Collecting Information about Health System Policies Related to Access to Health System EHR by Community Pharmacists

Study Investigator:

David A. Mott, PhD, FAPhA
Associate Dean for Advancement
William S. Apple Professor
Chair, Social and Administrative Sciences Division
School of Pharmacy, University of Wisconsin

Research Assistance:

Aaron M. Gilson, MS, MSSW, PhD
Sonderegger Research Center

BACKGROUND AND RATIONALE

Project Fit to Community Pharmacy Foundation Mission

This research project was conceptualized and designed to collect information from health systems (including community pharmacists) about access to and use of their electronic health record (EHR), and then to disseminate the information to community pharmacists to facilitate community pharmacists' engagement in patient-centered collaboration with other providers (i.e., physicians, nurses, nurse practitioners) using health system EHRs. The EHR is at the core of provider workflow in the modern health care system, and is the preferred mechanism used by health systems to share information among providers and with patients. Unfortunately, community pharmacists typically do not have access to the EHR and, thus, are not integrated into the EHR. Pharmacist access to the same EHR used by other providers has two important consequences:

(1) it demonstrates to other providers how community pharmacists can add value as an essential health care team member, and
(2) it verifies to providers, as well as to patients, the capabilities that community pharmacists have to improve the process and outcomes of health care delivery.

Project results are meant to demonstrate the current status of community pharmacists' access to health system EHRs and best practices related to enhanced EHR access and use by community pharmacists. Recommendations designed to help community pharmacists' access and meaningfully use EHRs, will likely facilitate community pharmacist access to and use of health system EHRs in Wisconsin. Such a resource, which is currently unprecedented, can even serve as a model for other states and lead to increased prevalence of community pharmacists' access to and use of EHRs.

Needs Assessment

The American Recovery and Reinvestment Act (ARRA), signed into Federal law in 2009, established goals for the U.S. to integrate information technology into the U.S. healthcare system.[1,2] To further this objective, the Health Information Technology for Economic and Clinical Health Act (HITECH), a component of the ARRA, authorized Medicaid and Medicare to provide incentive payments to hospitals and office-based physicians to adopt and use a nationwide electronic health record (EHR) system by 2014.[3] According to the Centers for Medicare & Medicaid Services, an EHR:

> "…is an electronic version of a patients [sic] medical history, that is maintained by the provider over time, and may include all of the key administrative clinical data relevant to that person's care under a particular provider, including demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports The EHR automates access to information and has the potential to streamline the clinician's workflow. The EHR also has the ability to support other care-related activities directly or indirectly through various interfaces, including evidence-based decision support, quality management, and outcomes reporting."[4-6]

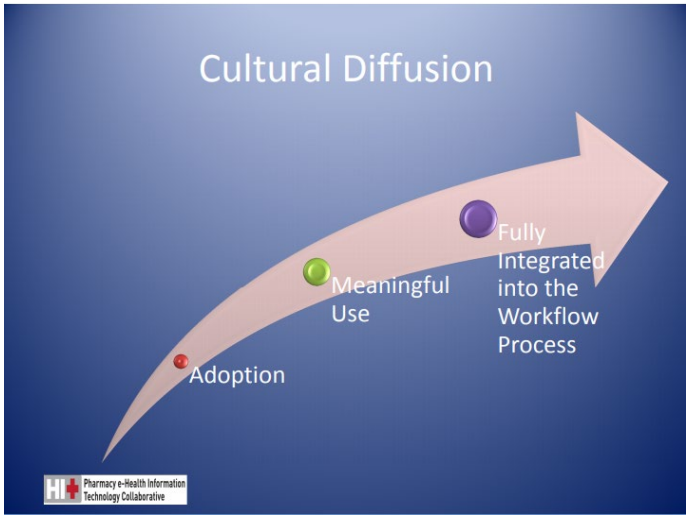
Accordingly, the U.S. Department of Health and Human Services and the Office of the National Coordinator for Health Information Technology (ONC) work to establish standards and incentive payments for the meaningful use of EHRs by hospitals and office-based physicians.[4-6] *Meaningful use* is the concept indicating that EHRs will be used in purposeful ways, meeting benchmarks that reflect the goals established for EHR use.[4-7] As EHR engagement meets meaningful use benchmarks, providers receive additional incentive payments.[4-7] The nation's goal for the use of EHRs is to reduce costs

through less paperwork, improved safety, and reduced duplication of testing, as well as to improve health by gathering a patient's entire health information in a single location.[7] In 2015, 87% of non-federal, office-based physicians had adopted any EHR and 84% of all non-federal, acute care hospitals had adopted at least a basic EHR.[8,9]

Pharmacists are not included as eligible providers for EHR adoption and do not receive direct funding or incentives for adopting EHR technology.[7,10] As a result, the adoption and use of EHRs by hospitals and office-based physicians has occurred with little to no consideration of the role played by community pharmacists in improving patient care. Pharmacists in all practice settings play an important role in achieving the goals for the use of EHRs by optimizing therapeutic outcomes of drug therapy, promoting the cost-effective use of medications, and improving safety of medication use.[11,12] Achieving these outcomes is heightened when pharmacists have access to information in an EHR and can contribute information to the EHR pursuant to medication therapy management activities, such as medication reconciliation, during care transitions, medication adherence, medication monitoring, medication safety, and evaluation of medication errors.[7,10-12] The failure to recognize pharmacists as eligible providers severely impedes incentives for hospitals and office-based physicians to exchange EHR information with community pharmacists.[7,10]

Evidence exists that EHR use improves patient care outcomes and that pharmacist connection to a primary care team in an accountable care organization using an EHR improves patient outcomes.[13,14] In addition, a number of case studies have confirmed how community pharmacists with access to EHRs are reviewing information and enhancing patient treatment.[15-20] However, the existing gap in knowledge about current mechanisms and best practices related to community pharmacist access to and use of EHRs continues to hinder community pharmacists' access and ability to use EHRs.

The Pharmacy Health Information Technology Collaborative (PHITC) was created to advocate for the integration of the pharmacist's role of providing patient care services into the national HIT interoperable (i.e., exchanging data in such a way that it is sharable from one computer system to another) framework.[10] The PHITC suggests that community pharmacists' access to and use of EHRs will follow a diffusion process involving three steps: 1) adoption of EHRs by community pharmacists; 2) meaningful use of EHRs by community pharmacists, and; 3) full integration of EHRs into the community pharmacist workflow (see Figure 1).[21] The current project will focus on adoption and meaningful use. Adoption entails knowledge and awareness of whether EHRs can be accessed (i.e., availability) and how to access EHRs (i.e., technology requirements and processes to follow). The adoption step is critical because community pharmacists cannot use EHRs unless they gain access to the system. Meaningful use suggests that community pharmacists should know how information contained in EHRs can be combined with pharmacist services to produce knowledge about the patient that contributes to hospitals and office-based physicians meeting meaningful use benchmarks established by the government. The meaningful use step is grounded in the idea that providers will be more likely to share



EHRs if community pharmacists are helping providers meet benchmarks to receive incentive payments. The literature suggests that community pharmacists need information that will help with the adoption of EHRs and information about how to use EHRs to help providers meet meaningful use benchmarks.[15-20,22] If community pharmacists do not determine strategies to adopt and use EHRs, they will lose the ability to communicate with other health care providers.[22,23]

To facilitate community pharmacy adoption of EHRs in Wisconsin, the Principal Investigator (PI, Dr. David Mott) consulted with members of the Pharmacy Society of Wisconsin (PSW) Informatics and Technology (I&T) Advisory Group. The advisory group is comprised of pharmacists employed by health systems, hospitals, and EHR vendors across Wisconsin that work on developing and maintaining HIT solutions involving pharmacists. An issue discussed with the interest group was identifying the most relevant person to contact to learn about EHR policies and procedures for hospitals and office-based physicians. Since health care in Wisconsin is provided by large integrated health care systems that own, or are affiliated with, multiple hospitals and office-based physicians, the group informed the PI that information should be collected from health information management (HIM) managers at those health systems. Eight of the largest health care systems in Wisconsin provide care for 94% of the population.[24] Typically, large health systems purchase EHRs, establish policies and procedures related to their EHRs that apply to all hospitals and office-based physicians involved in that health system, and then appoint an HIM manager to enact these policies and procedures. The interest group members were unanimous that collecting data from HIM managers at health systems would be much more feasible than contacting individual hospitals and office-based physicians. Advisory group members also suggested collecting data from community pharmacists in Wisconsin that currently were accessing and using EHRs from health systems in Wisconsin as a method to validate information collected from health systems.

