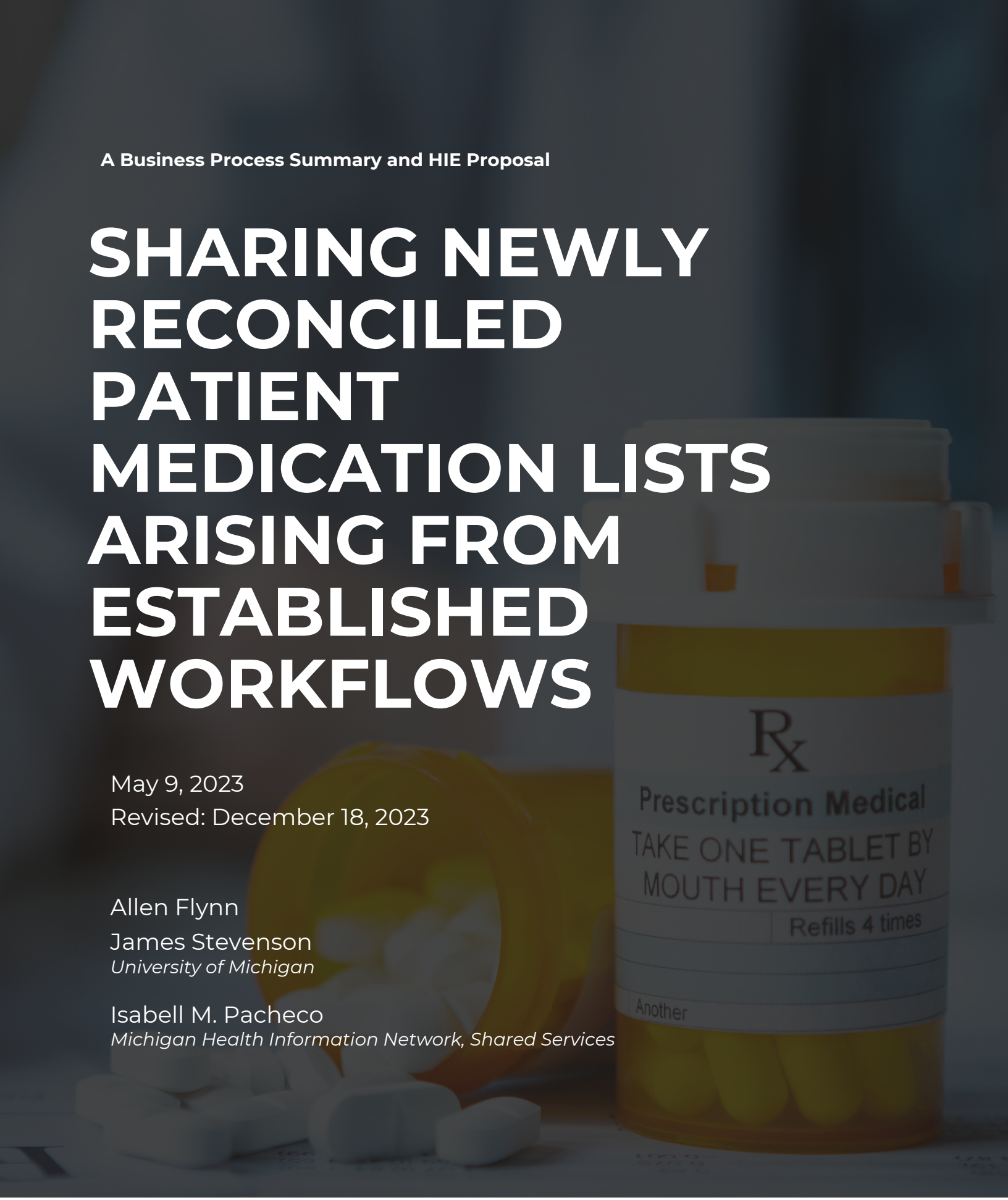
A Business Process Summary and HIE Proposal

SHARING NEWLY RECONCILED PATIENT MEDICATION LISTS ARISING FROM ESTABLISHED WORKFLOWS



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The Problem of Maintaining an Accurate List of Patient Medications

One of the most challenging aspects of improving medication use safety and outcomes is to ensure that accurate information about a patient's medication use is available across the health care continuum.

