information will be published on the Connecticut Public Notice web site and on the OHS web site. Meeting changes will be sent by email to members no later than 9 AM the day of the scheduled meeting.

Article 7: Duties of OHS

- OHS will provide the MRPC and the Chair, or Co-chairs, with support in the areas of meeting facilitation, the development of agenda and meeting materials, logistical planning and scheduling, research and analysis and stakeholder engagement. This support will be provided by OHS personnel or through engagement of professionals with required expertise.
- OHS shall inform the MRPC about all known changes in federal and state policy as well as rules and regulations that impact its work and the stated purpose and goals.
- OHS will consult with ongoing committees and advisory bodies in the state, maintain familiarity of the subject and purpose of the MRPC, and communicate perceived areas of opportunity for collaboration.
- OHS will ensure ongoing communication between the MRPC and relevant OHS staff and leadership as well as communication with the Health IT Advisory Council.
- OHS staff assigned to the MRPC will attend all meetings and inform its members of timely developments relevant to its work.
- An OHS administrative support member(s) will assist the MRPC's Chair, or Co-chairs, as needed, to maintain membership and interested parties with information, distribute meeting

agendas and notices to the membership and interested parties, and record the meeting minutes of the MRPC's meetings, including attendance.

Article 8: Duties of Health IT Advisory Council

- The Health IT Advisory Council shall approve the MRPC Project Charter and any updates.
- The Health IT Advisory Council shall regularly review work products of the MRPC and provide feedback as requested and appropriate.
- The Health IT Advisory Council will take action on MRPC recommendations as necessary to support the work of the MRPC and the purpose of the Health IT Advisory Council, consistent with enhancing the health and healthcare of CT and its residents.
- The Health IT Advisory Council will consider requests from the MRPC for resources and support as needed to support the Purpose and Goals of the MRPC.
- The Health IT Advisory Council will consider requests from the MRPC for extension of its activities beyond the initial period that concludes September 2021.

Appendix B: *Medication Reconciliation and Polypharmacy Work Group Recommendations*

1. Best Possible Medications History (BPMH)
The committee developed business and functional requirements for the proposed BPMH solution via work sessions, surveys, and environmental scan research.
2. Patient Engagement
To support this goal, the committee maintains active membership of patient advocates on the committee, has encouraged patient involvement in webinars and always keep the patient perspective as the north star in the development of the requirements for recommendation 1 above.
3. Medication Reconciliation Process Improvements
The committee provided input on surveys and a webinar series that created information which will eventually be stored in an online repository. Additionally, several of the requirements for recommendation 1 above are written specifically for improvements to workflow.
4. Team Approach
During the development of the requirements to support recommendation 1, the committee identified three main roles involved in medication reconciliation: health systems & organizations, prescribers & clinicians, and patients & home health. The existence and the functioning of the committee itself supports this recommendation.
5. Implementation and Adoption of CancelRx
The committee assisted with surveys to assess the overall CancelRx adoption within the state. CancelRx was featured in a webinar discussing deprescribing. Continuing education credits (CME) were available for medical and pharmacist professionals.
6. Deprescribing
The committee supported the creation of content for a CME webinar on deprescribing.
7. Technology
The business and functional requirements developed for recommendation 1 include language about possible technical characteristics to support the best possible medication history, but technical requirements are not being addressed by the committee.
8. SUPPORT Act Funding and Planning/Design Process
Members of the committee supported the SUPPORT Act funding and planning/design process between February and September. There was no clear immediate impact of SUPPORT Act activity and that of the MRPC although the MRPC continues to track the progress of the Prescription Drug Management Program and considers that to be an information source for the BPMH. The committee receives periodic updates on advancements with the PDMP from the Director of the DCPs Drug Control Unit, an active member of the MRPC.
9. Aligned Policy
Operation of the BPMH, when it becomes an implemented resource for providers and prescribers, must of course align with HIPAA. Depending on the data sources it may also be impacted by alignment with 42 CFR Part 2. As the MRPC wraps up the requirements for a BPMH it will do additional work on policy alignment including aligned medication quality measures, incentives for medication management and reconciliation, assessing a policy mandate for the CancelRx standard, privacy and confidentiality of medication-related information, and introducing team-based medication reconciliation into healthcare provider workflows.
10. Planning/Design Process and Use of IAPD Funding
The MRPC intends to utilize planning funding that has been proposed for FFY 2021 in the current IAPD-U. More significantly the MRPC will determine how best to align the activity and projects of the committee with the Medicaid enterprise, to the fullest extent possible. Initiatives such as the BPMH, CancelRx, and best

practices for deprescribing and polypharmacy have benefits for Medicaid populations and providers and the associated Medicaid funding can help to secure implementation and ongoing support.

11. Continuation of the MRP Work Group

The committee has had nine successful regular meetings as a continuation of the MRP work group. This recommendation is complete for the current year. The committee will continue to meet and develop initiatives through September 30, 2021 as currently funded and documented in the charter document.

Appendix C: BPMH Requirements

Following the guidance of the Medication Reconciliation Polypharmacy Work Group Final Report[16], the Medication Reconciliation Polypharmacy Committee (MRPC) has developed a robust set of recommendations to support the decision-making process around a potential solution for the development of a Best Possible Medication History (BPMH). The vision for the BPMH was presented at the June 25th, 2020 meeting of the committee:

Safe, quality and timely delivery of healthcare requires access to the 'Best-Possible Medication History''. The BPMH should include all prescription and non-prescription medications, supplements and herbal products. The BPMH should be accurate, up-to-date and accessible to stakeholders (including but not limited to patients, caregivers and health care providers) at the point of decision making. Access to the BPMH will support collaborative care, reduce medication costs and errors and improve clinical outcomes.

This vision statement, along with the guiding principle that the patient is the north star, lead to the creation of twenty-two known issue statements and their associated business and functional requirements. The known issues were determined by considering the three perspectives involved in medication reconciliation: health systems & organizations, prescribers & clinicians, and patients & home health. These requirements have been delineated into five high-level categories, simply to easily organize the thought process and recommendations. In the case of the perspectives as well as the categories, there is overlap and any assumptions made in that regard have been explicitly outlined. This report explains the process and rationale behind the requirements and provides high-level recommendations for next steps toward a successful BPMH.
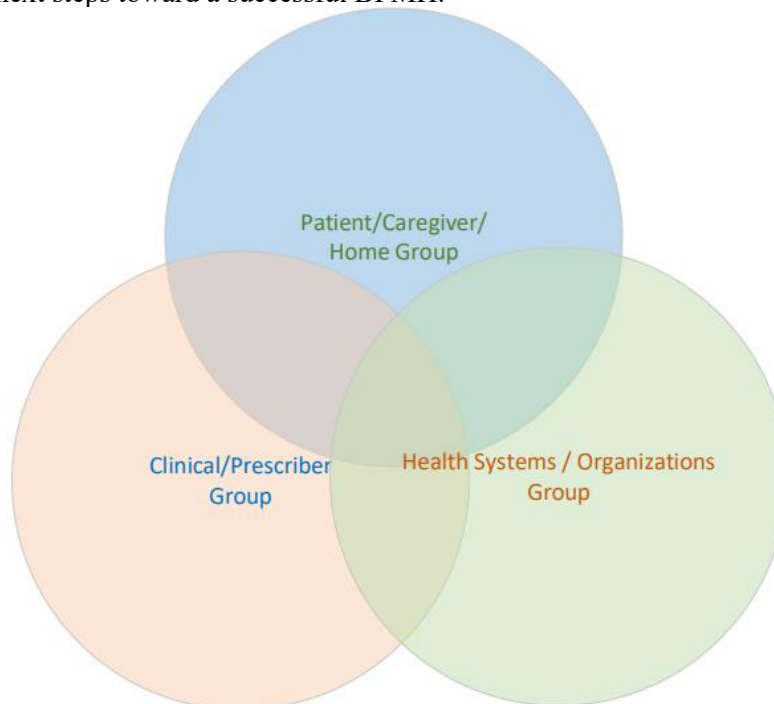
Figure 2: Breakout Session Groups/BPMH Perspectives

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[16] https://portal.ct.gov/-/media/OHS/Health-IT-Advisory-Council/MRP/Final-Recoms-Med-Rec.pdf

During the June 25th, 2020 virtual meeting, the committee was divided into three separate virtual breakout rooms aligned with the perspectives as indicated in Figure 2 (

Table 1 shows where each committee member participated). These groups discussed the drafted known issue statements, which were intended to fully represent the list of issues a patient or caregiver may encounter related to a lack of a best possible medication list.

Table 1: Committee Members Present in Each Breakout Session

Health Systems & Organizations	Clinicians & Prescribers	Patients & Home Health
Anne VanHaaren	*Nitu Kashyap (facilitator)*	*Sean Jeffery (facilitator)*
Elizabeth Taylor	Alejandro Gonzalez-Restrepo	Diana Mager
Jameson Reuter	Margherita Giuliano	Nate Rickles
Jennifer Osowiecki	Marie Renauer	Pat Carroll
Rod Marriott	Stacy Ward-Charlerie	
	Lesley Bennett	

The committee curated a list of twenty-two known issues, which can be summarized by the overarching known issue statement (known issue #17):

> *Accurate medication information is imperative for all patients and is particularly challenging for vulnerable populations or others who receive care in multiple settings and/or have complex treatment regimens.*

The known issues can be loosely organized into five categories: General; Patient-Centric; Provider/Caregiver-Centric; Technical; Policy and Workflow Related. The final category includes known issues that would require modifications to existing policy and workflows, and is unlikely to be solved by any system, however robust. The following sections describe the known issues at a high level, using summary language to keep the discussion concise and some known issues are combined into a single statement for simplicity[17].

General Known Issues

This subset of known issues has implications across all settings:

- There is no single accurate source of medications available to all those involved in a patient's care[issue 1]
- Medication information changes frequently[issue 3]
- There is a lack of clarity on which medications or supplements to include in a medication list[issue 4,8,16]

Patient-Centric Known Issues

This subset of known issues most significantly impacts the individual receiving care:

- Patients may not trust having their information shared[issue 12]
- Patients may not know when or how their medication was changed[issue 14]
- Accurate medication information is imperative to all patients[issue 17]

Provider-Centric Known Issues

This subset of known issues most significantly impacts the individuals involved in a patient's care:

- Patients and those involved in their care may not understand why a medication has been ordered[issue 2,7]
- Caregivers outside of an EHR may not have access to view real-time medication history[issue 10]

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[17]

Full List of Numbered Known Issue Statements

- Caregivers outside of an EHR may not have ability to contribute to a medication list[issue 11]

Technical Known Issues

This subset of known issues is most directly related to the limits present in existing systems, necessary roles and responsibilities for a system, or access to various types of relevant data:

- Medication histories may be presented differently in different systems[issue 5, 15]
- Changes to medication history do not occur in real-time[issue 9]
- EHRs lack access to real-time pharmacy data necessary for medication reconciliation[issue 20]
- Medication reconciliation requires defined roles and responsibilities[issue 21]

Policy and Workflow Related Known Issues

This subset of known issues is most directly related to the limits in existing policies, education, consent, or workflow specific issues that impact medication reconciliation:

- Accurate and timely medication reconciliation requires provider and caregiver education[issue 6]
- Users accessing a medication history may not have proper consent to view/edit information[issue 13]
- Consistently accepted workflows for medication reconciliation do not exist across all settings[issue 18]
- Automatic refill programs are not in sync with medication history changes[issue 19]
- Successful adherence to medication reconciliation processes is not measured/enforced[issue 22]

Business and Functional Requirements

From the full, comprehensive list of known issues, the committee drafted associated business and functional requirements, which are detailed below. Much like the known issues, the business and functional requirements have undergone much discussion and refinement. To best assess how to address the known issue statements, the following guidance was used for the business requirements:

Business requirements define the 'why' for the BPMH:

- How does the BPMH relate to the objectives, vision, and goals of the MRPC?
- These requirements provide the scope of the needs to be addressed, and
- These requirements are high-level and can be broadly defined.