Based on advice from the PSW I&T Advisory Group, the PI recognized that two separate interview guides were necessary for data collection. First, the PI developed and pilot-tested a semi-structured interview guide to collect information about community pharmacist/pharmacy access to and use of EHRs from HIM managers at health systems. Second, the PI developed and piloted-tested a semi-structured interview guide to collect information about access to and use of EHRs from community pharmacists that have access to and use EHRs from health systems.

Development of an interview guide for health information management managers

To develop the initial version of the semi-structured interview guide for HIM managers, the PI conducted an extensive literature search and reviewed documents produced by PHITC.[10,22-24] The initial interview guide was reviewed by a practicing pharmacist employed by a health system with extensive experience in conceptualizing processes for pharmacist access to an EHR and using an EHR in ambulatory care practice in a health system. The pharmacists' feedback prompted adding other questions to the interview guide and modifying question wording. Next, members of the PSW Pharmacist HIT Interest Group vetted the semi-structured interview guide questions, which led to additional modifications to achieve clarity.

The final version of the semi-structured interview guide for HIM managers contains 3 sections and 19 questions. The first section comprises 4 questions related to community pharmacist/pharmacy access to health system EHRs – the name of the EHR vendor, whether community pharmacists/pharmacies can have access to the EHR, the type of access (i.e. whether access offers uni- or bi-directional communication), the process to access the EHR, and the number of and names of pharmacists/pharmacies with EHR access. The second section consists of 11 questions related to factors associated with access to the EHR, including factors that have facilitated access to the EHR, formalized

policies and procedures for access, training that is offered to community pharmacists, barriers to pharmacist/pharmacy access, access to the EHR for pharmacists employed by the health system, and e-prescribing processes used by the health system. The third section contains 3 questions related to outcomes associated with pharmacist access to the EHR – activities pharmacists have performed with the EHR (i.e., Medication Therapy Management (MTM), immunizations), how various activities are documented in the EHR, and whether and how other providers are informed about pharmacist access to the EHR. A final question examined the extent of understanding about pharmacists' involvement in health information exchanges.

The PI pilot-tested the semi-structured interview guide in a face-to-face interview with an HIM manager from a local health system. The PI provided the interview guide to the HIM manager before the interview and the interview lasted 60 minutes. Questions that were unclear were modified based on suggestions. The HIM manager validated the interview guide as appropriate for the topic, verified that HIM managers should not have problems answering the questions contained in the guide, confirmed that a telephone interview is feasible, that HIM managers would not need an incentive to participate, and assured that 60 minutes was ample time to complete the interview.

Appendix A contains the final version of the HIM Interview Guide.

Development of an interview guide for community pharmacists

To develop the initial version of the semi-structured interview guide for community pharmacists with EHR access, the PI reviewed documents produced by the PHITC and reviewed the literature, especially case studies describing how community pharmacists were using EHRs and the impact that community pharmacist access to EHRs was having on patient and health system outcomes.[10,15-20,25] The initial version of the semi-structured interview guide was reviewed and modified by the same pharmacist and the same PSW I&T Advisory Group that reviewed the semi-structured interview guide for HIM managers. The final version of the semi-structured interview guide contains 8 questions – the EHRs to which they have access (i.e., which health systems), the procedures to access and use the EHRs, what services (i.e., medication reconciliation, immunizations, MTM) they are using the EHRs to provide, whether and how they are communicating information about the services they provide, barriers and facilitators to access and use of the EHR, and their knowledge of meaningful use.

The PI piloted-tested the semi-structured interview guide in a 45-minute telephone interview with one community pharmacist who was accessing and using EHRs from two different health systems. The PI provided the interview guide to the community pharmacist prior to the interview. The fact that the pharmacist was using two different EHRs, and was providing multiple services, facilitated determining the comprehensiveness and appropriateness of the interview guide. Questions that were confusing were modified based on suggestions by the pharmacist. The pharmacist validated the interview guide as appropriate for the topic, verified that community pharmacists with access to and using an EHR should not have problems answering the questions contained in the guide, confirmed that community pharmacists would not need an incentive to participate, and assured that 45-60 minutes was ample time to complete the interview.

Appendix B contains the final version of the HIM Interview Guide.

GOAL

At this time, community pharmacists are either poorly utilized within, or completely absent from, EHR systems. The longer this reality is sustained, the more difficult it is for community pharmacists to be

recognized as integral to treatment decision-making and safe and effective patient care. As a result, this project is designed to investigate and facilitate community pharmacists' role in EHRs. Information obtained through the interviews of both HIM managers and community pharmacists will provide valuable insights into the capacity of current EHR systems to integrate community pharmacy practice, as well as facilitate community pharmacists' readiness to be part of EHRs. It is fully expected that understanding and establishing an environment more amenable to community pharmacists' involvement in EHRs will, ultimately, contribute to a consistent expectation that community pharmacists are a distinctive and needed member of the healthcare team.

SPECIFIC AIMS AND OUTCOME MEASURES

Aim 1:	Collect and evaluate information from HIM managers at health systems in Wisconsin about policies and procedures related to community pharmacists' access to and use of EHRs.
Outcome measure:	Completed interviews using a pilot-tested semi-structured interview guide for HIM managers.
Aim 2:	Collect and evaluate information from community pharmacists who have access to and use EHRs in Wisconsin about their perspectives and experiences on how to access and use EHRs.
Outcome measure:	Completed interviews using a pilot-tested semi-structured interview guide for community pharmacists using EHRs.
Aim 3:	Design and disseminate an EHR Access and Use Toolkit for community pharmacists, as a resource to guide improved access to and use of EHRs in Wisconsin.
Outcome measure:	Completed EHR Access and Use Toolkit ready for use by community pharmacists in Wisconsin.

METHODS

Study Design

The study used a prospective qualitative research design. Study subjects were interviewed by study personnel using interview guides developed and pilot-tested by the study PI. The study timetable was originally conceptualized as 12 months, comprising data collection via interviews, assimilation of study data, and search and collection of materials to create and disseminate an EHR Access and Use Toolkit for community pharmacists. The COVID-19 pandemic influenced greatly the ability of HIM personnel and community pharmacists to participate in the project. Simply put, HIM personnel and community pharmacists had more pressing matters to deal with and were not able to participate when contacted. As a result, a project extension was requested and obtained to account for the difficulty identifying and recruiting potential interview participants during COVID-19.

Sample size

<u>(1) Health Information Management (HIM) Managers</u>

Data were collected from 6 HIM managers: Five of whom were employed by health systems with affiliated providers located in Wisconsin, and one in Minnesota. Our preliminary plan was to conduct interviews with HIM managers from each of the largest state health systems, making sure to conduct interviews with HIM managers at the largest health systems within each of the six regions of Wisconsin.

This approach was designed to facilitate collecting information about EHR access and use for community pharmacists across the entire state. Given our understanding about the concentration of health systems in the marketplace (i.e., 8 health systems provide care for 94% of the population),[24] we believed that interviewing HIM managers from 10 health systems will be appropriate for the goals of the project. Each HIM manager was interviewed only once, some follow-up contact was used to clarify recorded responses or to seek help in identifying other HIM managers to interview.

We obtained a list of health systems, by six regions in Wisconsin, from a health insurance plan offered to employees of the State of Wisconsin. A snowball sampling technique was used to identify HIM managers to interview at the health systems. In this context, snowball sampling involved asking HIM manger interviewees for the names and contact information for up to three HIM managers or people to contact at other health systems in Wisconsin. During the pilot-test, the interviewed HIM manager confirmed that a snowball sampling approach is appropriate since HIM managers are well-connected with each other across health systems.

The sampling process was begun by asking the HIM manager interviewed for the pilot-test to provide the name of the HIM manager at 3 other health systems and to provide an e-introduction, if willing. We attempted to use the listing of health systems to ensure coverage of the largest health systems in Wisconsin and large regional health systems. To enhance recruitment and participation, we also proposed to consult with members of the PSW I&T Advisory Group (also consulted during pilot-testing of the interview guides). It was expected that the PSW I&T Advisory Group could effectively advocate for the project, since many of the members of the interest group are aware of and support the project and are affiliated with health systems throughout Wisconsin.

Additionally, the PI contacted pharmacists that he knew that worked at health systems in Wisconsin. The PI asked the pharmacists to provide an e-introduction to the HIM manager. Once the e-introduction was made, the approved recruitment process was followed to recruit HIM managers to participate in the interview.