Maintaining an accurate and up-to-date list of each patient's medications is a significant obstacle, as regimen changes can occur regularly. The *medication reconciliation* process has been developed to help identify the most accurate list of medications each patient takes. The term "medication reconciliation" is defined by the Joint Commission as "*a process of comparing the medications a patient is taking (or should be taking) with newly ordered medications*." [3] *Medication reconciliation* involves listing, validating, evaluating, and documenting an up-to-date and accurate list of the medications a patient is taking. *Medication reconciliation* starts by making a complete list of the current prescribed and over-the-counter (OTC) medications, nutritional supplements, and other remedies for a patient. Then, this list gets evaluated, and medication treatments are adjusted accordingly. The process of *medication reconciliation* helps avoid common medication errors, especially duplicative drug therapies, incorrect dosages, drug interactions, and failure to restart medication therapies after procedures or hospitalizations.

The *medication reconciliation* process reduces adverse drug events and is a priority of the Institute for Healthcare Improvement's 5 Million Lives Campaign.[1] The National Academy of Medicine also encourages *medication reconciliation*, and the Joint Commission has promoted *medication reconciliation* as a National Patient Safety Goal since 2005. Doing more and better *medication reconciliation* remains a stated goal for healthcare improvement today. [2]

Medication reconciliation has been incorporated into several healthcare workflows to meet healthcare improvement goals. For example, *medication reconciliation* is typically done to improve safety and reduce readmissions when a patient gets discharged from a hospital. In addition, pharmacists increasingly provide insured outpatients with Medication Therapy Management (MTM) services that incorporate the *medication reconciliation* process.[3]

Performing *medication reconciliation* well is challenging because of the fragmented U.S. healthcare system. Sources of information about patient medication use exist in many places, including e-prescribing systems, hospital EHRs, physician office records, and pharmacies. Unfortunately, these sources are not all complete or accurate. Another challenge is that patients can be unreliable reporters of their medication use due to cognitive impairment, the complexity of their drug regimens, or medication name confusion. Moreover, the use of OTC medications and supplements is often missed during *medication reconciliation*, especially when too little time is spent in direct dialog with patients. Besides OTCs, even low-cost prescription medications may not be identified and listed when patients pay in cash and insurance claims are not generated. The good news is that some prior work to log OTCs in the EHR and document prescriptions paid for in cash has been done.[3]

Since the process of *medication reconciliation* results in a snapshot of medication use at a given point in time, care providers who do it must be able to produce a newly reconciled medication list for each patient served, noting the date, time, provider's identifier (e.g., NPI), and provider's role (e.g., RPh, RN, NP, CPhT, PA, MD, D.O.). Ideally, all newly reconciled medication lists created at discharge or through MTM activities would conform to a standard format, making them much easier to share with other healthcare providers via health information networks spanning the healthcare continuum. As time passes, any provider having an active care relationship with a patient must be able to see newly reconciled medication lists from other providers and perform *medication reconciliation* again when medications change.

Health Information Exchanges (HIEs) are uniquely positioned with the infrastructure needed to support a more accurate representation and sharing of an up-to-date medication list for patients at the point of service. The Office of the National Coordinator for Health Information Technology (ONC) defines HIE as "*technology that allows doctors, nurses, pharmacists, other health care providers, and patients to appropriately access and securely share a patient's vital medical information electronically—improving the speed, quality, safety, and cost of patient care.*"[4]

A solution for leveraging a HIE to share reconciled medication lists is outlined on the next page.

Potential HIE Solution:
Notification of and Access to Newly Reconciled Patient Medication Lists

Background

Successful *medication reconciliation* depends on sharing medication use information between patients and their multiple care providers. For this reason, pursuing a health information exchange (HIE) approach to supporting and facilitating the *medication reconciliation* process makes sense.