And, similarly, for the functional requirements – which define the 'what' for the BPMH:

- What are the specific behaviors of the BPMH (actions, processes, data, interactions, users)?
- What are the specific steps the MRPC and its support will take to achieve the business requirements?
- These requirements are specific and well defined.

Keeping this in mind, the committee, with support from the Admin team, defined a preliminary set of business and functional requirements, to support each of the known issues. This list is long, and while some redundancies occur in the list, it is meant to be exhaustive: all business and related functional requirements are explicitly defined. The figures below are designed to help the reader understand the delineation between the known issues, business requirements, and associated functional requirements.

Taking Figure 2 as an example, the first business requirement for known issue 1 is:

> (1.1)   *A single list of all current medications for a patient shall be available[18]*

To support this business requirement, the MRPC recommends the following three functional requirements:

> (1.1.1) *The medication list may be static with periodic updates or it can be created when requested from component information systems,*
>
> (1.1.2) *Individuals with records on the medication list shall be uniquely identified, and*

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[18] Note that the numbering (1.1), (1.1.1), (1.1.2), etc. is consistent with the table containing the business and functional requirements, which can be found in Appendix C.

(1.1.3) Medication history shall be available to all physicians, providers, health systems, home health and pharmacists involved in a patient's care in accordance with governance rules, as well as to patients and caregivers.

It's important to note that the second two functional requirements *also* serve to support the second business requirement which is

(1.2) The medication list shall be accessible through a query and meet compliance requirements.

The remainder of this section shows these relationships for the full list of business and functional requirements associated with the known issues, as described above. Following the full list is a description of proposed next steps to best leverage this large body of work.

General Known Issues: Requirements

These business and functional requirements address the known issues most accurately described as having implications across all settings. The first known issue in this category:

- There is no single accurate source of medications available to all those involved in a patient's care[issue 1]

Has the associated business and functional requirements shown in Figure 3.

Business Requirements	Functional Requirements
A single list of all current medications for a patient shall be available	The medication list may be static with periodic updates *or* it can be created when requested from component information systems
The medication list shall be accessible through a query and meet compliance requirements	Individuals with records on the medication list shall be uniquely identified
	Medication history shall be available to all physicians, providers, health systems, home health and pharmacists involved in patient's care in accordance with governance rules, as well as to patients and caregivers
The medication list shall be in a standardized electronic format	Individuals accessing the medication list shall be validated using identity management (MPI *or* Provider Directory)
The medication list shall adhere to a standardized vocabulary or nomenclature	The medication list shall accept updates from Health Information Technology (HIT) systems
	The medication list shall interact with HIT systems
The medication list shall be compiled from multiple sources	Medication history disambiguation shall be facilitated through software and human readable interfaces (deduplication, modifications)
	Sources shall be vetted for accuracy of the information submitted

Figure 3: Known Issue 1 Business and Functional Requirements

The second known issue in this category:

- Medication information changes frequently[issue 3]

Has the associated business and functional requirements shown in Figure 4.

Business Requirements	Functional Requirements
The end user shall have access to the most current information at the time they are accessing the system	The system shall be capable of getting certain information and processing within a set amount of time (or near real-time) and send data out in near real-time from all potential locations of care
	The system shall be capable of flagging cancelled medications and changes to dose, route and instructions as well as new additions, therapy changes, changes in where prescriptions are filled and changes in order status (ordered, dispensed)
There shall be a longitudinal view of medications and changes	The system shall be capable of tracking changes
	The system shall reconcile ledger entries from all sources to associate a single related medication change event with the associated individual

Figure 4: Known Issue 3 Business and Functional Requirements

The third known issue in this category:

- There is a lack of clarity on which medications or supplements to include in a medication list[issue 4,8,16]

Has the associated business and functional requirements shown in Figure 5.

Business Requirements	Functional Requirements
There shall be education material promoted and provided to individuals about Medication History, including clarity of what is/is not included	In the first phase of implementation, Medication History shall include prescribed medications (other OTC medications, vitamins, dietary supplements, etc. will be included in future updates)
	Information about Medication History shall be available in understandable language and in the more common non-English languages spoken in Connecticut
Non-prescription substances being taken or used by a patient (OTC, supplements, herbals, etc.) contribute to a medication history and this information should be sought and added to the medication history	Telephone interpretation services shall be available for non-English speaking individuals not covered by the non-English language documentation available
	The BPMH shall have the capability to add, store and identify/tag OTC and supplements as a part of the medication list
	The medication history shall tag information about other substances to qualify the level of confidence in the accuracy of the information (e.g. confirmed by pt, occasional use, anecdotal 2nd party report, other qualifying parameters)
	When available, a standardized nomenclature such as NDC codes, RxNorm or other nomenclature shall be used
Users shall have access to the full array of prescription & non-prescription drugs through the BPMH	OTC medications, supplements and herbals entered by patients and caregivers shall be appropriately tagged to indicate the data entry source
	The BPMH shall have the capability to add, store and identify and tag OTC and supplements as a part of the medication list

Figure 5: Known Issue 4, 8, 16 Business and Functional Requirements

Patient-Centric Known Issues: Requirements

These business and functional requirements address the known issues which most significantly impact the individual receiving care. The first known issue in this category:

- Patients may not trust having their information shared[issue 12]

Has the associated business and functional requirements shown in Figure 6.

Business Requirement

	Functional Requirements

Patients (and/or their proxy, conservator, legal guardian, etc.) shall be informed of health information sharing intentions and possibilities, including medication information, and meaningful, informed consent shall be obtained from patients when appropriate

Consent rules/regulations shall be adhered to for all end-users/systems of the BPMH

The medication history solution shall leverage Connecticut's existing consent management system

Figure 6: Known Issue 12 Business and Functional Requirements

The second known issue in this category:

- Patients may not know when or how their medication was changed[issue 14]

Has the associated business and functional requirements shown in Figure 7.

Business Requirements   **Functional Requirements**

Medication history shall be presented in various levels and forms of healthcare literacy

The system shall be capable of alerting the patient to a medication change

The information shall be presented in common understandable terms

The information shall be presented in medical language

The information shall be presented in multiple languages

The information shall be presented visually

Alerts shall include details about who made changes and the details of the change

Patients shall be able to confirming they have seen the alert

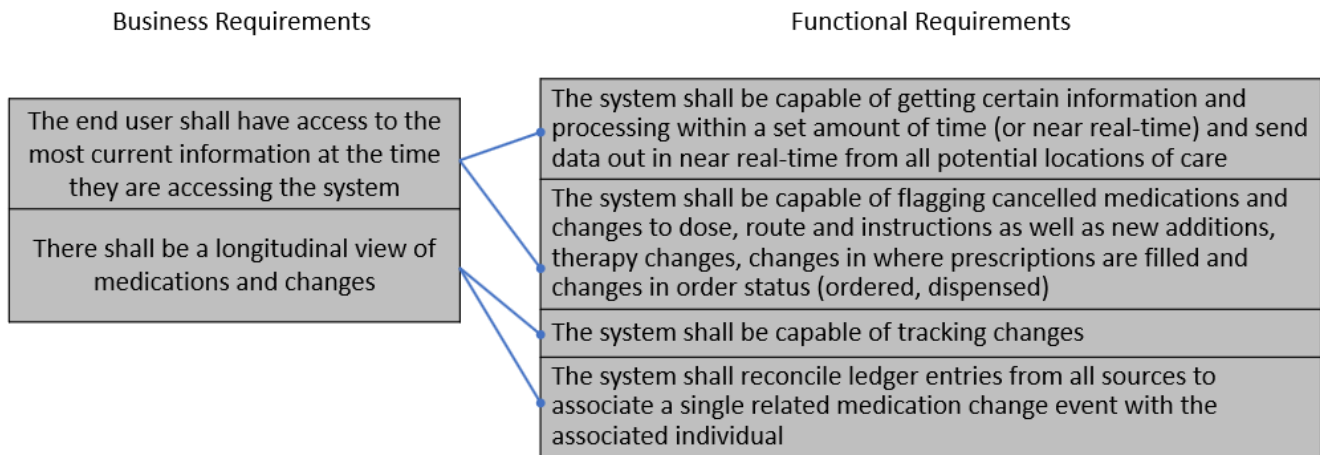Patients shall be able to incorporate changes into their own medication list via download or a mobile app

Figure 7: Known Issue 14 Business and Functional Requirements

The third known issue in this category:

- Accurate medication information is imperative to all patients[issue 17]

Has the associated business and functional requirements shown in Figure 8.

Business Requirements   **Functional Requirements**

Design of the Medication History shall consider complexities associated with a full spectrum of patient circumstances, including a multiplicity of care settings, complex treatment regimens, and the impacts of social determinants of health that can impact access or adherence to medication (e.g., poverty; homelessness)

The most current Medication History must be available to patients. In addition to digital access, the BPMH should be printable in an easy-to-read and logical format so that even if the patient cannot read/understand, other people or caregivers should be able to easily understand all information about current medications

For patients receiving care in multiple settings the Medication History shall reflect those settings and the associated providers, for purposes of medication reconciliation