(2) Community Pharmacists

Data were collected from three community pharmacists that currently have access to and are using an EHR from a health system with affiliated providers in Wisconsin. Our original plan was to collect data from up to 5 community pharmacists that currently have access to and are using an EHR from a health system with affiliated providers in Wisconsin. The thinking behind the data collection approach, representing community pharmacy practice for patients affiliated with a variety of health systems, should provide the required variation and depth of information for providing information for the toolkit. Each community pharmacist was interviewed once. No follow-up interviews were needed to clarify any data collected.

Names of community pharmacists to contact were obtained in three ways. First, the interview guide for HIM managers contained questions that ask for names of community pharmacists and/or pharmacies that currently have access to the health system's EHR. Information provided by HIM managers was used to contact community pharmacists. Second, we used the snowball sampling technique and asked community pharmacists we interviewed for the names of up to three community pharmacists that they know have access to and are using an EHR. The community pharmacist interviewed in the pilot-test confirmed that this approach would generate names of community pharmacists. Third, we contacted the leader of the Community Pharmacy Enhanced Services Network (CPESN) Wisconsin and asked for

names of community pharmacists that had access to health system EHRs that we should contact for interviews. The approved recruitment process was used for all contacted community pharmacists.

Data Collection

Aim 1: Collect and evaluate information from HIM managers at health systems in Wisconsin about policies and procedures related to community pharmacists' access to and use of EHRs.

Each HIM manager participated in a telephone interview that was designed to last no more than 60 minutes. The goal of the interview, generally, was to obtain information from each HIM manager about policies and procedures at their health system and experiences related to EHR access and use (see the description of the semi-structured interview guide in Development of an interview guide for health information management managers). Follow-up outreach to, and interviews with, the HIM managers were conducted by the co-investigator. To this end, the co-investigator engaged in the following activities:

- Made initial contact with identified HIM managers, introduced the project, and explained what is expected of the HIM managers should they decide to participate.
- When the HIM manager agreed to participate, a time for the interview was scheduled, and a copy of the semi-structured interview guide was sent (via email) at least 5 days before the interview.
- Used the pilot-tested semi-structured interview guide for the interview, adding probing questions where appropriate, and audio recorded each interview using a digital recorder.
- Transcribed the relevant text of each interview for data analysis.
- Confirmed how to contact the HIM manager, and obtain agreement for potential subsequent contact, if it was necessary to contact the HIM manager after the interview.
- Asked each HIM manager interviewee for the names and contact information for 3 HIM managers employed by another health system.

Aim 2: Collect and evaluate information from community pharmacists who have access to and use EHRs in Wisconsin about their perspectives and experiences on how to access and use EHRs.

Each community pharmacist participated in a telephone interview, which is designed to last no more than 60 minutes. The goal of the interview, generally, was to obtain information from each community pharmacist about their experiences accessing and using an EHR and collecting information about material and education that community pharmacists likely need to be successful accessing and using an EHR (see the description of the semi-structured interview guide in Development of an interview guide for community pharmacists). As for the HIM managers, the co-investigator engaged in the same activities relevant to the interview as for Aim 1.

Aim 3: Design and disseminate an EHR Access and Use Toolkit for community pharmacists, as a resource to guide improved access to and use of EHRs in Wisconsin.

We initially intended to create an EHR Access and Use Toolkit that would contain information that community pharmacists could use to access and use the EHR of corresponding health systems. The contents of the toolkit were meant to correspond to the steps in the Diffusion Process shown in Figure 1. The first section of the toolkit would have been designed to focus on processes to adopt (i.e., access) each health system's EHR. It was expected that the second section would contain information related to

how community pharmacists can use an EHR in ways that would help a health system meet meaningful use criteria. The last section was envisioned to contain information related to best practices and examples from community pharmacists about how EHR use could be integrated into community pharmacy practice workflow. A Project Advisory Committee was considered, and members of the committee would have provided consultation about and evaluation of the content and format of materials that the PI develop for the toolkit. The Project Advisory Committee was to be comprised of community pharmacists in Wisconsin who have access to and are using EHRs and former Community Pharmacy Foundation (CPF) grantees who have completed EHR-related projects. Additionally, it was possible that a fourth-year student pharmacist, who had experience using a health system EHR and an interest in HIT, would be a member of the committee. The Committee was anticipated to meet three times during the study period via conference call and would provide ad hoc input as toolkit materials were selected or created.

Below is a list of possible materials, by section, that were thought to be possible to create for inclusion in the toolkit. We were not planning to preclude the inclusion of already-existing resources (e.g., from the Workgroup to Electronic Data Interchange, the Pharmacy HIT Collaborative, and the federal ONC), provided that copyright infringement is not an issue.

1. Adoption
    - A list of health systems, included in the project, that allow community pharmacist access to the EHR.
    - For each health system allowing access to the EHR, a list of steps (i.e., the process) community pharmacists must follow to access the EHR. The steps could include a list of any technology that is required for access and how to use the technology.
    - A list of tips from community pharmacists using EHRs that will facilitate community pharmacist access to EHRs.

2. Meaningful Use
    - A voice-over slide set providing education about meaningful use, why meaningful use is important, common terminology in use related to meaningful use, and how pharmacists can impact meaningful use criteria for health systems. The slide set would provide community pharmacists with a strategy for using the EHRs.
    - A voice-over slide set presenting case studies that reflect best practices of how community pharmacists are using EHRs to impact meaningful use. The contents would cover the activities that are performed, how information from the EHR is accessed, how results are documented, and how results are communicated to providers. The content for the slide set would come from information collected from the interviews of community pharmacists using EHRs. It was anticipated that perhaps a wide range of activities would be covered that are being provided by community pharmacists via accessing EHRs.
    - A list of tips from community pharmacists using EHRs that would facilitate community pharmacist meaningful use of EHRs.

3. Integration into the Pharmacy Workflow Process
    - A voice-over slide set that provides best practices for how use of the EHR could be integrated into the pharmacy workflow process. The best practices could link methods for integration with a particular activity or set of activities. The role of pharmacist support personnel could be

included as well as changes or modifications in work processes or practice environments that may be required by pharmacists to integrate the EHR into workflow.
- A list of tips from community pharmacists using EHRs that would facilitate integration into the pharmacy workflow process.

4. General References
- List of pharmacist experts/champions and contact information that community pharmacists could contact about access to and use of EHRs. The source for this information was expected to be the community pharmacists that were interviewed during the project.
- List of state and national organizations that serve as a source of information about access to and use of EHRs.

It was thought that the contents of the Toolkit would be informed by the data that are collected from HIM managers and community pharmacists using EHRs, as well as the literature. As such, the materials for the toolkit could change based on feedback that is collected during the project. All resources required to create the voice-over slide sets are available from the SRC. We were planning to house the toolkit on PSW's webpage under a section labeled "Resources" and/or under the "WPQC" section. We were also going to create a message that the PSW could use on various social media outlets to increase awareness about the availability of the toolkit.

Data Analysis

Aim 1 & 2: We used a generic qualitative approach for the analysis of interview data. Notes were extracted, and information synthesized, from the digital audio recordings of the interviews. Two separate Excel databases were constructed to represent all items and sub-items contained in each interview guide. Sentences or phrases from the audio transcripts, which were pertinent to the study questions, were added to the Excel databases. The analysis of coded data were guided by the interview guide questions – such as access to EHRs, how EHRs are used, barriers and facilitators to access and use of EHRs, and how EHR use is integrated into pharmacy workflow – and pertinent language was linked to the relevant spreadsheet cell. Relevant quotations were extracted and used in materials for the toolkit and other dissemination materials. Where appropriate, descriptive, summary statistics (e.g., number or percent of health systems allowing community pharmacists access to the EHR, number of community pharmacies accessing the EHR) were calculated from interview transcripts.

When relevant, exemplar quotes from the interviews are provided below to highlight important points identified by the frequency data.

Aim 3: As part of the development of the EHR Access and Use Toolkit for community pharmacist, over 20 potential resources have been identified, downloaded, and reviewed. These resources derived primarily from Federal government agencies and the Pharmacy Health Information Technology Interchange, as well as a number of additional sources. Content from these and other resources were anticipated to be used to inform messages or recommendations included in the various sections of the Toolkit.

RESULTS

Findings from Health Information Managers (n=6)

Even given the proposed and elaborate process of identification and recruitment of potential interview participants, it was exceedingly difficult to obtain commitment for HIM participation in this study. It is possible, and indeed probable, that the COVID-19 outbreak and prolonged effect represented

unprecedented circumstances for HIM managers and other healthcare professionals, and may have significantly restricted their ability to participate in the interview at this time.