Use of Electronic Health Records (EHRs)

Prior attempts have been made to systematically exchange EHR information about patient prescriptions and over-the-counter (OTC) drug product use. There are many problems with using the EHR as the source of medication use information. For example, OTC drug products are often not recorded in EHRs. Another example is that EHRs maintain a continuously evolving record of individual prescriptions instead of accurate newly reconciled medication list snapshots. For these reasons, EHRs must be upgraded to support a proper medication list exchange. EHRs must be capable of capturing, dating, saving, and sharing snapshots of medication lists and follow-up evaluations produced by the *medication reconciliation* process. When EHRs can accomplish this, it will be possible to send notifications of and provide access to newly reconciled patient medication lists within the EHR. Some recent reports suggest that modern EHRs are upgrading to document date-and-time-stamped reconciled medication lists.

[3]

Use of Medication Therapy Management (MTM) Platforms

MTM is a billable professional pharmacy service for patients taking multiple medications paid for by Medicaid, Medicare (Part D), and other insurance plans. MTM services include annual Comprehensive Medication Reviews (CMRs) plus quarterly Targeted Medication Reviews (TMRs).

Online platform support for MTM service providers is provided by Outcomes by Cardinal Health (formerly OutcomesMTM). To use this platform, independent pharmacies, pharmacy chains, clinics, and health systems in Michigan contract directly with Outcomes and join their provider network. Then, using Outcomes proprietary Connect™ platform, specially-trained pharmacists (1) identify MTM-eligible patients, (2) perform and document CMRs completed in consultation with patients, (3) electronically send cover letters, newly reconciled medication lists, and medication action plans directly from the platform to patients, (4) document interventions made to change or clarify patients' medication use, and (5) bill for their MTM services.

In addition to the Cardinal Health Outcomes provider network, some Michigan pharmacies have elected to join the clinically integrated network CPESN-Michigan. This network is affiliated with CPESN-USA, a nationwide Accountable Pharmacy Organization providing value-based contracting with payers. Community pharmacies participating in the CPESN-Michigan network use the MTMPath software online platform from Clinical Support Services, Inc. to provide MTM services incorporating *medication reconciliation*, resulting in newly reconciled medication lists.

Two-fold Technical Solution

To help optimize medication use outcomes, a two-fold technical health information exchange (HIE) solution is proposed involving (1) notification of and (2) provision of access to reconciled medication lists.

Basic HIE Solution Requirements

The four basic requirements of the proposed two-fold technical HIE solution are these:

1. **Notifications** of newly available reconciled medication lists are sent to appropriate providers via their existing software and typical messaging workflows.
2. Inside every new **Notification**, a secure hyperlink is included. After authentication, these secure hyperlinks resolve to one newly available reconciled medication list for a patient. Each reconciled list is formatted as a PDF or for a web browser (HTML-CSS format).
3. When the secure hyperlink is clicked by a **Notification** recipient and the reconciled medication list is accessed, the list must contain a date and time stamp, and it must also indicate the pharmacist or other healthcare provider who worked with the patient to develop the reconciled medication list and the provider's professional role.
4. In all cases, providers who receive **Notifications** and can access newly reconciled medication lists in EHRs or MTM platforms are limited to individuals with an active care relationship[5] with each corresponding patient.

Potential Notification and Access-enabling Message Flow

Notifications, which are messages indicating that a recently reconciled medication list exists for a patient and where the list can be found, can come from more than one source or step in the healthcare process. **Notifications** from EHRs or MTM platforms could be generated each time a provider completes the medication reconciliation process and logs a new patient medication list using those systems. **Notifications** could also be generated when insurance claims for MTM services are sent to payers.

There are at least two ways to add web links to notifications and bring about one-click access to newly reconciled medication lists for **Notification** recipients.

1. Add hyperlinks pointing to reconciled medication lists stored inside existing EHR systems or MTM software platforms.
2. Send reconciled medication lists from EHRs and MTM platforms to a secure server outside these platforms. Then hyperlinks can point to this server as the source of reconciled medication lists.