Complex medication regimens shall be accurately represented and understood (such as different dosages at different times of day, tapering dosages, alternate day dosages, altered dosages for renal or other problems, chemotherapy dosages that may be weight or exposure based)
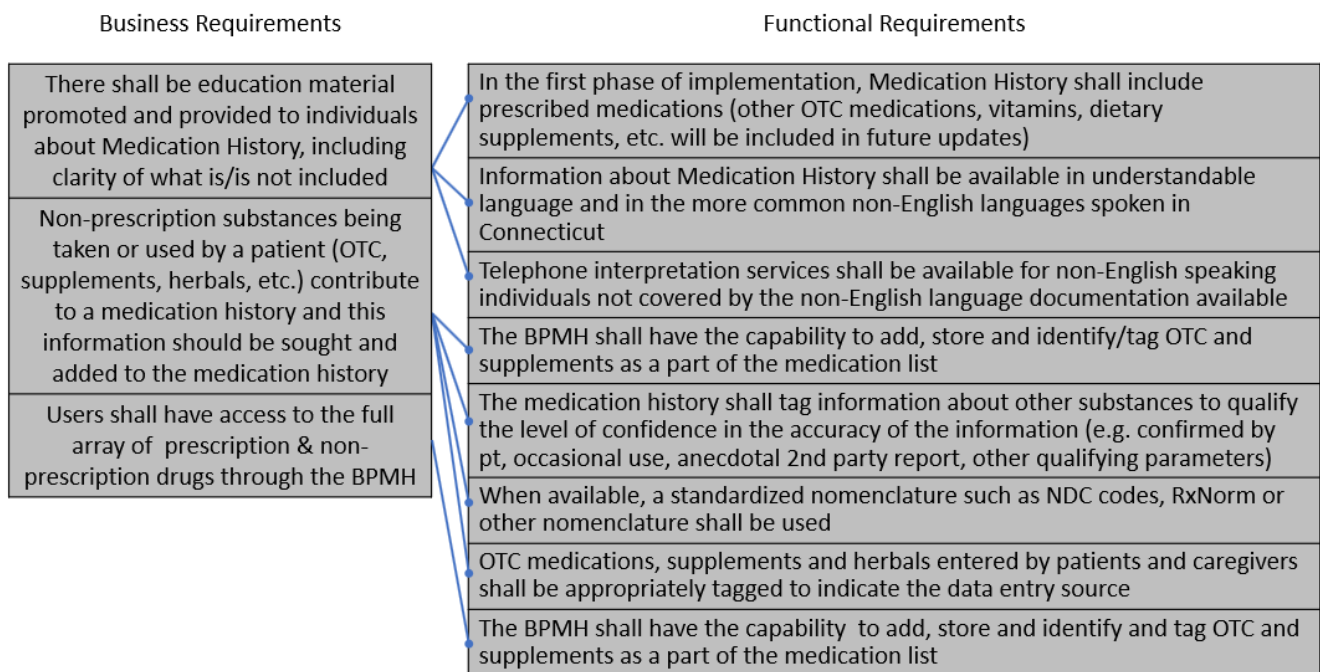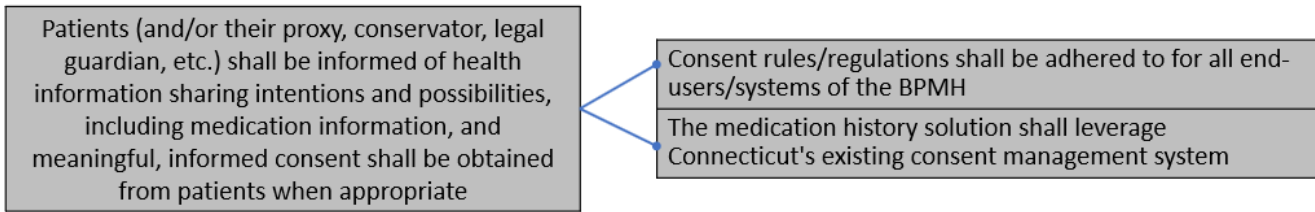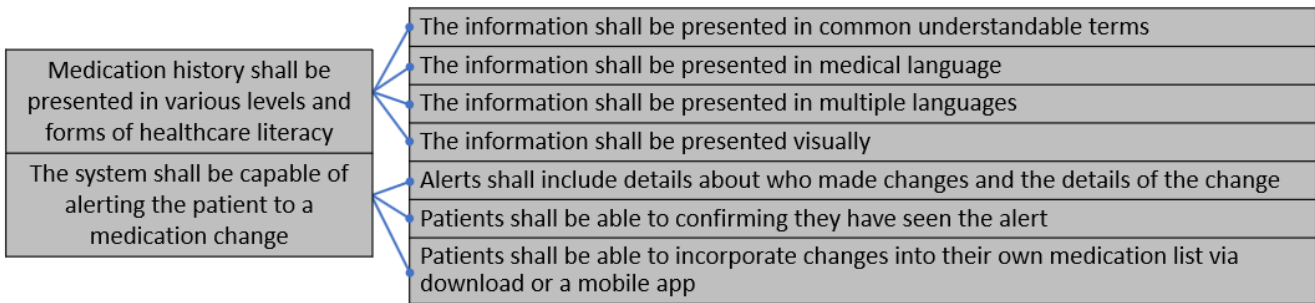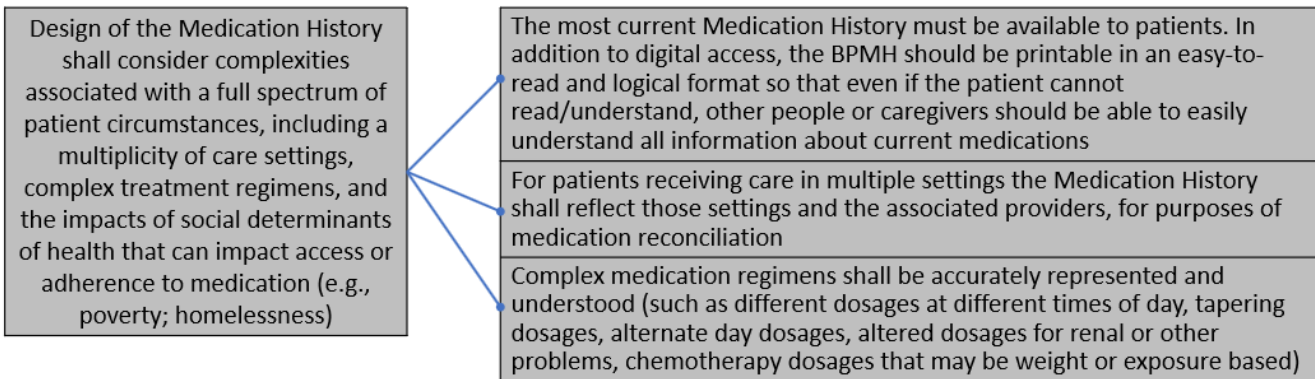
Figure 8: Known Issue 17 Business and Functional Requirements

Provider-Centric Known Issues: Requirements

These business and functional requirements address the known issues which most significantly impact the individuals involved in a patient's care. The first known issue in this category:

- Patients and those involved in their care may not understand why a medication has been ordered[issue 2,7]

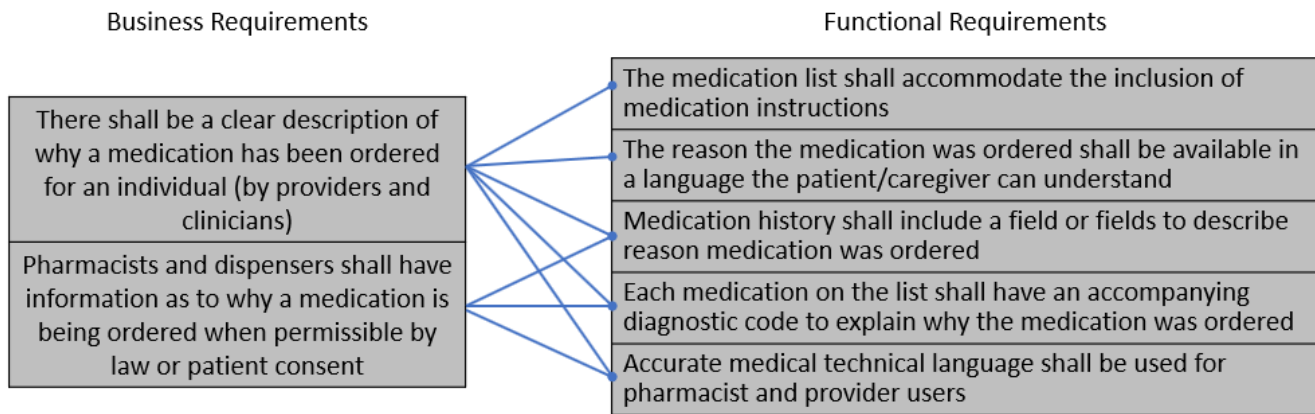Has the associated business and functional requirements shown in Figure 9.

Figure 9: Known Issue 2 and 7 Business and Functional Requirements

The second known issue in this category:

- Caregivers outside of an EHR may not have access to view real-time medication history[issue 10]

Has the associated business and functional requirements shown in Figure 10.
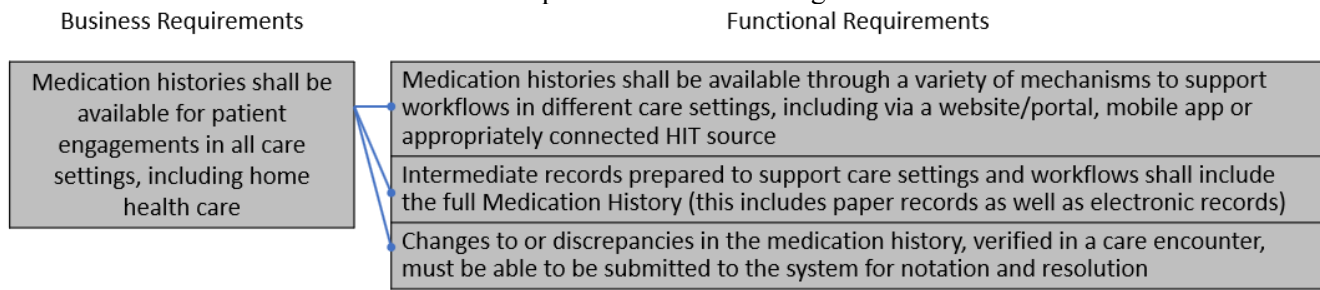

Figure 10: Known Issue 10 Business and Functional Requirements

The third known issue in this category:

- Caregivers outside of an EHR may not have ability to contribute to a medication list[issue 11]

Has the associated business and functional requirements shown in Figure 11.
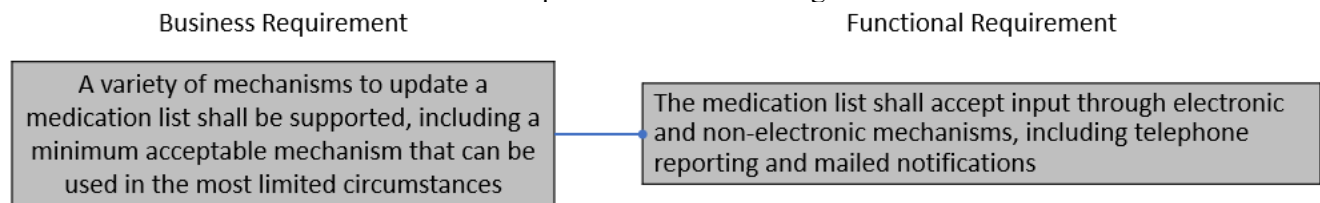
Figure 11: Known Issue 11 Business and Functional Requirements

Technical Known Issues: Requirements

These business and functional requirements address the known issues most directly related to the limits present in existing systems, necessary roles and responsibilities for a system, or access to various types of relevant data. The first known issue in this category:

- Medication histories may be presented differently in different systems[issue 5, 15]

Has the associated business and functional requirements shown in Figure 12.

Business Requirements	Functional Requirements
Medication history shall leverage available technology in all steps of the data stream	Prescribing information and reason medications were ordered/modified/canceled shall be captured from prescribers using EHR technology in all settings (incl. modifications for dosage/pause/etc in hospital)
	Prescription information including date filled and date dispensed shall be captured from pharmacy systems data (including delivery by pharmacy)
BPMH data shall be made available through standard APIs to mobile technology vendors	The pharmacy shall update medication history if a prescription is returned to stock
	The prescriber shall update medication history with cancelled prescription information, and the pharmacy shall provide acknowledgement of cancellation
The system shall have the capability to dynamically query source systems to present the most up to date information	Data shall be made available utilizing ONC standards for API development for consumer apps (such as FHIR 4.0 and USCDI – updated as required)
	User centered design shall be incorporated into the development of the GUI
	Upon accessing a medication history from an EHR or mobile app, the system shall present a dynamically updated BPMH in near real-time
Medication history information shall be available in a vendor agnostic format, using standards to support subsequent parsing for vendor system compatibility	Information from vendor systems shall follow an agnostic format used by the Medication history solution (with standards to support parsing as needed)
	Medication history information shall be available through a portal
	Medication history individual reports shall be available to a variety of output mechanisms (such as fax or e-mail) which can be directed by an authorized user with established consent to share the information with a recipient

Figure 12: Known Issue 5 and 15 Business and Functional Requirements

The second known issue in this category:

- Changes to medication history do not occur in real-time[issue 9]

Has the associated business and functional requirements shown in Figure 13.