The 5 health systems in Wisconsin, which were represented by these interviews, were:

- Advocate Aurora
- Belin
- Fort
- Gundersen
- Monroe Clinic

The single out-of-state health system, which was represented by these interviews, was Mayo Clinic in Minnesota.

Of these 6 respondents, one self-identified as a Clinical Informatics Pharmacist.

Although initial interviews with HIM managers were scheduled to begin in March, 2020, the outbreak of COVID-19 precipitated a rescheduling of those interviews. As a result, all interviews were conducted between April 3 and August 6, 2020.

It is probably not surprising, given that this study was conducted in health systems in Wisconsin, that Epic was the predominant EHR vendor (n=5), with one Wisconsin health system using Cerner. There was an equal distribution of pharmacist access to the health system EHR being achieved either through direct access (e.g., using Care Everywhere) (n=3) or a linked platform (e.g., EpicCare) (n=3). Access was more frequently bi-directional – that is, allowing both read and write access (n=4) – rather than being read-only (n=2). It is important to note that the access described here is for pharmacists generally and not specifically for community pharmacists. If only community pharmacists were to have access, the approach for accessing the EHR would likely be characterized by the use of a password-protected link and involve read-only access.

Extent and Type of EHR Access for Community Pharmacists

One health system reported to allow EHR access to only a small sample of 8 community pharmacists. Such external access (through the EpicCare link) is being granted to these community pharmacists through a direct request, requiring internal review and verification. The health system authorizes direct access for all pharmacists within the health system. It should be noted that read-only access is granted for all health system pharmacists, but that in-system hospital pharmacists engage more with the EHR (for documentation and medication verification) than in-system clinical pharmacists. For this health system, community pharmacists' intent – that is, their reason for use, such as wanting to verify orders, or medication management, or quicker access to prescription information – is the most important consideration for authorizing that access. Understanding the pharmacists' involvement, and how they are utilizing the EHR and its benefits (which has been going on for about 6-7 years), make the health system interested in reaching out to promote EHR access:

> *"What we've not done as of yet, we might get to it, is for lack of a better word 'selling the product.'…If we notice that we're getting a lot of requests for health records from [various facilities], down the road that would be a good opportunity for us to reach out and say, 'hey, we have this access, it's web-based, you can access this information yourself. What do you think?'"*

However, such efforts are hindered by a lack of resources. In addition, there are no current plans to give pharmacists bi-directional access. It is possible, though, that such a change could be more likely as integration becomes more widespread, but there is no demand by community pharmacists for it as this time. As one HIM manager indicated, pharmacists with read-only access can send a message to a provider, using an "in-basket" functionality, but there was a concern that such messaging may get lost among other messages. To avoid this possibility, it was suggested that calling the practitioner directly may be more timely.

Interestingly, another health system currently is piloting EHR access to a single community pharmacist, because of direct outreach from pharmacists at that pharmacy (access became active in November 2019). Read-only access was granted for information about certain patients, after decisions about what information was needed (i.e., only if the patient had an affiliation with that pharmacy and saw a practitioner within a health system clinic). The EHR information for which the pharmacist has access is fairly limited: Medications, immunizations, vitals, insurance coverage, and demographics. Given this pilot program, considerations about broadening access to community pharmacists depends on the intent of that access, with the continuing objective being to improve patient outcomes while preserving confidentiality. The HIM manager also recognized that successful use of the EHR by community pharmacists streamlines the relationships among practitioners, allowing for a direct and real-time communication between pharmacists and prescribers. Overall, expansion of EHR access would require the health system to develop the infrastructure to achieve that, and practitioners' expectations for use need to be established concomitantly.

Another 4 health systems authorized access only to in-system pharmacists, and the pharmacists provided input about this issue and directly acknowledged the benefit of pharmacists' access to EHR, including for workload, documentation, streamlining the relationships with practitioners, and the management of chronic diseases. Much respect was voiced within the organizations for medication reviews leading to more "real time" positive patient feedback and outcomes. To this end, a specific rationale was given: to incorporate patient medication management services (e.g., use for comprehensive medication review) and integrating with systems that do not have Epic, which was thought to have the potential to streamline things considerably. Although the health systems have not undergone formal activities, they report trying to nurture a team approach to patient care.

Only one of the 6 represented health systems reported having a goal of allowing community pharmacist access to EHR, while another 4 health systems expressed an openness to allow access if requested and reviewed. In the words of one HIM manager, health systems interpret pharmacy access to the EHR as "leveling the playing field" in the care of the patient – that is, it allows for pharmacists to have access to the same patient treatment information as other healthcare professionals, which ultimately benefits patient care.

<u>Presence of EHR Policy and Procedures</u>

For the single health system that reported allowing EHR access to community pharmacists, it reported having a formalized policy for all users, which also describes how a community pharmacist can access the EHR. The remainder of the health systems reported:

- Having a policy on accessing information; in process of integrating policies with another health system (within a 1-year timeframe),

- Relying on external standards (e.g., HIPPA),
- Having agreements for accountability,
- Using a confidentiality agreement for external users (other facilities, not pharmacies); access only for a period of 1 year, with an opportunity for renewal -- renewal would be denied due to violations (accessing inappropriately, without a viable justification), and
- Having a website to provide some information to those with access and HIM staff handles questions.

Of the 2 health systems that provided information about whether pharmacists influenced the policy-making process, one reported that the policy was developed by high-level administrators and did not likely include pharmacists because the policy largely addressed the parameters of compliance and legal issues regarding IT security. This policy was present for the single health system that allows EHR access to community pharmacists. The other health system reported including in-system pharmacist input on policy development, because they were considered "owners" of the policy.

Presence of Training

For the single health system that allows EHR access to community pharmacists, it provides EHR user training in the form of a user guide and quarterly webinar. Such information resources are developed for all users (not specifically pharmacists), and does not use the term Meaningful Use or imbed the concept into its training. In addition, that health system was reported to:

> *"[rely on] train-the-trainer. We kind of except that when people join a facility that has [EHR capacity] that they kind of help each other."*

All but one of the other health systems reported providing training to their in-system EHR users, including:

- Weekly and periodic updates on newest features; both face-to-face and aggregate – does not use the term or concept of Meaningful Use in training because it is more about the process or on-the-job workloads related to the EHR,
- How to use EpicCare link and accountability (using the EHR responsibly and notifying when access should be discontinued) – does not use the concept of Meaningful Use but does embed the concept's principles in its training,
- Provided by Epic's project team; if EpicLink was utilized for community pharmacy access, training would be provided by the health system's "own" Epic Project team, and
- Both in-class and web-based training when onboarding users (2-3 days of training) while determining competencies – Meaningful Use standards were reported to be imbedded within the EHR but are not a component of training.

No health system reported educating other providers about community pharmacists' access to the EHR, but 3 HIM managers offered the following observations about this issue:

- The health system has informal communications about pharmacists' roles, and a physician who is involved in ambulatory services reaches out to practitioners to establish collaborative practice agreements as a means to determine ways to have more pharmacy involvement in patient care.

In addition, the in-system pharmacies try to promote their services by communicating to providers how their clinical involvement can benefit patients,

- Practitioners who partner with pharmacies are aware of benefits, but such engagement is not part of a formal communication effort and advantages of engagement are not generally well-known because this information has not been communicated to the community, and
- Presumes that most practitioners do not know that pharmacists can have access (*even though this response was given by an HIM manager within the health system that allows EHR access to community pharmacists*).

Barriers to Community Pharmacist Access

For the single health system that allows EHR access to community pharmacists, the HIM manager offered a lack of demand as a reason to why community pharmacists are not currently obtaining bi-directional access.

> *"I think it's just an awareness issue. That [community pharmacists] aren't aware that it's available or that they could do it."*

Specifically, there is a lack of demand without a structured plan from the health system to increase awareness, at least partly because not all people within the organization consider this issue to be important. In effect, health system efforts to enhance community pharmacists' awareness of the potential for EHR access would also require an increase of awareness/prioritization within the health system.

No additional factors were identified as barriers to community pharmacists obtaining bi-directional access to the EHR, but this likely was a consequence of the fact that community pharmacists generally did not having any access (even read-only access) in the health systems represented.