Two similar workflows with corresponding message flows are shown on the next page.

In Figure 1 below, after the medication reconciliation process produces a newly reconciled medication list, an EHR or MTM platform user clicks a button to send the new medication list to the patient.

In this workflow, that same click also sends a Notification to the Michigan Health Information Network's (MiHIN) Active Care Relationships Service (ACRS®)[5]. Next, MiHIN forwards the Notification only to those individuals with whom the patient has active care relationships. Finally, individuals actively caring for the patient can choose whether to read the Notification, click on the hyperlink provided, download it, or view the new list from an EHR or MTM platform.

In Figure 2, a key modification is that reconciled medication lists are sent from existing EHRs or MTM platforms to a secure Med List server in parallel with a Notification sent from the EHRs or MTM platforms to MiHINs ACRS®. Then, authorized individuals with active care relationships can be notified and download new reconciled medication lists from the secure Med List server for themselves.

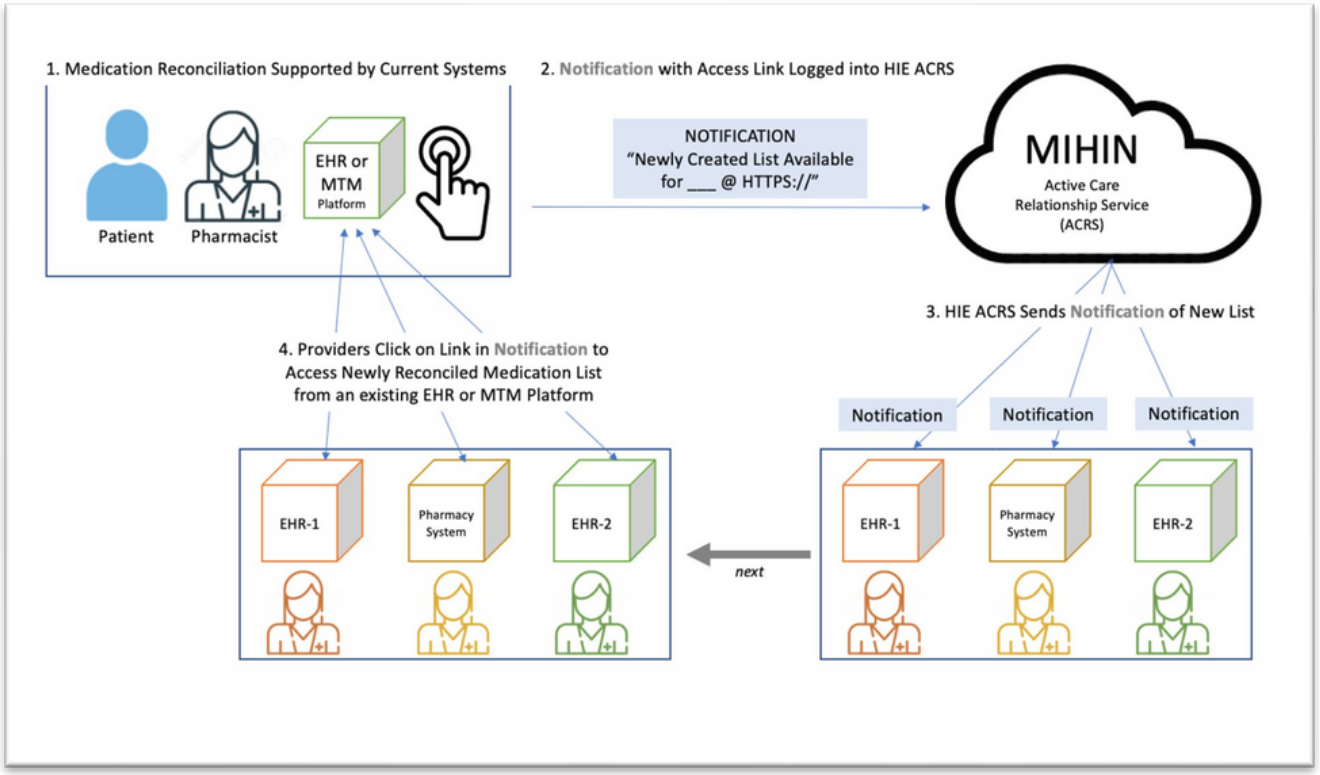

Figure 1. Round trip from new reconciled medication list generation to sharing via EHRs or MTM Platforms