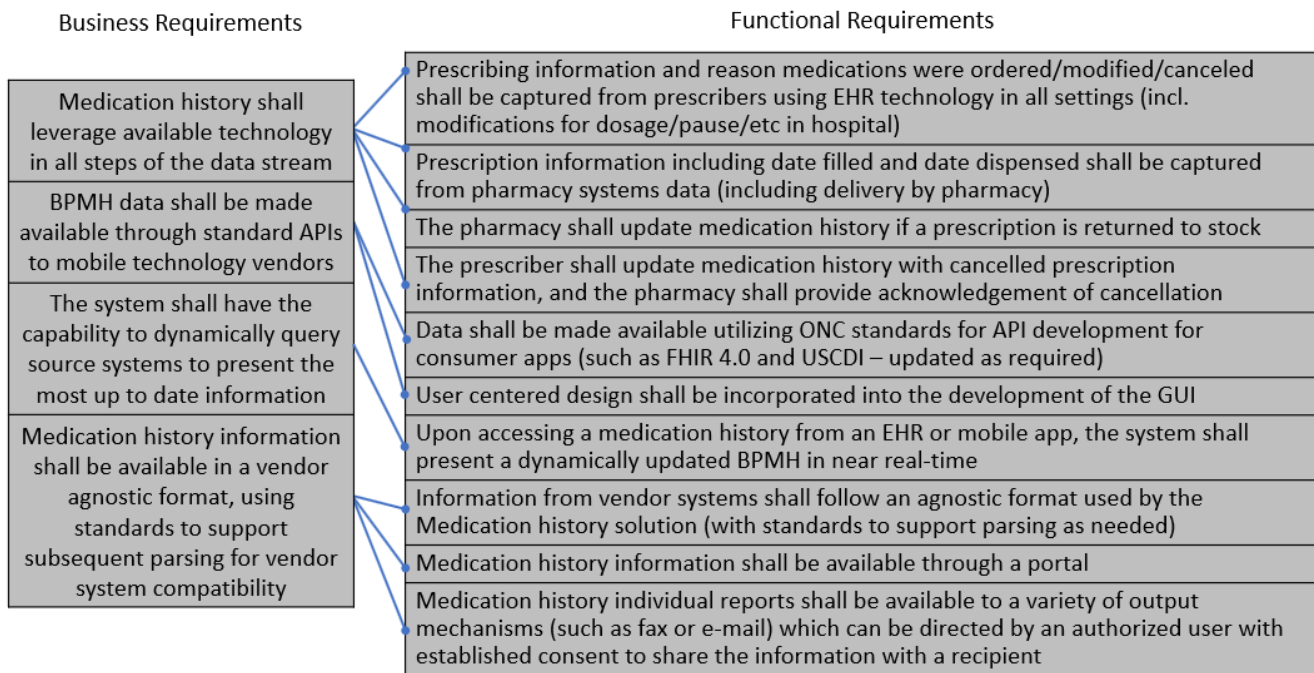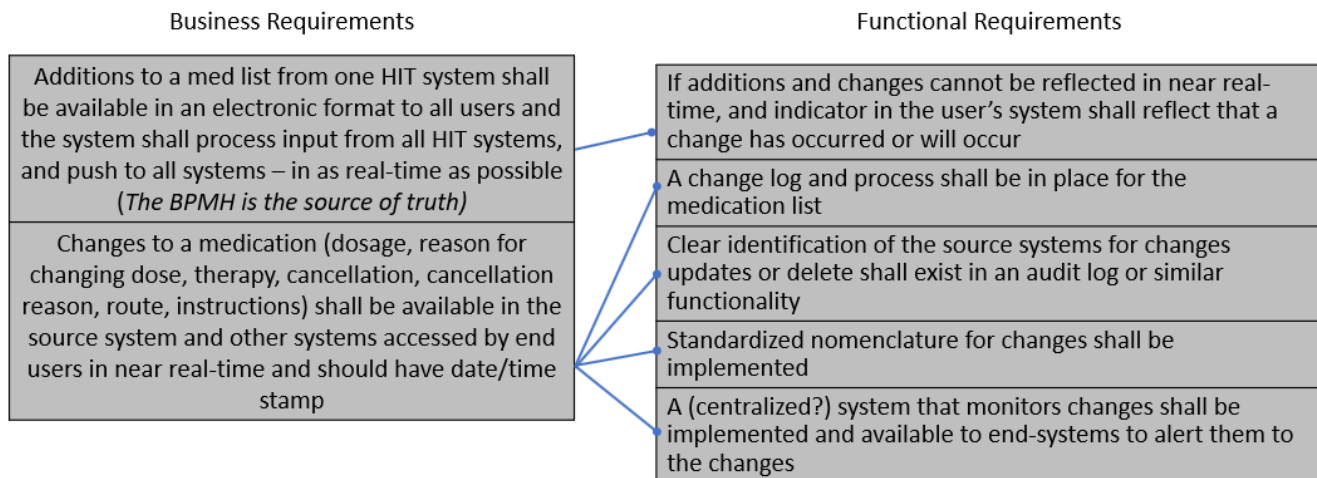| Business Requirements	Functional Requirements
Additions to a med list from one HIT system shall be available in an electronic format to all users and the system shall process input from all HIT systems, and push to all systems – in as real-time as possible (*The BPMH is the source of truth*)	If additions and changes cannot be reflected in near real-time, and indicator in the user's system shall reflect that a change has occurred or will occur
	A change log and process shall be in place for the medication list
Changes to a medication (dosage, reason for changing dose, therapy, cancellation, cancellation reason, route, instructions) shall be available in the source system and other systems accessed by end users in near real-time and should have date/time stamp	Clear identification of the source systems for changes updates or delete shall exist in an audit log or similar functionality
	Standardized nomenclature for changes shall be implemented
	A (centralized?) system that monitors changes shall be implemented and available to end-systems to alert them to the changes

Figure 13: Known Issue 9 Business and Functional Requirements

The third known issue in this category:

- EHRs lack access to real-time pharmacy data necessary for medication reconciliation[issue 20]

Has the associated business and functional requirements shown in Figure 14.

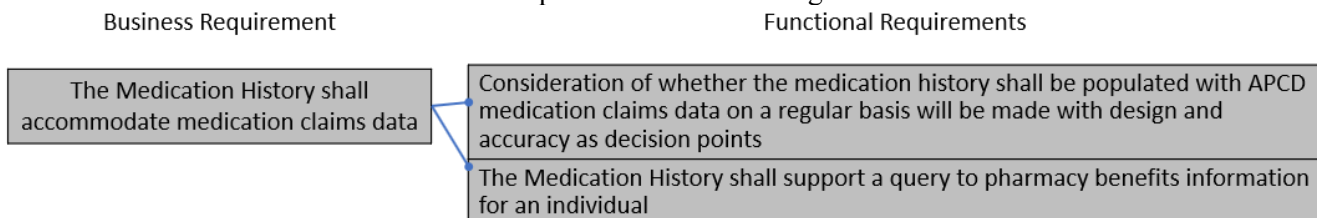| Business Requirement	Functional Requirements
The Medication History shall accommodate medication claims data	Consideration of whether the medication history shall be populated with APCD medication claims data on a regular basis will be made with design and accuracy as decision points
	The Medication History shall support a query to pharmacy benefits information for an individual

Figure 14: Known Issue 20 Business and Functional Requirements

The fourth known issue in this category:
- Medication reconciliation requires defined roles and responsibilities[issue 21]

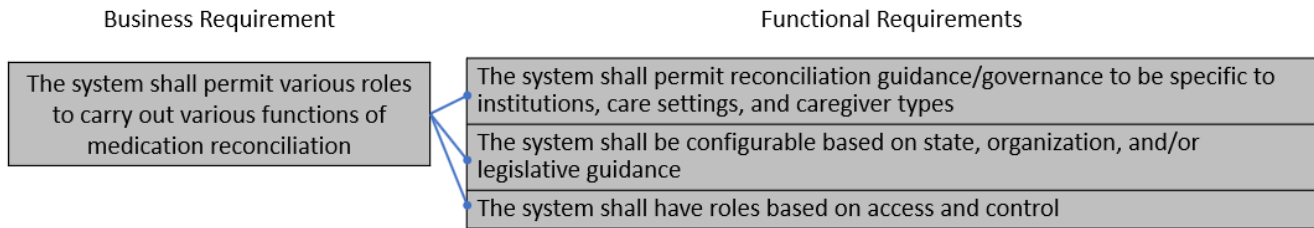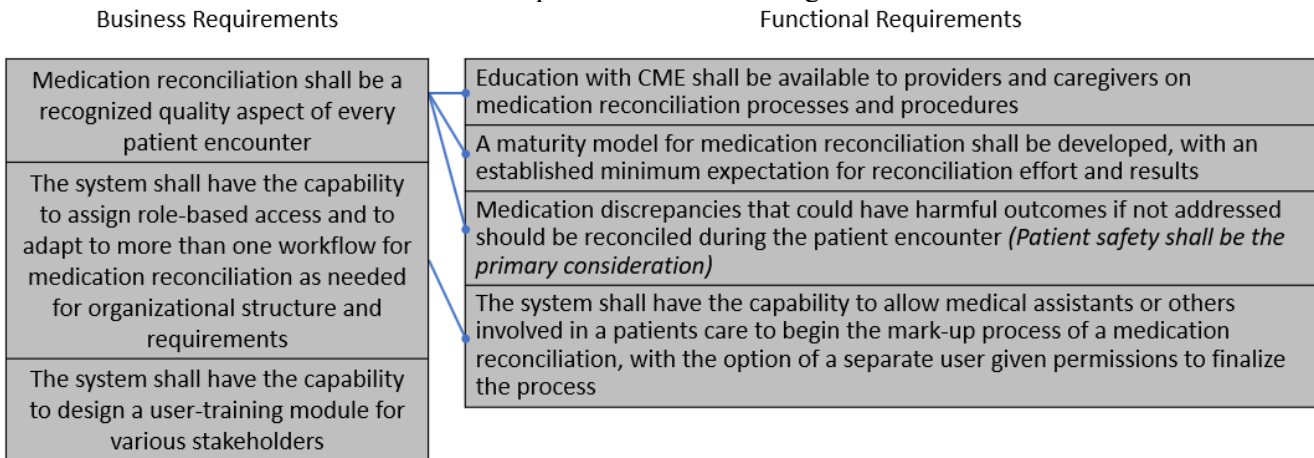Has the associated business and functional requirements shown in Figure 15.

Business Requirement	Functional Requirements
The system shall permit various roles to carry out various functions of medication reconciliation	The system shall permit reconciliation guidance/governance to be specific to institutions, care settings, and caregiver types
	The system shall be configurable based on state, organization, and/or legislative guidance
	The system shall have roles based on access and control

Figure 15: Known Issue 21 Business and Functional Requirements

Policy and Workflow Related Known Issues: Requirements

These business and functional requirements address the known issues most directly related to the limits in existing policies, education, consent, or workflow specific issues that impact medication reconciliation. The first known issue in this category:

- Accurate and timely medication reconciliation requires provider and caregiver education [issue 6]

Medication reconciliation within a healthcare setting is not a simple process and can vary depending on the size/type of an organization, staffing qualifications and availability, and the specific technology deployed at a given setting. In addition, these variables are often changing in each setting. Educating providers and staff regarding best practices for their situation, is an ongoing problem – which creates a challenge to providing a systematic approach to medication reconciliation.

Has the associated business and functional requirements shown in Figure 16.