HIM managers from another 3 health system respondents offered some interesting observations. First, there was a concern that bi-directional access could lead to notes being added by pharmacists that would not be noticed by prescribers, thus being a less efficient means of communication than direct telephoning; prescribers not seeing information submitted by community pharmacists can be exacerbated without clear policies, expectations, and established relationships. Second, it was thought that, as EHR integration becomes more widespread, it is possible that community pharmacists would become more involved. However, the demand for access from community pharmacists currently is not there and enhanced awareness would be beneficial as a means to promote the variety of clinical advantages that community pharmacists' EHR access has to offer. Finally, a different HIM manager made this explicit statement as an explanation:

> *"I just don't think that [community pharmacists] ever saw the need. I would imagine that if they would have approached someone with that need, I don't think that we would have created any barriers with them…We have EpicLink that we use with our nursing homes, so we grant access and there's a process of granting access. So, if we were ever approached with a need, we would do an assessment…so I don't see us as creating a barrier for that community pharmacy. We would definitely work with them to get them the information that they need."*

Cumulatively, these statements provide some important insights – reinforcing the reality that being presented with a call for the need to provide EHR access to community pharmacists would be beneficial, and that a precedent for need-based access has been established by other non-system healthcare entities.

Pharmacist eCarePlan and e-prescribing platforms

No health system HIM managers reported being aware of the Pharmacist eCarePlan. When asked about the e-prescribing platform(s) used by the health system, the following responses were provided (some health systems provided more than one answer):

- SureScript (n=3)
- McKesson for their retail pharmacies (n=1)
- e-Prescribe in Epic (n=1)
- e-Scripts (n=1)
- Unaware, as this is a separate area from HIM (n=1)

In addition, when asked about the process of e-prescribing used by the health system, and the patient and drug information that is communicated to pharmacies with the e-prescribing system, HIM managers gave the following responses:

- National Provider Identifier number (n=1)
- Working on including indication and diagnosis as part of e-prescriptions (n=1)
- Know about SureScripts (n=1)
- Unaware, as this is a separate area from HIM (n=1)

Pharmacist EHR Activities

HIM managers identified numerous types of activities that pharmacists from in-system pharmacies who have access to the EHR are providing, including medication therapy management, immunization therapy, anticoagulation treatment, warfarin monitoring, providing treatment for joint camp patients, involvement in specialty pharmacy, and the seamless transmission of medications to the ambulatory care setting. The EHR interface was also considered beneficial for the community pharmacists with access, when wanting to verify an order or medication management, for quicker access to prescription information for ensuring medication safety, and for playing a role on the patient care team. In addition, it was observed that in-system hospital pharmacists seem to be more engaged in the EHR (for documentation and medication verification), because they have bi-directional access, than are in-system clinical pharmacists that have read-only access – *and this response was provided by the HIM manager from the health system that authorizes access to community pharmacists*.

Health Information Exchanges

Only 3 of the health systems HIM managers admitted to knowing that pharmacists are involved in Heath Information Exchanges, with all 3 reporting using Care Everywhere. As one respondent explained:

> *"We use Care Everywhere to share information with other facilities that have Epic (as well as Care Equality for non-Epic users)…We don't consider ourselves as ever blocking*

information to others, especially Epic users…Integration with another health system will expand information sharing…All of this serves to get real-time information to healthcare professionals to promote patient safety."

Findings from Community Pharmacists (n=3)

Again, the proposed and elaborate process of identifying and recruiting potential interview participants was undermined by the exceeding difficulty with obtaining commitment for community pharmacists' participation for this study. The COVID-19 outbreak and its prolonged effects likely created unprecedented circumstances for pharmacist and other healthcare professionals, and may have significantly restricted their ability to participate in this interview at this time. However, it was generally difficult even identifying community pharmacists with past or current EHR access, which mirrors our difficulty with selecting health systems that authorize EHR access to community pharmacists.

The 4 health systems in Wisconsin, which were represented through these interviews, were:

- Meriter
- SSM Dean St. Mary's
- St. Vincent's
- UW Health

Due to the difficulty identifying community pharmacists with access to a health system's EHR, all interviews were conducted between October 7 and October 9, 2020.

Each community pharmacist's access to the health system EHR was achieved through use of a password-protected linked platform (e.g., UWCare Link). Access was solely read-only.

<u>Interaction Between Pharmacy Management System and EHR</u>

For these community pharmacists, there was no interaction between their pharmacy management system and the EHR. In fact, for all 3 pharmacists, the workflow was considered burdensome because of needing to remember the EHR system password or having to change to a new password each time logging into the EHR system (due to having forgotten the previous password).

<u>Use of the EHR System</u>

All 3 community pharmacists reported not using the EHR frequently due to the difficulties logging into the system. When used, EHR access contributed to the following activities:

- Understanding medication discontinuation
- Seeking to understand why a drug was added
- Preparing for MTM (which is the principal use for 1 pharmacist)
- Clarifying why a medication that was prescribed
- Collecting lab values to monitor medication use (which is the principal use for 1 pharmacist)

Interestingly, 2 pharmacists reported not using the EHR when doing therapeutic interventions, but rather only for discontinuation orders and labs. In relation to lab values, the following specific scenario was offered:

> "We're pretty aware of kidney function dosing for medications. So we try to keep serum creatinine and creatinine clearances on file for all of our patients over 65. And if we don't have that information that's recent, we'll try to access the EHR to get it, rather than having to place a call or bother the physician."

For the pharmacist who reported using the EHR primarily for MTM services, the following documentation process was described:

> "[I] access the EHR information and then record on paper, then use Care Plan in Pioneer to document any interventions or assessments that we did, or, if labs, then we would print them out and scan them into the patient record…frequently it does not [fit into the pharmacy workflow]. The EHR does not get done as frequently as we would like it to get done…[it] only gets done when we have the time and brain space to think of it in advance. [We] use it to target particular pieces of data."

In addition, one pharmacist offered the following rationale for deciding whether to access the EHR to collect prescription data:

> "If we think that accessing the record is going to be faster, easier, more efficient than calling or faxing to clarify some piece of information…mostly after hours or when someone's not getting back to us, or the normal pathways out are not working."

No pharmacist reported using the EHR for immunization services, but 1 pharmacist reported alternatively using WiR for immunization records.

Given that the pharmacists have read-only access, none reported communicating with prescribers via the EHR. Rather, the primary methods of communication remain either the telephone (if more urgent) or fax (if not considered urgent). No pharmacist reported using a Pharmacist/Pharmacy Provider EHR (PP-EHR).

<u>Barriers and Facilitators to Community Pharmacist Access</u>

The pharmacists offered specific barriers relevant to their access to the various EHR systems. Although there were some similarities, unique issues also arose:

> "Changing password at each log-in was an issue. Staffing was also an issue – pharmacists can't be off-line looking at EHR and not contributing their part of the workflow. The biggest barrier to getting involved in another health system's EHR is time and not knowing where to start. Informational resources, and a simplified process, from health systems to guide that process would be valuable."

> "Can only search by medical record numbers until they are assigned to you. In order to get them assigned to you, you have to call a phone number [which is] not an efficient process. Cannot use off-hours if that patient's medical record number is not already assigned to you. [There is] no integration with our pharmacy system [a separate software system]. The sign-up process takes a long time, takes a long time to complete the paperwork, and there is no notification that access [has been] granted."

Another barrier was unique to one of the pharmacists, who worked in a pharmacy that provided services for 3 different health systems but had EHR access for only one of those health systems:

> "Password access. Since we don't have EHR access for 2 of the 3 major health systems we work with, and it's only me specifically, we're always trying to remember if a particular patient fits the narrow guideline of use. And sometimes I forget that I'm on site and I can access that for another pharmacist who is working on something."

Even given these fundamental barriers that were reported as interfering with EHR ease of use, each pharmacist was able to identify benefits to having EHR access, including:

> "Some advantages are data collection abilities. [EHR access] provides a better picture of the patient [but I] can see a lot more potential than what we're currently able to do."

> "Sometimes it saves a provider an interaction [with me], because the information can be obtained from the EHR -- that is the win. Patient quality of care would go up tremendously if we had more robust access to EHR."

Again, despite the EHR access difficulties experienced by the community pharmacists, the advice about EHRs that they offered to other community pharmacists demonstrated their commitment to the benefits of a system and hope for broadening its accessibility in the future:

> "I can think of all kinds of great things that can come from it, if it were easily accessed and we had the staffing ability. It can eliminate the need for a lot of phone calls that we have back. Also, in electronic prescribing, we get 2 different sets of directions on the prescription, and we could then go back into the EHR to see what the provider wrote as to what they wanted the directions to be, so we wouldn't have to guess about which one it was or call and verify."