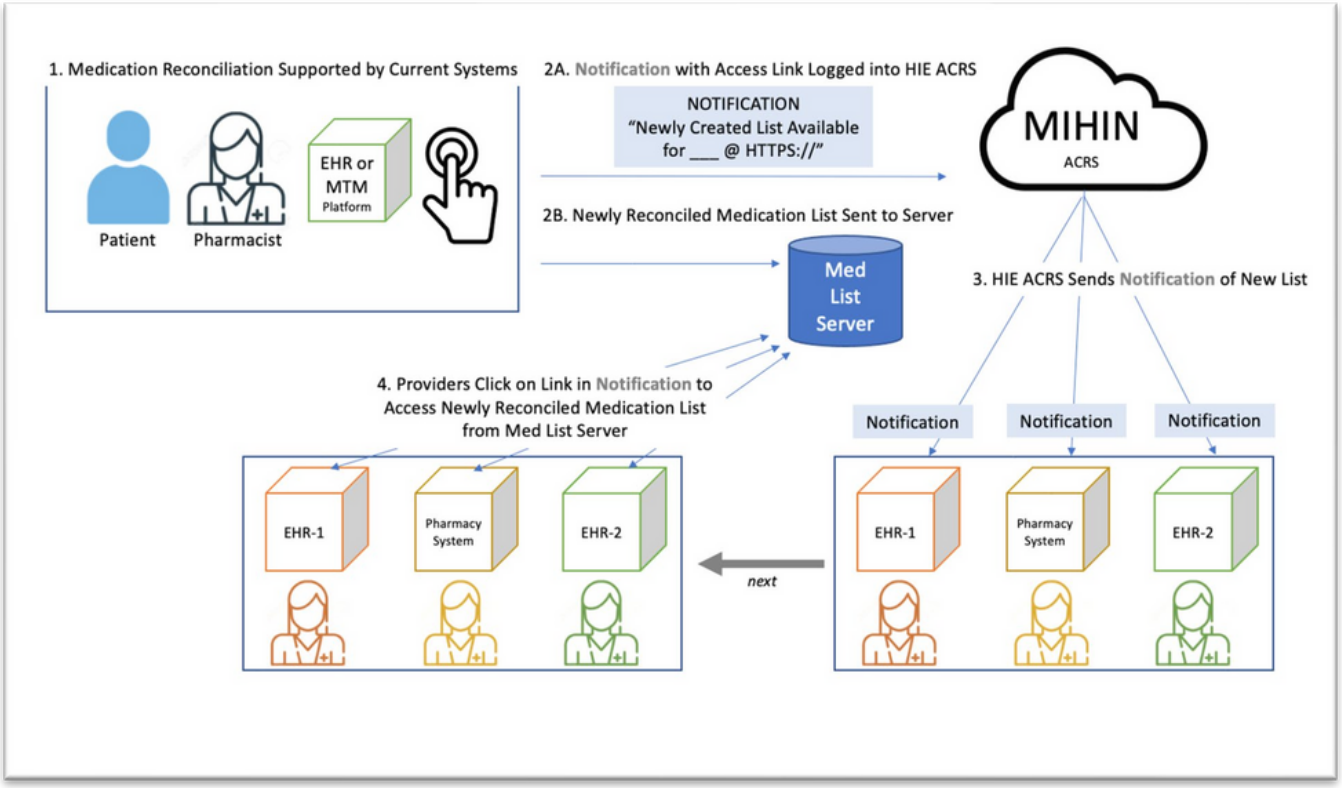

Figure 2. Round trip from reconciled medication list generation to sharing via Med List Server

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