Business Requirements	Functional Requirements
Medication reconciliation shall be a recognized quality aspect of every patient encounter	Education with CME shall be available to providers and caregivers on medication reconciliation processes and procedures
The system shall have the capability to assign role-based access and to adapt to more than one workflow for medication reconciliation as needed for organizational structure and requirements	A maturity model for medication reconciliation shall be developed, with an established minimum expectation for reconciliation effort and results
	Medication discrepancies that could have harmful outcomes if not addressed should be reconciled during the patient encounter *(Patient safety shall be the primary consideration)*
The system shall have the capability to design a user-training module for various stakeholders	The system shall have the capability to allow medical assistants or others involved in a patients care to begin the mark-up process of a medication reconciliation, with the option of a separate user given permissions to finalize the process

Figure 16: Known Issue 6 Business and Functional Requirements

The second known issue in this category:
- Users accessing a medication history may not have proper consent to view/edit information[issue 13]

Has the associated business and functional requirements shown in Figure 17.
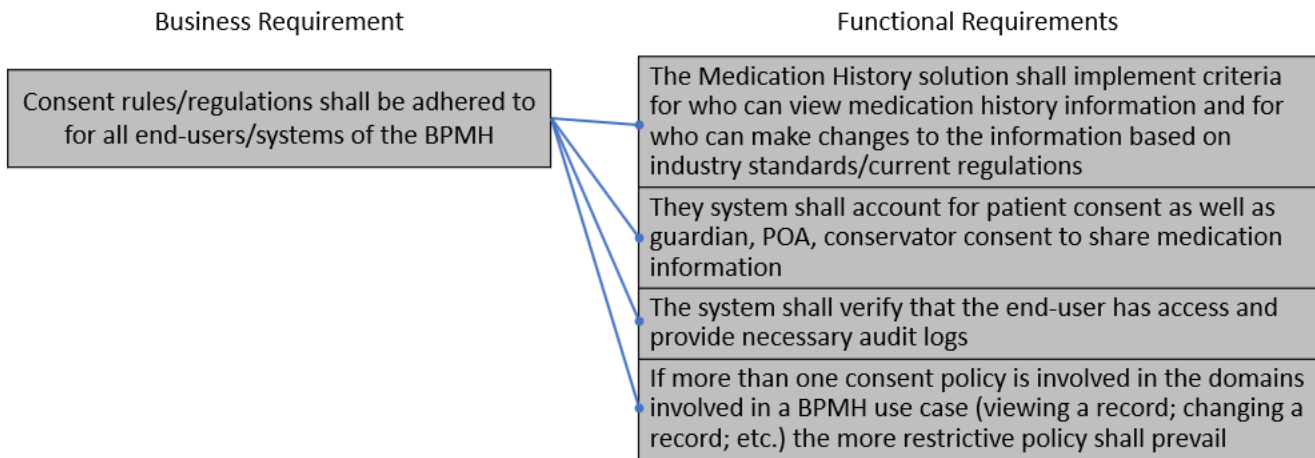
Figure 17: Known Issue 13 Business and Functional Requirements

The third known issue in this category:

- Consistently accepted workflows for medication reconciliation do not exist across all settings[issue 18]

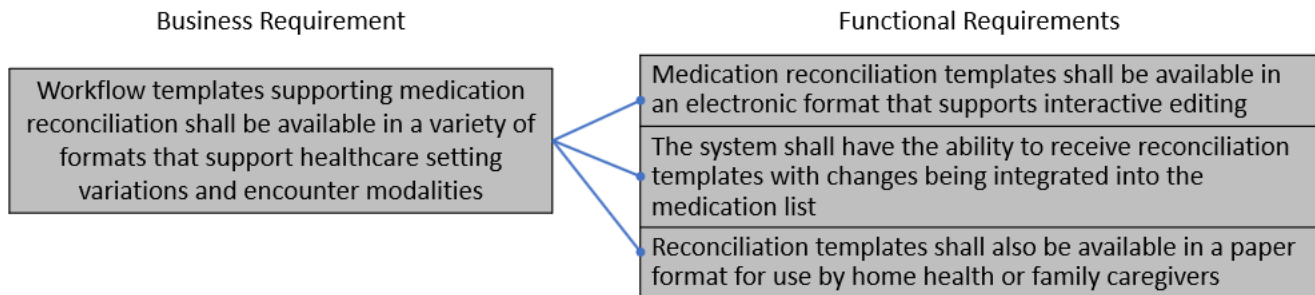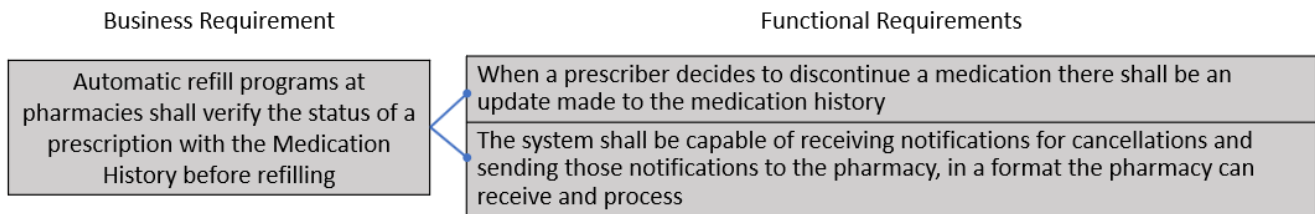Has the associated business and functional requirements shown in Figure 18.

Figure 18: Known Issue 18 Business and Functional Requirements

The fourth known issue in this category:

- Automatic refill programs are not in sync with medication history changes[issue 19]

Has the associated business and functional requirements shown in Figure 19.

Figure 19: Known Issue 19 Business and Functional Requirements

The fifth known issue in this category:

- Successful adherence to medication reconciliation processes is not measured/enforced[issue 22]

Has the associated business and functional requirements shown in Figure 20.
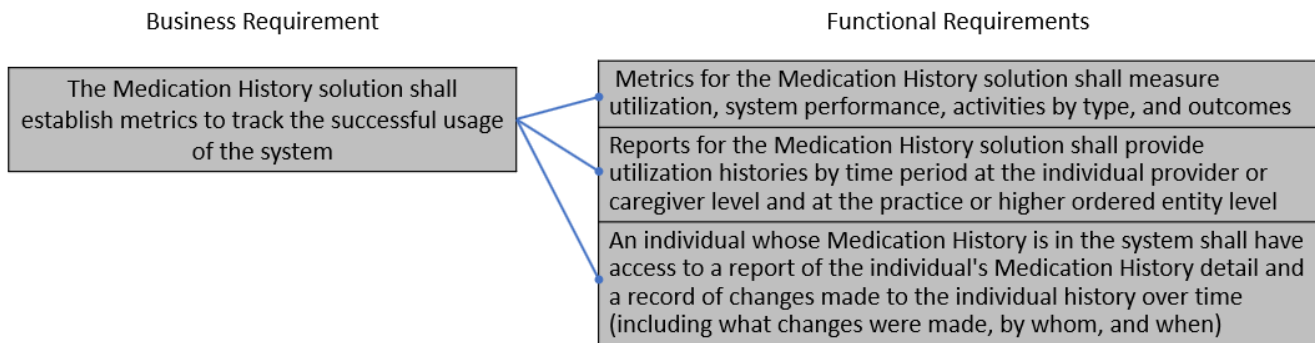
Figure 20: Known Issue 22 Business and Functional Requirements

Next Steps and Closing Thoughts

The committee recommends using the known issues, and business and functional requirements described in this report to inform the decision-making process around the possible procurement of a best possible medication history solution for the state of Connecticut. While these requirements are meant to be complete, the list does not include any recommended technical requirements, as those are out of scope for the MRPC.

Full List of Numbered Known Issue Statements

1. There is no single accurate source and list of medications concurrently available to all the physicians, providers, health systems, pharmacists, and patients (and their designated caregivers), involved in a patient's care

2. Patients may not have knowledge of or fully comprehend why they are taking a particular medication, and/or providers may not understand why a medication has been ordered for their patient

3. Medication information can and does change frequently, with changes from different sources and perspectives, making it difficult to establish and maintain a single source of medication history

4. Patients are unaware of what should be included in a medication list such as OTC medications, vitamins and dietary supplements, creams and ointments

5. The use of technology to improve medication history, including EHRs, smartphone apps, and repositories of information, presents new problems of interoperability and data currency (user adaptation to new technologies is a related additional problem)

6. Medication reconciliation is not a simple process and provider education is an ongoing problem – systematic approaches to medication reconciliation can vary depending on the size/type of organization, staffing, and technology capabilities

7. Pharmacists/dispensers are not always aware of the condition being treated by a prescription

8. Information on OTC, supplements and herbals does not originate in provider or prescriber systems and is challenging to capture from patients and caregivers

9. Additions and changes to medication history do not occur in real-time from all sources

10. Home care nurses are not provided with accurate real-time medication histories prior to engaging with the patient, nor do the paper records they prepare include the full medication history

11. Family caregivers may not have access or mechanisms to contribute information to a medication list

12. Patients may not be adequately informed or trust having their information shared, including through technology

13. People accessing a medication history may not have proper consent to view the information or to make changes to the information

14. Patients may not know when their medication was changed or who might have made the changes

15. Medication histories may be presented differently in different systems or settings, creating challenges in interpreting or understanding the information
16. Despite front line responsibility for prescribing, coordinating, and reconciliation patients' medications, primary care providers often lack complete information on the full array of medications that a patient is using (e.g. Rx, OTC, supplements)
17. Accurate medication information is particularly challenging for vulnerable populations who receive care in multiple settings and have complex treatment regimens
18. There is a need for consistently accepted workflows that adapt medication reconciliation to various sizes and types of healthcare settings, encounters (in person, remote), and to the most effective time during different types of encounters
19. Automatic refill programs at pharmacies may not be in sync with medication history changes or provider decisions to discontinue a medication
20. Some EHRs lack access to real-time pharmacy benefits data and/or pharmacy claims data to be used in medication reconciliation
21. Institutions do not define the roles and responsibilities necessary to perform medication reconciliation
22. No metrics exist for the measurement of adherence to medication reconciliation processes

Table of Known Issues, Business Requirements and Functional Requirements

1	*There is no single accurate source and list of medications concurrently available to all the physicians, providers, health systems, pharmacists, and patients (and their designated caregivers), involved in a patient's care.*		
	1.1	**A single list of current medications for a patient shall be available**	**business**
	1.1.1	The medication list may be static with periodic updates or it can be created when requested from component information systems	functional
	1.1.2	Individuals with records on the medication list shall be uniquely identified	functional
	1.1.3	Medication history shall be available to all physicians, providers, health systems, home health and pharmacists involved in patient's care in accordance with governance rules, as well as to patients and caregivers	functional
	1.2	**The medication list shall be accessible through a query and meet compliance requirements**	**business**
	1.2.1	See 1.1.2 (Individuals with records on the medication list shall be uniquely identified)	functional
	1.2.2	See 1.1.3 (Medication history shall be available to all physicians, providers, health systems, home health and pharmacists involved in patient's care in accordance with governance rules, as well as to patients and caregivers)	functional
	1.2.3	Individuals accessing the medication list shall be validated using identity management (MPI or Provider Directory)	functional
	1.3	**The medication list shall be in a standardized electronic format**	**business**
	1.3.1	The medication list shall accept updates from HIT systems	functional
	1.3.2	The medication list shall interact with HIT systems	functional
	1.4	**The medication list shall adhere to a standardized vocabulary or nomenclature**	**business**
	1.5	**The medication list shall be compiled from multiple sources**	**business**
	1.5.1	Medication history disambiguation shall be facilitated through software and human readable interfaces (deduplication, modifications)	functional
	1.5.2	Sources shall be vetted for accuracy of the information submitted	functional