> "Think about how you want to use it to determine who you want to access it, so that you can utilize it to its fullest. If we want to be recognized as part of the healthcare team, we need to be engaged in some of these other activities, including getting this whole picture of patients and finding a way to either get that into our pharmacy workflow or setting aside time outside of the workflow to be doing some of these activities. It's more of a mindset kind of shift more than anything. A big missing piece is bi-directional communication, which would save time not only for me but for them. Privacy and managing patient data [are] important, but barriers in place are essentially making it non-functional. If I could look up patients more easily and more efficiently, that in and of itself would be the biggest thing that could be changed that would allow us to use it more frequently and efficiently. A way to allow employee to request access themselves would be helpful, if I could just approve it or something, that would be very useful compared to having to manually prepare paperwork for such access. If it's just that I don't know how to use it, I'm not willing to put the time in to learn it because it's so non-functional."

> "To keep pursuing it because it is valuable. It'll take baby steps to get us involved more across the board from health systems. So if we continue to work together and

collaborate, and they're getting unified messages from multiple community pharmacies, I think that's an important message to send."

"Meaningful Use" and Pharmacist eCarePlan

None of the community pharmacists admitted to being aware of the term "meaningful use" in relation to an EHR.

All 3 pharmacists reported being aware of the Pharmacist eCarePlan, but one admitted that his EHR use predated availability of the eCarePlan. Of the 2 remaining pharmacists, use of an eCarePlan system occurred, but there was evidence that such use was not without its problems:

> "So we are utilizing the eCare Plans in the context of whatever the purpose of getting the data is, we're using it…We're using eCare Plans and it would often correlate with when we would go [into the EHR], but we're not directly using eCare Plans to document specifically that we're gathering from the EHR."

> "We use Prescribe Wellness to do electronic care plans…Right now we haven't integrated it fully into our workflow. There are so many screens open -- QS1, DocuTrack, PDMP, WIR, Facts and Comparisons – it's another screen to have open, so it is a little cumbersome. What we do is unfortunately track them on paper and then we have a technician who enters them in every other day or so to the eCare Plans. We're averaging about 40 or more per month, so we are trying to document things like injections, immunizations, blood pressures, opioid interventions, PDMP use and access."

DISCUSSION POINTS

- Only one health system represented in the interviews authorized EHR access to community pharmacists, but for only 8 pharmacists at the time of the interview. One other health system currently has a pilot program focused on EHR access by a single pharmacist at one community pharmacy. In both situations the key issue that facilitated community pharmacist access is the pharmacists communicating to the health system about how EHR access would improve patient care. HIM managers did not tell us specifically how the community pharmacists communicated the need for access. Further, we did not evaluate best approach, from the health system perspective, to communicate the need for access.
- Pharmacists need to establish a rationale for why they need access to EHR information, as well as the specific information in which they are interested in accessing, and then communicate the message to the right people (including the HIM manager). There is evidence of other providers having access to the EHR (i.e., out-of-system nursing homes). Perhaps pharmacy needs to understand the message that is communicated by nursing homes or other relevant facilities to gain access. It appears from the feedback provided during the interviews that, when pharmacists employed by a health system are authorized to access its EHR, health system administrators and providers learn the value of having pharmacists access the EHR. It appears that administrators and providers appreciate the value of pharmacists' EHR access by seeing the impact on outcomes of patient care. Future research could evaluate and develop a strategy to effectively disseminate the impact on patient outcomes of pharmacists within health systems accessing the EHR.
- In both health systems granting community pharmacist EHR access, the access was read-only. There were no current plans within any represented health system to extend the access to be

bi-directional. One health system encouraged community pharmacists to telephone providers to communicate with them. However, the reliance on telephone contact limits the ability of community pharmacist EHR access to improve the efficiency of care for all providers. Further, in the health system pilot-testing community pharmacist access, such access was limited only to certain types of information contained in the EHR. Expanding access to other types of information within the EHR is likely possible, but would require a rationale for the access, which would highlight the importance of generating and communicating evidence demonstrating the broader benefits of community pharmacist access.

- Health systems acknowledge the value of having community pharmacists gain access the EHR, especially in the area of conducting patient medication reviews (PMRs). It appears that dissemination of information to health system administrators and providers, which would describe how access to information in the EHR can facilitate PMRs potentially, appears to be useful to promote community pharmacist EHR access. Targeting the dissemination of this information to health system administrators and HIM personnel would seem to be a very important mechanism in broadening pharmacist access. Additionally, showing how community pharmacist access to the EHR will help the health system achieve wider system goals and initiatives likely is important to facilitate EHR access.
- The concept of expanding EHR access to community pharmacists, when requested and reviewed, was embraced by all respondents. However, it is likely that expansion of EHR access would require the health system to develop the infrastructure to achieve and maintain that expansion. Health system resources appear to be a significant issue for community pharmacist EHR access. Although the HIM manager from the single health system that provides EHR access to multiple community pharmacists recognized the advantages of granting such access to external pharmacists, it was admitted that the health system currently does not have the resources to enforce policies to ensure security and broader access to the EHR. An additional HIM manager would like to communicate to more providers about access to the EHR, but does not have internal resources to support expanded access.
- Security of EHR information is a paramount consideration for HIM managers, as well as for community pharmacists. Pharmacists, as health care providers, are aware of security and confidentiality issues surrounding patient health care data. Policies from health systems about these issues should be expected by community pharmacists. Also, health systems have policies in place that relate to EHR access for other providers and facilities. There is a critical need for community pharmacists to communicate their desire for EHR access. To be most effective, expectations for successful practitioner/pharmacist collaboration around EHR use would need to be established concomitantly. This can be facilitated when a pharmacist leverages his or her relationships with providers with whom they have collaborative practice agreements, since these providers likely know the value of the pharmacist. Dissemination of studies that demonstrate the process and impact of collaborations between community pharmacists and prescribers in the literature read by prescribers is needed and may facilitate understanding by prescribers about the need for community pharmacists to access EHRs. Further, communicating successful collaborations between community pharmacists and providers at a health system to other providers within the health system appears to be an important aspect of this communication. One health system HIM manager said there was very little communication within the health system about the role of providers outside of that health system.
- Efficiency of patient care is another important consideration for both interview samples. However, the lack of bi-directional communication limits the impact that community pharmacist access to the EHR can have on efficiency of care. For example, one HIM manager suggested that messaging within the EHR could have negative impacts on the efficiency of providing care, since

providers may not be expecting such communication from pharmacists within the EHR. Thus, the message likely would be lost or not accessed because the expectation for such would be very low. The solution would be a direct telephone call. Interestingly, HIM managers thought that bi-directional communication would not be a barrier in the future. The key to bi-directional communication ability will be increased awareness on the part of health system administrators and providers to the need and value of community pharmacists accessing and using the EHR. One HIM manager said that bi-directional communication made pharmacists within the health system more involved in the patient care team.

- According to the HIM manager at the health system allowing access to the EHR, community pharmacists use the EHR to verify an order, medication management, for quicker access to prescription information for ensuring medication safety, and for playing a role on the patient care team. Community pharmacists with EHR access voiced a concern with trying to fit that access to the EHR into the pharmacy workflow. The fact that the EHR system is a system that is completely different from other systems that the pharmacist use in day-to-day work activities limits greatly the use of the EHR information. The pharmacists with EHR access mentioned using that access only sporadically due to such system barriers.
- A community pharmacist's decision whether to access the EHR to collect prescription data, once such access is authorized, may depend on whether that process is going to be faster, easier, and more efficient than calling or faxing a practitioner to clarify some piece of information. Technical features of EHR access that create barriers (e.g., a cumbersome password/log-in process) and the need to have multiple interfaces open on the computer screen can reduce EHR use in clinical practice.
- Community pharmacists with access may not have the workflow figured out in their pharmacies for its effective use, which may contribute to the sporadic use of the information in the EHR. This situation may reflect the fact that much of what pharmacists currently are doing is "assembly-line work" related to dispensing prescriptions, rather than being involved in a practice model that is focused on providing face-to-face patient care. Responses from pharmacists imply that, when they have the time to review the EHR, they do access the information. However, finding the time to step away from the normal workflow in the pharmacy appears to be a challenge for the pharmacists interviewed.
- Health systems provide training and education to providers that obtain access to the EHR. Thus, it is likely that, once access is granted, pharmacists will be able to learn how to access information and use the EHR. However, as mentioned by a pharmacist, learning about the unique aspects to access each individual health system's EHR can be time consuming and cumbersome. Standardizing the process for access likely would be a welcome change for pharmacists.
- Several HIM managers said that there is very little demand from community pharmacists for access to the EHR. One reason for the lack of demand is a poor level of knowledge by community pharmacists about what information is contained in the EHR, how to access the information, and possibly how to use the information. State pharmacy associations could contract with EHR vendors to hold education sessions for community pharmacists about how to use an EHR. Also, research could examine the extent that pharmacy students are learning what information is contained in EHRs and how to use the information through structured pharmacy curriculum or during APPE rotations at health systems. Given the need, it is also possible that Schools of Pharmacy could offer devoted time in courses related to the structure of EHRs, what information is stored, where the information is stored, and how to access and use the information in the EHR. New pharmacy graduates likely do and will play an important role in demanding EHR access in the future.