2	*Patients may not have knowledge of or fully comprehend why they are taking a particular medication, and/or providers may not understand why a medication has been ordered for their patient*		
	2.1	**There shall be a clear description of why a medication has been ordered for an individual (by providers and clinicians)**	**business**
	2.1.1	Medication history shall include a *field* or fields to describe reason medication was ordered	functional
	2.1.2	Each medication on the list shall have an accompanying diagnostic code to explain why the medication was ordered	functional
	2.1.3	The medication list shall accommodate the inclusion of medication instructions	functional
	2.1.4	The reason the medication was ordered shall be available in a language the patient/caregiver can understand	functional
	2.1.5	Accurate medical technical language shall be used for pharmacist and provider users	functional

3	*Medication information can and does change frequently, with changes from different sources and perspectives, making it difficult to establish and maintain a single source of medication history.*		
	3.1	**The end user shall have access to the most current information at the time they are accessing the system**	**business**
	3.1.1	The system shall be capable of getting certain information and processing within a set amount of time (or near real-time) and send data out in near real-time from all potential locations of care	functional
	3.1.2	The system shall be capable of flagging cancelled medications and changes to dose, route and instructions as well as new additions, therapy changes, changes in where prescriptions are filled and changes in order status (ordered, dispensed)	functional
	3.2	**There shall be a longitudinal view of medications and changes**	**business**

	3.2.1	The system shall be capable of tracking changes	functional
	3.2.2	The system shall reconcile ledger entries from all sources to associate a single related medication change event with the associated individual	functional

		Patients are unaware of what should be included in a medication list such as OTC medications, vitamins and dietary supplements, creams and ointments.	
4	**4.1**	**There shall be education material promoted and provided to individuals about Medication History, including clarity of what is included in Medication History and what is not included**	**business**
	4.1.1	In the first phase of implementation, Medication History shall include prescribed medications (other OTC medications, vitamins, dietary supplements, etc. will be included in future updates)	functional
	4.1.2	Information about Medication History shall be available in understandable language and in the more common non-English languages spoken in Connecticut	functional
	4.1.3	Telephone interpretation services shall be available for non-English speaking individuals not covered by the non-English language documentation available	functional

		The use of technology to improve medication history, including EHRs, smartphone apps, and repositories of information, presents new problems of interoperability and data currency (user adaptation to new technologies is a related additional problem).	
5	**5.1**	**Medication history shall leverage available technology in all steps of the data stream to create and maintain the information in medication history**	**business**
	5.1.1	Prescribing information and reason medications were ordered/modified/ canceled shall be captured from prescribers using EHR technology (regardless of setting – including modifications for dosage/pause/etc. in hospital)	functional
	5.1.2	Prescription information including date filled and date dispensed shall be captured from pharmacy systems data (including delivery by pharmacy)	functional
	5.1.3	The pharmacy shall update medication history if a prescription is not picked up and is returned to stock	functional
	5.1.4	The prescriber shall update medication history with cancelled prescription information, and the pharmacy shall provide acknowledgement of cancellation	functional
	5.2	**BPMH data shall be made available through standard APIs to mobile technology vendors**	**business**
	5.2.1	Data shall be made available utilizing ONC standards for API development for consumer apps (such as FHIR 4.0 and USCDI – updated as required)	functional
	5.2.2	User centered design shall be incorporated into the development of the GUI where possible	functional
	5.3	**The system shall have the capability to dynamically query source systems to obtain and present the most up to date information**	**business**
	5.3.1	Upon accessing a medication history from an EHR or mobile app, the system shall present a dynamically updated BPMH in near real-time	functional

		Medication reconciliation is not a simple process and provider education is an ongoing problem - systematic approaches to medication reconciliation can vary depending on the size/type of organization, staffing, and technology capabilities	
6	**6.1**	**Medication reconciliation shall be a recognized quality aspect of every patient encounter**	**business**
	6.1.1	Education with CME shall be available to providers and caregivers on medication reconciliation processes and procedures	functional
	6.1.2	A maturity model for medication reconciliation shall be developed, with an established minimum expectation for reconciliation effort and results	functional
	6.1.3	Medication discrepancies that could have harmful outcomes if not addressed should be reconciled during the patient encounter (*Patient safety shall be the primary consideration*)	functional

	6.2	**The system shall have the capability to assign role-based access and to adapt to more than one workflow for medication reconciliation as needed for organizational structure and requirements**	**business**
	6.2.1	The system shall have the capability to allow medical assistants or others involved in a patient care to begin the mark-up process of a medication reconciliation, with the option of a separate user given permissions to finalize the process	functional
	6.3	**The system shall have the capability to design a user-training module for various stakeholders**	**business**

	Pharmacists/dispensers are not always aware of the condition being treated by a prescription		
7	**7.1**	**Pharmacists and dispensers shall have information as to why a medication is being ordered when permissible by law or patient consent**	**business**
	7.1.1	See 2.1.5 (Accurate medical technical language shall be used for pharmacist and provider users)	functional
	7.1.2	See 2.1.1 (Medication history shall include a field or fields to describe the reason(s) medication was ordered)	functional
	7.1.3	See 2.1.2 (Each medication on the list shall have a field for an accompanying standardized diagnostic code or meta-data to explain why the medication was ordered)	functional

	Information on OTC, supplements, and herbals does not originate in provider or prescriber systems and is challenging to capture from patients and caregivers		
8	**8.1**	**Other non-prescription substances being taken or used by a patient (OTC, supplements, herbals, etc.) contribute to a medication history and this information should be sought and added to the history**	**business**
	8.1.1	The BPMH shall have the capability to add, store and identify/tag OTC and supplements as a part of the medication list	functional
	8.1.2	The medication history shall tag information about other substances to qualify the level of confidence in the accuracy of the information (e.g. confirmed by pt., occasional use, anecdotal 2nd party report, other qualifying parameters)	functional
	8.1.3	When available, a standardized nomenclature such as NDC codes, RxNorm or other nomenclature shall be used	functional
	8.1.4	OTC medications, supplements and herbals entered by patients and caregivers shall be appropriately tagged to indicate the data entry source	functional

	Additions and changes to medication history do not occur in real-time from all sources		
9	**9.1**	**Additions to a med list from one HIT system shall be available in an electronic format to all users and the system shall process input from all HIT systems, and push to all systems – in as real-time as possible (*The BPMH is the source of truth*)**	**business**
	9.1.1	If additions and changes cannot be reflected in near real-time, and indicator in the user's system shall reflect that a change has occurred or will occur	functional
	9.2	**Changes to a medication (dosage, reason for changing dose, therapy, cancellation, cancellation reason, route, instructions) shall be available in the source system and other systems accessed by end users in near real-time and should have date/time stamp**	**business**
	9.2.1	A change log and process shall be in place for the medication list	functional
	9.2.2	Clear identification of the source systems for changes updates or delete shall exist in an audit log or similar functionality	functional
	9.2.3	Standardized nomenclature for changes shall be implemented	functional
	9.2.4	A (centralized?) system that monitors changes shall be implemented and available to end-systems to alert them to the changes	functional

	9.2.5	The best possible medication history should be capable of capturing discontinuation reason	functional

		Home care nurses are not provided with accurate real-time medication histories prior to engaging with the patient, nor do the paper records they prepare include the full medication history.	
10	**10.1**	**Medication histories shall be available in advance of patient engagements in all care settings, including home health care**	**business**
	10.1.1	Medication histories shall be available through a variety of mechanisms to support workflows in different care settings, including via a website/portal, mobile app or appropriately connected HIT source	functional
	10.1.2	Intermediate records prepared to support care settings and workflows shall include the full Medication History (this includes paper records as well as electronic records)	functional
	10.1.3	Changes to or discrepancies in the medication history, verified in a care encounter, must be able to be submitted to the system for notation and resolution	functional

		Family caregivers may not have access or mechanisms to contribute information to a medication list.	
11	**11.1**	**A variety of mechanisms to update a medication list shall be supported, including a minimum acceptable mechanism that can be used in the most limited circumstances**	**business**
	11.1.1	The medication list shall accept input through electronic and non-electronic mechanisms, including telephone reporting and mailed notifications	functional

		Patients may not be adequately informed or trust having their information shared, including through technology.	
12	**12.1**	**Patients (and/or their proxy, conservator, legal guardian, etc.) shall be informed of health information sharing intentions and possibilities, including medication information, and meaningful, informed consent shall be obtained from patients when appropriate**	**business**
	12.1.1	Consent rules/regulations shall be adhered to for all end-users/systems of the BPMH	functional
	12.1.2	The medication history solution shall leverage Connecticut's existing consent management system	functional

		People accessing a Medication History may not have proper consent to view the information or to make changes to the information.	
13	**13.1**	**Consent rules/regulations shall be adhered to for all end-users/systems of the BPMH**	**business**
	13.1.1	The Medication History solution shall implement criteria for who can view medication history information and for who can make changes to the information based on industry standards/current regulations	functional
	13.1.2	They system shall account for patient consent as well as guardian, POA, conservator consent to share medication information	functional
	13.1.3	The system shall verify that the end-user has access and provide necessary audit logs	functional
	13.1.4	If more than one consent policy is involved in the domains involved in a BPMH use case (viewing a record; changing a record; etc.) the more restrictive policy shall prevail	functional

		Patients may not know when their medication was changed or who might have made the changes.	
14	**14.1**	**Medication history shall be presented in various levels and forms of healthcare literacy**	**business**
	14.1.1	The information shall be presented in common understandable terms	functional
	14.1.2	The information shall be presented in medical language	functional
	14.1.3	The information shall be presented in multiple languages	functional
	14.1.4	The information shall be presented visually	functional
	14.2	**The system shall be capable of alerting the patient to a medication change**	**business**

	14.2.1	Alerts shall include details about who made changes and the details of the change	functional
	14.2.2	Patients shall be able to confirm they have seen the alert	functional
	14.2.3	Patients shall be able to incorporate changes into their own medication list via download or a mobile app	functional

15	*Medication histories may be presented differently in different systems or settings, creating challenges in interpreting or understanding the information.*		
	15.1	**Medication History information shall be available in a vendor agnostic format, using standards to support subsequent parsing by vendor systems for compatibility with their systems**	**business**
	15.1.1	Medication History information submitted from vendor systems shall follow an agnostic format used by the Medication History solution, using standards to support parsing by the solution system	functional
	15.1.2	Medication History information shall be available through a portal	functional
	15.1.3	Medication History individual reports shall be available to a variety of output mechanisms (such as fax or e-mail) which can be directed by an authorized user with established consent to share the information with a recipient	functional
	15.1.4	The Medication History solution shall support multiple languages as more commonly used in the state of Connecticut, and shall be aligned with Section 508, as revised	functional

16	*Despite front line responsibility for prescribing, coordinating, and reconciling patients' medications, primary care providers often lack complete information on the full array of medications that a patient is using (e.g. Rx, OTC, supplements).*		
	16.1	**Users shall have access to the full array of prescription & non-prescription drugs through the BPMH**	**business**
	16.1.1	The BPMH shall have the capability to add, store and identify and tag OTC and supplements as a part of the medication list	functional

17	*Accurate medication information is particularly challenging for vulnerable populations who receive care in multiple settings and have complex treatment regimens.*		
	17.1	**Design of the Medication History shall consider complexities associated with a full spectrum of patient circumstances, including a multiplicity of care settings, complex treatment regimens, and the impacts of social determinants of health that can impact access or adherence to medication (e.g., poverty; homelessness)**	**business**
	17.1.1	The most current Medication History must be available to patients. In addition to digital access, the BPMH should be printable in an easy-to-read and logical format so that even if the patient cannot read/understand, other people or caregivers should be able to easily understand all information about current medications	functional
	17.1.2	For patients receiving care in multiple settings the Medication History shall reflect those settings and the associated providers, for purposes of medication reconciliation	functional
	17.1.3	Complex medication regimens shall be accurately represented and understood (such as different dosages at different times of day, tapering dosages, alternate day dosages, altered dosages for renal or other problems, chemotherapy dosages that may be weight or exposure based)	functional