- The pharmacists mentioned that the time and process to gain access is cumbersome. Also, accessing records for a patient that the community pharmacist is seeing takes time as the medical record number needs to be assigned to the pharmacist, and this process takes time. There appears to be a need to have community pharmacists involved in establishing policies and procedures related to community pharmacist access to the EHR. However, one HIM manager reported that pharmacists employed within the health system were involved in the policy making process, since pharmacists from the health system were considered active users of the EHR.
- According to the community pharmacists with EHR access, there are many benefits to having such access. However, better access, time to learn the EHR system, modifications to the pharmacy workflow, increasing staffing, and facilitating access to pharmacy staff are a few of the barriers that would need to be overcome to fully realize the benefits. One pharmacist made a point of saying that they are at the beginning of accessing and using the information contained in the EHR, and that continued use is a constant learning process. As a result, the pharmacy staff are taking an incremental approach to learning more and to becoming more proficient in the EHR process. Given this information, it appears that convening EHR user groups of community pharmacists would be a good idea as a means to bring community pharmacists together (perhaps along with HIM managers and administrators) to share best practices, to discuss why certain aspects related to EHR access need to be changed, and deliberate about how they could be changed. According to one pharmacist, unified messages from community pharmacists with access to EHR will be important in improving EHR access and using information contained in the EHR. Perhaps professional associations need to have more educational programming focusing on this topic.
- One pharmacist reported using eCare plans, but mainly to guide data access and not to document patient care activities. When the eCare Plan is being used for documentation, much of the documentation is being done by hand by a technician, and then submitted. The use of the eCare Plan is viewed as cumbersome due to it being yet another different system and a different window that is open on the computer screen. It appears that sharing more information with pharmacists about best practices to use the eCare Plan is warranted.

DISSEMINATION PLAN

We will disseminate the results of the study to community pharmacists and academia. Methods to disseminate include (1) presentations at the annual meetings of the Pharmacy Society of Wisconsin and the American Pharmacists Association and (2) drafting manuscripts that would be relevant to such journals as the *Journal of the American Pharmacists Association*, *Research in Social and Administrative Pharmacy*, and the *Journal of the Pharmacy Society of Wisconsin*, as well as a journal related to health informatics.

Aim 3: EHR Access and Use Toolkit

Our initial ideas about the need for and the content for the Toolkit were incorrect. In terms of content for the Toolkit, we were not able to interview enough HIM managers at health systems that allow access to community pharmacists. We think the COVID pandemic was the main reason for this. Interestingly, two of the four health systems mentioned by the community pharmacists that allow access to the EHR declined our offer to be interviewed. Also, representatives from both organizations did not know that community pharmacists and access to the health system's EHR. As such, we were not able to collect enough information about how (i.e. suggested process for community pharmacists to follow) the EHR

can be accessed. Further the inability to collect enough information precluded us from having material to discuss with our proposed advisory group.

Additionally, since we were not able to interview enough HIM managers, we were not able to collect information about how community pharmacists were using the EHR, best practices for access and use from the health system perspective, and highlight success stories about community pharmacist use of the EHR. Interestingly, our plans to focus on meaningful use as a rationale for access seemed to be wrong. The two HIM managers from health systems allowing access and piloting access seemed to suggest that what community pharmacists needed to do to gain access is provide a rationale for access based entirely on how EHR access would impact and improve patient care for patients of the health system. Although that seems very straightforward, it is important to note that several HIM managers had never heard of the idea of community pharmacists gaining access to the EHR and did not know why community pharmacists would need or want access to the EHR. Evaluation of the impact of EHR access on patient outcomes in Wisconsin is needed as this would provide a message to communicate that shows the value and impact to health systems and providers of community pharmacist access to EHR. A significant barrier to evaluating the impact is the fact that community pharmacists in Wisconsin are at the very early stages of EHR adoption. Although community pharmacists we interviewed talked about the value of having access to the EHR, they said that access and use was sporadic. Further, the pharmacists mentioned that trying to fit access to the EHR into the current pharmacy workflow was a challenge which contributed to sporadic access. A toolkit could contain best practices for integrating EHR access into community pharmacy workforce. The problem in Wisconsin is that early adopters to EHR access and use have yet to determine best practices for modifying community pharmacy workflow to facilitate EHR access into the workflow.

There is a need in Wisconsin to bring community pharmacists with EHR access and health systems administrators together to discuss ways in which access and use can be improved. The items discussed and modified in terms of accessing and using the EHR could be disseminated to other community pharmacists in Wisconsin to facilitate access and adoption by community pharmacists. The project PI will connect with staff at the Pharmacy Society of Wisconsin to explore such an idea.

Conclusion

Community pharmacist access to EHRs in Wisconsin is in the very early stages of adoption. Few health systems are aware of the need for community pharmacists to access the EHR, few community pharmacists have access to an EHR, and community pharmacists' use of the EHR is very limited due to problems with logging-in and accessing the EHR, and pharmacy workflow. One conclusion is the need for pharmacy to communicate to providers and health system administrators how EHR access can improve patient care and help health systems achieve system strategic goals. The process to best do this is unknown, but the communication needs to be targeted at external stakeholders. Second, pharmacists mentioned the difficulty of fitting EHR access into pharmacy workflow, how the process currently consists of taking baby steps to move forward, and the need to discuss access and use issues with a working group of pharmacists and health system administrators to share information, problem solve, and improve the process together. Creating such working groups seems like a viable future approach to begin a dialogue and move toward solving some of these issues EHR access can move beyond early adoption.

References:

1. H.R.1 American Recovery and Reinvestment Act 2009. https://www.congress.gov/111/plaws/publ5/PLAW-111publ5.pdf. Accessed September 28, 2018.

2. Gold MR, McLaughlin CG, Devers KJ, et al. Obtaining providers "buy-in" and establishing effective means of information exchange will be critical to HITECH's success. Health Affairs. 2012;31(3):514-526.

3. Beeuwkes Buntin M, Jain SH, Blumenthal D. Health information technology: Laying the infrastructure for national health reform. Health Affairs. 2010;29(6):1214-1219.

4. Webster L Spiro RF. A new world for pharmacy. Pharmacy Today 2010;16:32-44.

5. Blumenthal D, Tavenner M The "Meaningful Use" regulation for electronic health records. N Engl J Med 2010;363(Aug 5):501-504

6. Department of Health and Human Services, Office of the National Coordinator for Health Information Technology Request for Comment Regarding the Stage 3 Definition of Meaningful Use of Electronic Health Records (EHRs) January 14, 2013. https://www.healthit.gov/sites/default/files/hitpc_stage3_rfc_final.pdf. Accessed October 8, 2018.

7. Spiro R. The impact of electronic health records on pharmacy practice. Drug Topics 2012(April):46-54.

8. Office-based Physician Electronic Health Record Adoption. https://dashboard.healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php. Accessed October 8, 2018.

9. Non-federal Acute Care Hospital Electronic Health Record Adoption. https://dashboard.healthit.gov/quickstats/pages/FIG-Hospital-EHR-Adoption.php. Accessed October 8, 2018.

10. Pharmacy e-Health Information Technology Collaborative. The Roadmap for Pharmacy Health Information Technology Integration in US Health Care. http://www.pharmacyhit.org/pdfs/11-392_RoadMapFinal_singlepages.pdf. Accessed October 8, 2018.

11. Avorn J. Medication use in older patients—better policy could encourage better practice. JAMA 20 10;304(14):1606-7.

12. Smith M, Bates DW, Bodenheimer T et al. Why pharmacists belong in the medical home. Health Affairs 2010;29(5):906-13.

13. Reed M, Huang J, Brand R, et al. Implementation of an outpatient electronic health record and emergency department visits, hospitalizations and office visits among patients with diabetes. JAMA. 2013;310(10):1060-65.