18	*There is a need for consistently accepted workflows that adapt medication reconciliation to various sizes and types of healthcare settings, encounters (in person, remote), and to the most effective time during different types of encounters.*		
	18.1	**Workflow templates supporting medication reconciliation shall be available in a variety of formats that support healthcare setting variations and encounter modalities**	**business**
	18.1.1	Medication reconciliation templates shall be available in an electronic format that supports interactive editing	functional

| | 18.1.2 | The system shall have the ability to receive reconciliation templates with changes being integrated into the medication list | functional |
| | 18.1.3 | Reconciliation templates shall also be available in a paper format for use by home health or family caregivers | functional |

		Automatic refill programs at pharmacies may not be in sync with Medication History changes or provider decisions to discontinue a medication.	
19	**19.1**	**Automatic refill programs at pharmacies shall verify the status of a prescription with the Medication History before refilling**	**business**
	19.1.1	When a prescriber decides to discontinue a medication there shall be an update made to the medication history	functional
	19.1.2	The system shall be capable of receiving notifications for cancellations and sending those notifications to the pharmacy, in a format the pharmacy can receive and process	functional

		Some EHRs lack access to real-time pharmacy benefits data and/or pharmacy claims data to be used in medication reconciliation.	
20	**20.1**	**The Medication History shall accommodate medication claims data**	**business**
	20.1.1	Consideration of whether the medication history shall be populated with APCD medication claims data on a regular basis will be made with design and accuracy as decision points	functional
	20.1.2	The Medication History shall support a query to pharmacy benefits information for an individual	functional

		Institutions do not define the roles and responsibilities necessary to perform medication reconciliation	
21	**21.1**	**The system shall permit various roles to carry out various functions of medication reconciliation**	**business**
	21.1.1	The system shall permit reconciliation guidance/governance to be specific to institutions, care settings, and caregiver types	functional
	21.1.2	The system shall be configurable based on state, organization, and/or legislative guidance	functional
	21.1.3	The system shall have roles based on access and control	functional

		No metrics exist for the measurement of adherence to medication reconciliation processes.	
22	**22.1**	**The Medication History solution shall establish metrics to track the successful usage of the system**	**business**
	22.1.1	Metrics for the Medication History solution shall measure utilization, system performance, activities by type, and outcomes	functional
	22.1.2	Reports for the Medication History solution shall provide utilization histories by time period at the individual provider or caregiver level and at the practice or higher ordered entity level	functional
	22.1.3	An individual whose Medication History is in the system shall have access to a report of the individual's Medication History detail and a record of changes made to the individual history over time (including what changes were made, by whom, and when)	functional

Appendix D: Deprescribing and CancelRx Update

Deprescribing & the Use of Cancel RX

Deprescribing is the planned and supervised process of dose reduction or stopping of medication that is no longer of benefit to the patient or might be causing harm. Deprescribing is an essential practice of good prescribing – reducing doses that are too high or discontinuing medications that are unnecessary.[19] CancelRx is an electronic tool that facilitates communication around deprescribing by allowing prescribers to send electronic cancellation messages to pharmacies when medications are discontinued.[20] CancelRx is used to remove active prescriptions from a patient's medication regimen and communicate that to the pharmacy. Due to the intertwined nature of deprescribing and the CancelRx tool, and the overlap of work done in these areas by the Medication Reconciliation and Polypharmacy Committee (MRPC), the decision has been made to combine the work performed in these areas into a single update.

CancelRx

A CancelRx transaction communicates an electronic message to the pharmacy from a provider when the provider discontinues a medication in their EHR system. Providers have the ability to also enter a note in the message to indicate why the medication was discontinued. As of 2010 the National Council for Prescription Drug Programs (NCPDP)[21] CancelRx tool was available, however adoption was quite limited. Updates to the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) introduced requirements that EHRs include capability to send electronic cancellation messaging to pharmacies. Additionally, prescribers and pharmacies are responsible for certifying their capacity to send and consume CancelRx messages. This has led to an increase in adoption of CancelRx. As of September 2020, approximately 78% of Connecticut pharmacies are CancelRx enabled.[22] This statistic puts Connecticut at the forefront of CancelRx adoption, with higher adoption levels than the national average.

Anecdotal reports as well as implementation data reveal that while acceptance has increased, work remains to improve adoption of this technology. Additional outreach and education efforts targeted at informing providers about how the technology works, as well as encourage it's use through incentives and/or requirements could help push Connecticut closer to full adoption.

In the context of the Covid 19 public health crisis it becomes imperative that we consider ways in which deprescribing activities, increased adoption of CancelRx, and education efforts can move forward via telehealth and virtual opportunities. In support of the MRPC and enhanced adoption of Health Information Technology (HIT) in Connecticut, the team at UConn Health, led by Dr. Tom Agresta, developed and presented a virtual continuing education event for providers and pharmacists. Additional virtual outreach and education activities should be considered to aid in the increased awareness of these tools, as well as further drive adoption of deprescribing standards within Connecticut.

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[19] https://deprescribing.org/what-is-deprescribing/
[20] Pitts SI, Barasch N, Maslen AT, Thomas BA, Dorissaint LP, Decker KG, Kazi S, Yang Y, Chen AR. Understanding CancelRx: Results of End-to-End Functional Testing, Proactive Risk Assessment, and Pilot Implementation. Appl Clin Inform. 2019 Mar;10(2):336-347. doi: 10.1055/s-0039-1688698. Epub 2019 May 22. PMID: 31117135; PMCID: PMC6531208.
[21] https://www.ncpdp.org
[22] Courtesy of Surescripts 2020 Data

Activities & Opportunities

Survey

In early 2020 a survey was developed for providers in the State of Connecticut to assess their current methods of deprescribing, awareness of the CancelRx standard, and to identify areas of interest for education and outreach efforts. The survey also assessed prescriber and pharmacist satisfaction with the standard, if they were currently using it. In March 2020 the survey was shared through a list serve of prescribers in the State, using Qualtrics. Over 500 providers responded to the survey. Respondents spanned a variety of practice settings and provider types, including physicians, pharmacists, advance practice nurses, dentists, and physician assistants. The results determined that more pharmacists than prescribers were familiar with the CancelRx standard and participants demonstrated that there was an interest for educational opportunities on the topic and led to the development of the deprescribing continuing education webinar held in June 2020. The survey questions and a selection of results can be found at the end of this appendix.

Education & Outreach

Education and outreach activities around deprescribing and CancelRx are ongoing. Initial education to providers, pharmacists, and others occurred over the summer, via a panel style continuing education webinar. The event, *To Deprescribe or not to Deprescribe: The Role of Health IT in Polypharmacy* was held in June 2020. This event offered continuing education credits to physicians and pharmacists, and covered the impact of polypharmacy, challenges associated with deprescribing, the role of Health IT in medication management, the SCRIPT standard, CancelRx transaction data flow and best practices to implement and apply deprescribing in clinical practice. This event was recorded and can be shared widely, beyond initial attendees. Additionally, a frequently asked questions (FAQ) document was developed based on attendee input and is available to be shared broadly. Further opportunities for educating at the organization and pharmacy level are being considered. Additional provider focused events are in development, as well as the development of an opportunity to engage patients and providers to promote shared decision-making around deprescribing is currently under consideration.

Education and outreach materials that have been produced around deprescribing to date and the CancelRx standard are available in digital formats and have been distributed via email. These items are available via a web repository launched in December 2020. Preliminary resources, including peer reviewed literature, as well as documentation around standards, recommendations and best practices have also been collated and are included in the repository. This work is ongoing.

Legislative & State Leadership

Opportunities for collaboration with State leadership and the Legislature have been identified in the encouragement and/or incentivizing of participation in the CancelRx standard. At this time formal assessment or activities have occurred in this area. Since currently available data indicate that over 78% of Connecticut pharmacies are already enabled, and federal programs already incentivize adoption, it may be most useful at this time to consider seeking support for assessing which pharmacies are not currently enabled and why and performing targeted outreach to those pharmacies not participating. Alternatively, as the majority of pharmacies are already enabled, an option is to seek legislative support and sponsorship of a bill to require those remaining pharmacies to turn on CancelRx capability.

Health Information Exchange

There are also prospects for a partnership with the State's Health Information Exchange (HIE) to further the work of the MRPC. An area that has been identified as ripe for collaboration is the development of a business case for

the sustainability of CancelRx. Under the HIE's Use Case Factory model, CancelRx could be combined with effective deprescribing strategies and packaged as a medication reconciliation use case for the State's HIE. Further, upon the implementation of the HIE there may be an opportunity to utilize risk algorithms to identify population health strategies around deprescribing. This latter opportunity will be practical to explore once the HIE is actively exchanging data.

Office of Health Strategy

An occasion may also exist for MRPC collaboration work with the Office of Health Strategy's (OHS) Primary Care Modernization and Cost Containment Offices. There may be opportunities for deprescribing recommendations and/or incentives to be incorporated into these ongoing projects at OHS. The goals of these offices align with deprescribing efforts to improve healthcare outcomes and reduce costs.

Department of Consumer Protection

Collaboration efforts with the Department of Consumer Protection (DCP) have helped to align the agency with the activities of the MRPC. The Director of the DCP's Drug Control Unit is an active member of the MRPC. Additionally, recent efforts, aided by the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment (Support Act) funds, have resulted in plans that will provide integration for EHRs with Connecticut's Prescription Drug Monitoring Program. This integration will occur at no cost for providers and health systems and will facilitate easier access to Connecticut's PDMP for providers. Ongoing close coordination with the DCP is planned to ensure harmonization between the agency and the MRPC.
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Status of CancelRx In Connecticut
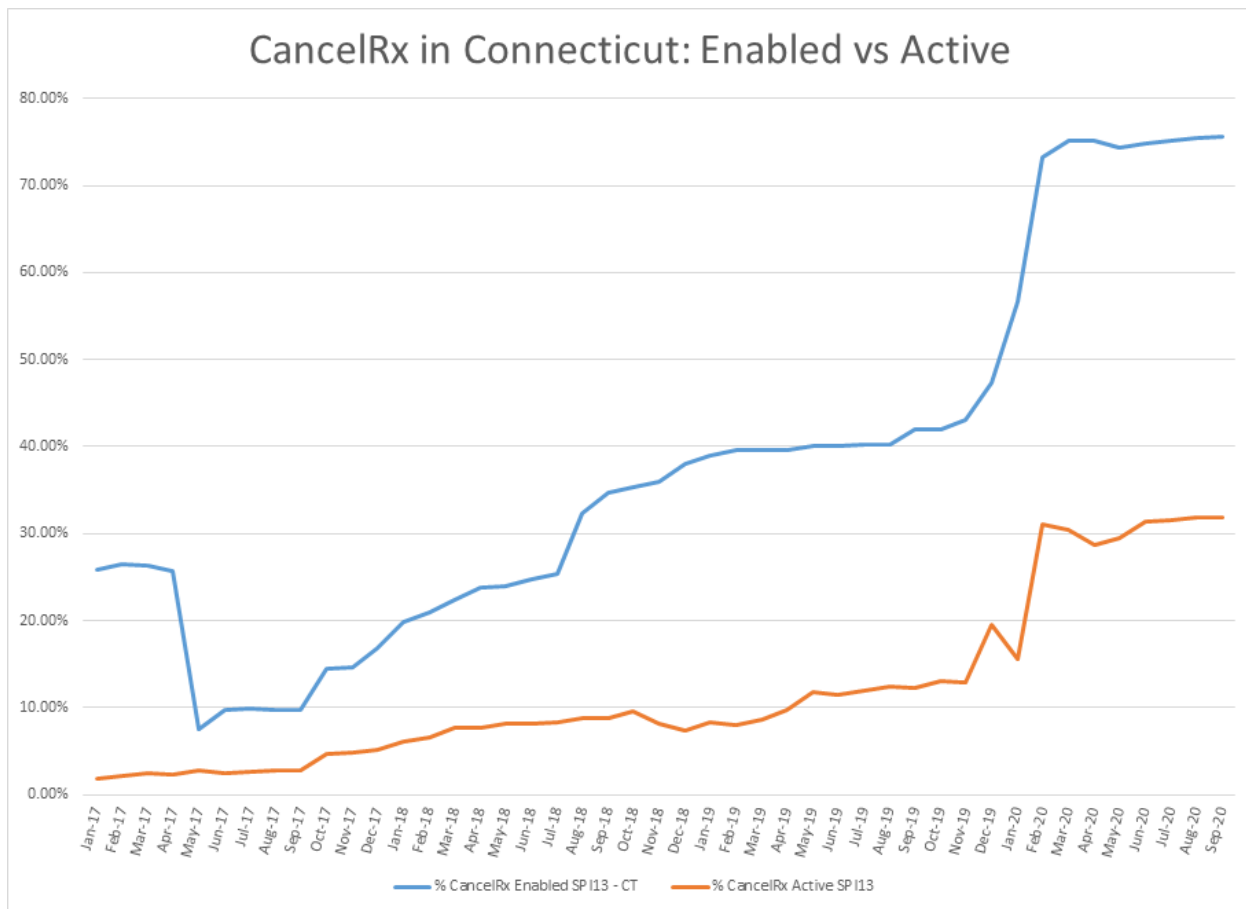

CancelRx in Connecticut: Enabled vs Active

Figure 1: Represents the providers in Connecticut that are enabled to use CancelRx vs. those that are actively using CancelRx. The spikes you see in Figure 7 at the end of 2019 in to 2020 are the result of health systems using Epic giving their prescribers the capability to utilize the new standard upon upgrade to the new version of the NCPDP script standard. The majority of Epic Health Systems nationwide upgraded in Q4 of 2019.

Enabled: The prescriber's system has the technical capability to use the transaction and the prescriber has been turned on to send it

Active: The prescriber has sent a CancelRx transaction in the last 30 days
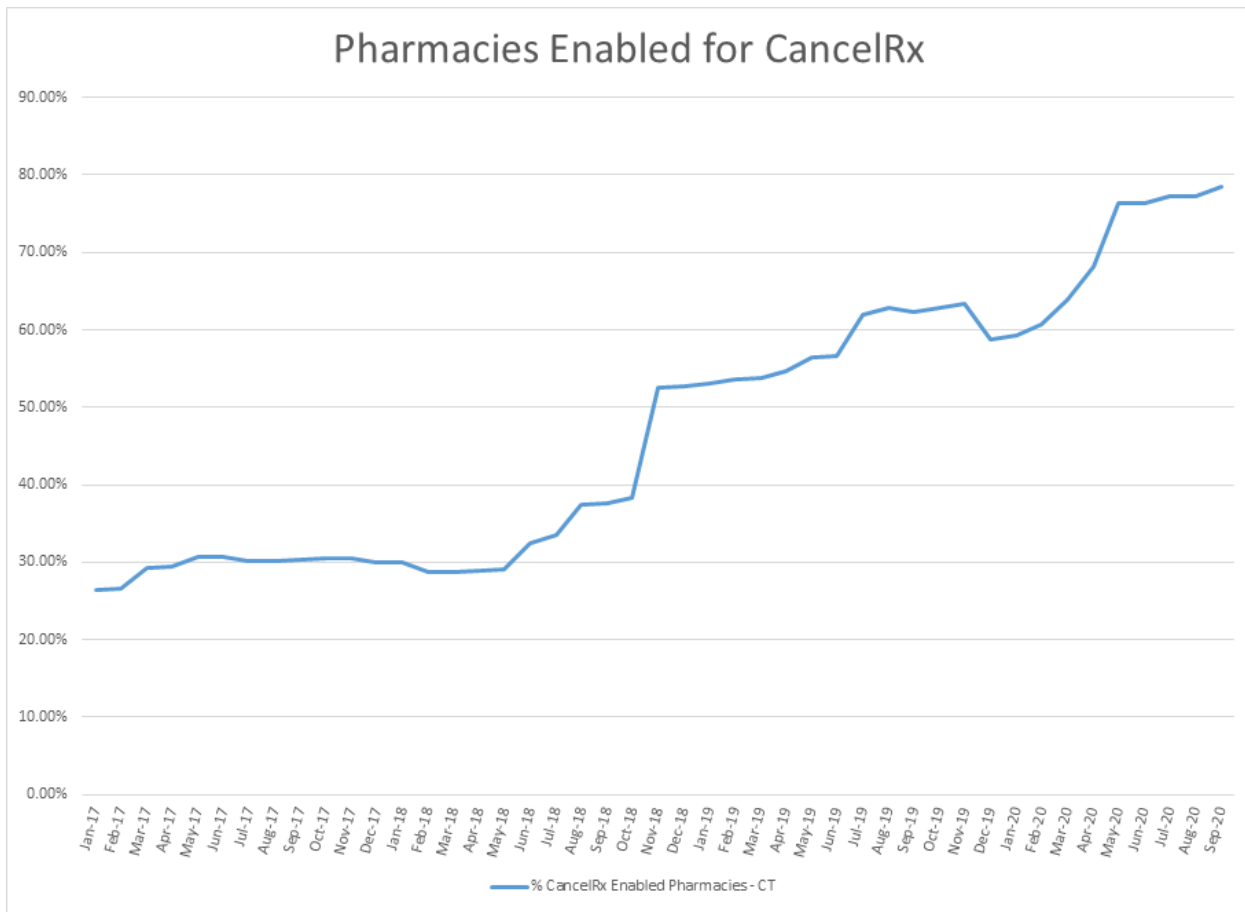
Figure 2: Represents the change over time of pharmacies in Connecticut that are CancelRx enabled.

Cancel RX Survey Questions

The CancelRx survey was designed and administered to gain an understanding of the current levels of familiarity of CancelRx among providers and to identify if training was desired. Additionally, the survey sought to understand which educational methods providers might be most interested in participating in. Below is an outline of the survey questions.

CancelRx Survey

Q1 The purpose of this survey is twofold: 1) to assess the awareness of and knowledge about CancelRx, which is an electronic messaging standard for deprescribing medications from within an Electronic Health Record and 2) to determine the best method to create and deliver educational materials to facilitate the safe and effective use of this standard by healthcare stakeholders who are involved in prescription cancellations.

Q2 Please select the option below that best describes your role in healthcare.

Q3 Which setting(s) do you practice in? Select all that apply.

Q4 Please state the name of the organization(s) where you are employed.

Q36 If you are employed in a state other than Connecticut, please indicate below.

Q5 Which of the following best describes your role (select all that apply):

Q6 Which of the following best describes your role (select all that apply):

Q7 How does the pharmacy receive the cancellation? (select all that apply)

Q8 Prior to this survey, were you familiar with CancelRx or its purpose?

Q9 Does your organization use CancelRx?

Q10 Does your pharmacy have CancelRx enabled?

Q11 How do you notify the appropriate parties a medication has been discontinued? (choose all that apply)

Q12 Do you know which providers send cancellation transactions using CancelRx?

Q13 (Click and Drag) Rank the method you use from most to least, where a ranking of 1 represents the most utilized.

Q14 (Click and Drag) Rank the methods in which the pharmacy receives prescription cancellations from most (1) to least (4)

Q15 For the following questions, assume your electronic medical record allows you to click on a button labeled "cancel," and once you do, an electronic message is sent to the pharmacy associated with that medication to notify them that the prescriber has discontinued the medication (CancelRx).

Q16 For the following questions, assume your pharmacy information system allows you to receive an electronic message from the prescriber for a medication cancellation and permits you to respond electronically to confirm the cancellation (CancelRx).

Q17 CancelRx has eased my everyday workflow

Q18 In what ways has CancelRx positively impacted your workflow?

Q19 In what ways has CancelRx negatively impacted your workflow?

Q20 CancelRx has reduced medication discrepancies.

Q21 CancelRx has supported patient medication adherence.

Q22 When I use the CancelRx function, I feel confident that the message was successfully transmitted.

Q23 I believe CancelRx would ease my everyday workflow

Q24 I believe CancelRx would reduce medication discrepancies.

Q25 I believe CancelRx would support patient medication adherence.

Q26 Do you know who to reach out to if you have any questions about CancelRx?

Q27 Who do you contact to get help with your electronic prescription system?

Q28 How interested would you be in receiving a short training session regarding the proper utilization of CancelRx?

Q29 Rate the level of interest for each of the instructional methods.

Q30 Please provide any comments.

Q35 Optional.

Provide your email below.

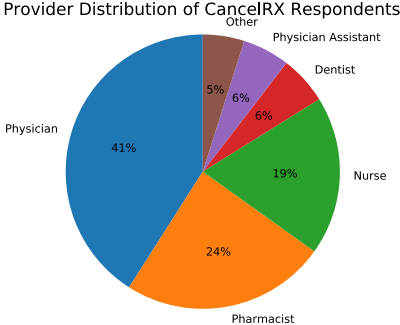# A Selection of CancelRx Survey Results

Figure 3: Represents the distribution of provider types responding to the CancelRx survey.
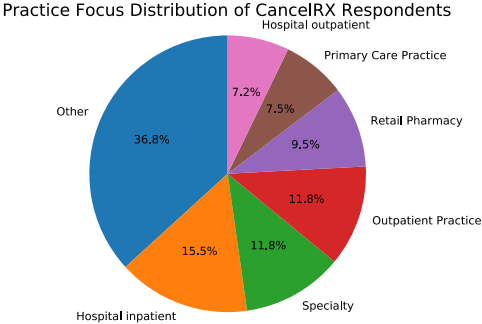

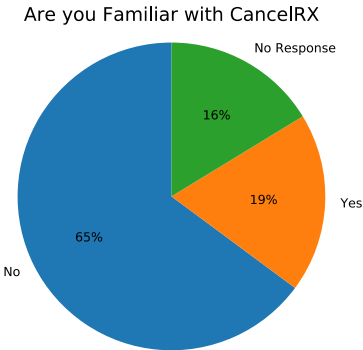Figure 4: Respresents the distribution of practice settings of respondents to the CancelRx survey.

Figure 5: Represents the percentages of respondents with prior knowledge of CancelRx.
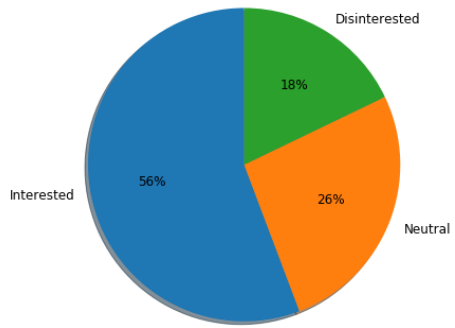
Figure 6: Represents the percentage of respondents interested in CancelRx educational opportunities.