14. Academy of Managed Care Pharmacy. Pharmacists as vital members of accountable care organizations. http://www.amcp.org/ACO.pdf/. Accessed October 8, 2018.

15. Keller ME, Kelling SE, Cornelius D, et al. Enhancing practice efficiency and patient care by sharing electronic health records. http://perspectives.ahima.org/enhancing-practice-efficiency-and-patient-care-by-sharing-electronic-health-records/#.ViUWXn6rSM8

16. Bonner L. Model will better connect community pharmacy systems to EHRs and more Community Care of North Carolina partners with pharmacy management systems. https://www.pharmacist.com/article/model-will-better-connect-community-pharmacy-systems-ehrs-and-more. Accessed October 8, 2018.

17. Deninger M. Sharing the EHR. http://www.thethrivingpharmacist.com/2016/02/09/sharing-the-ehr/. Accessed October 18, 2018.

18. Vora J. Access to a Health System's Electronic Medical Record. https://www.pharmacytimes.com/publications/health-system-edition/2015/september2015/access-to-a-health-systems-electronic-medical-record. Accessed October 8, 2018.

19. Skiermont K. Minding the Gap: Why Access to Electronic Medical Records Matters in Specialty Pharmacy. https://www.specialtypharmacytimes.com/publications/specialty-pharmacy-times/2016/september-2016/minding-the-gap-why-access-to-electronic-medical-records-matter-in-specialty-pharmacy. Accessed October 8, 2018.

20. Bonner L. Pharmacists inch closer to accessing EHRs and HIEs. Pharmacy Today. 2016;May:44-47.

21. The Medical Neighborhood: HIT Enablement of Medication-Related Care Coordinationhttps://www.pcpcc.org/sites/default/files/media/pharmacy_e-hit_collaborative_ceh.pdf. Accessed October 8, 2018.

22. Nelson SD, Poikonen J, Reese T, et al. The pharmacist and the EHR. Journal of the American Medical Informatics Association. 2017;24(1):193–197.

23. Yap D. Making sure pharmacy HIT is integrated into the national infrastructure. Pharmacy Today. 2018;(August):46.

24. Marshfield Clinic Health System. Marshfield Clinic Health System is eighth Wisconsin health care system to join AboutHealth. https://www.marshfieldclinic.org/news/news-articles/marshfield-clinic-health-system-joins-abouthealth. Accessed October 8, 2018.

25. Pharmacy Health Information Technology Collaborative. The Roadmap for Pharmacy Health Information Technology Integration in US Health Care:2014-2017 Update. http://www.pharmacyhit.org/pdfs/RoadmapUpdate_2015.pdf. Accessed October 8, 2018.

Appendix A: HIM Manager Interview Guide

Interview Guide:
Exploring the status of community pharmacist access to EHR

Introduction

Community pharmacy access to patients' electronic health record (EHR) is considered an important goal in improving patient care. Health systems have developed EHRs pursuant to meaningful use funding. Very little is known about the prevalence of health systems in Wisconsin providing EHR access to community pharmacies. The overall goal of the present project is to develop and implement an approach to gain more information about community pharmacy access to health systems' EHRs in Wisconsin and to use the information to develop a tool kit to facilitate community pharmacy access to health system EHRs.

Objectives

1. Collect and evaluate information from HIM managers at health systems in Wisconsin about policies and procedures related to community pharmacists' access to and use of EHRs.
2. Collect and evaluate information from community pharmacists who have access to and use EHRs in Wisconsin about their perspectives and experiences on how to access and use EHRs.
3. Design and disseminate an EHR Access and Use Toolkit for community pharmacists, as a resource to guide improved access to and use of EHRs in Wisconsin.

Questions

Section 1: Access to EHR

1. Who is the EHR vendor for your health system?
2. What type of EHR access does your health system provide to community pharmacists?
3. How do community pharmacists get access to the EHR? Please describe the process. The answer could involve a web portal such as EpicCare link and an application process. What information does the application collect? What is the most important information that is considered when allowing or denying access to the EHR?
4. How many community pharmacies/pharmacists have access to the EHR? Are you willing to share names of pharmacies with us? If yes, how can we obtain names of community pharmacies/pharmacists?

Section 2: Factors Associated with Access to the EHR

1. What factors have been most instrumental (i.e. facilitators) in community pharmacists gaining access to the EHR?
2. Describe the evolution of community pharmacist access to the EHR. (How long has access been possible, has type of access changed, what factors have been instrumental in the evolution of community pharmacist access to the EHR?) What is strategic vision for community pharmacist access to EHR?
3. Does the health system have formalized policies and procedures that describe how a community pharmacy can access the EHR? Ask for copies of the policies. What and/or who has influenced the policy-making process? Have pharmacists been involved?

Describe the policy-making process. Is community pharmacist use of the EHR monitored? What areas of the EHR are pharmacists not allowed to access?

4. Does the health system provide training to community pharmacists to use the EHR? If yes, please describe the length, content, and how training is provided. If no, ask why not. (Probe: Does the health system provide any information to community pharmacists about Meaningful Use of the EHR?)
5. What factors have been barriers to community pharmacists obtaining bi-directional access to the EHR? Please describe. What can be done to remove these barriers? (Note: Probe to get example, etc.)
6. What factors have been barriers to community pharmacists gaining access to the EHR? Please describe each barrier. (Note: Probe about view of pharmacist as provider, value of pharmacist in care process, technology issues, privacy of patient data, etc.)
7. Of the barriers you mentioned, which barriers are the most difficult to overcome in your health system and which barriers are the least difficult to overcome in your health system to allow community pharmacists access to the EHR? (Note: Perhaps ask about bi-directional access and read-only access.)
8. Of the barriers you mentioned, what strategies would help overcome the barriers? (Note: Probe about what health systems need to see or have happen to allow community pharmacist access to the EHR. Probe about policy development. Would policy frameworks help overcome some barriers?)

<u>Additional areas of inquiry (considering time)</u>

Health System Pharmacists' Access to EHR

9. What is the role of pharmacists within your health system having access to the health system's EHR? How are health system pharmacists using the EHR, what polices are used for access, what training is provided by the health system. Can you share any case studies (positive or negative) of pharmacist impact using the EHR?
10. Is your health system aware of the Pharmacist eCarePlan?

Linking clinical data with e-prescribing information

11. What e-prescribing platform(s) are used by your health system? Please describe the process of e-prescribing used by the health system and patient and drug information that is communicated to pharmacies with the e-prescribing system.

Section 3: Outcomes Associated with Access to the EHR

1. Do you have any success stories to share that highlight the impact of community pharmacist access to the EHR?
2. Does the health system educate other providers about community pharmacist access to the EHR? If yes, please describe. If no, why not?
3. What activities are pharmacists who have access to the EHR providing? Provide examples such as MTM, immunization documentation, etc. Are these services mentioned in the policies and procedures?

Heath Information Exchanges

What is the status of pharmacists being involved in HIEs? Target HIEs to ask about inclusion of pharmacists. Assess any best practices. Obtain case study successes.

Appendix B: Community Pharmacist Interview Guide

Interview Guide:
Exploring the status of community pharmacist access to EHR

Introduction

Community pharmacy access to patients' electronic health record (EHR) is considered an important goal in improving patient care. Health systems have developed EHRs pursuant to meaningful use funding. Very little is known about the prevalence of health systems in Wisconsin providing EHR access to community pharmacies. The overall goal of the present project is to develop and implement an approach to gain more information about community pharmacy access to health systems' EHRs in Wisconsin and to use the information to develop a tool kit to facilitate community pharmacy access to health system EHRs.

Objectives

1. Collect and evaluate information from HIM managers at health systems in Wisconsin about policies and procedures related to community pharmacists' access to and use of EHRs.
2. Collect and evaluate information from community pharmacists who have access to and use EHRs in Wisconsin about their perspectives and experiences on how to access and use EHRs.
3. Design and disseminate an EHR Access and Use Toolkit for community pharmacists, as a resource to guide improved access to and use of EHRs in Wisconsin.

Questions

Section 1: Access to EHR

1. To which health systems' EHR do you have access?
2. How do you access each EHR? (i.e. Type of portal used, etc.). What is the interaction between pharmacy management system and EHR? Describe typical workflow of using the EHR.
3. How are you using the EHR? Provide examples. (Note: Probe for MTM and immunization documentation. Ask if they will provide a case study that describes their use.) Do you communicate with providers via the EHR? If yes, please describe. If not, please describe how you communicate. What are the advantages of communicating through the EHR?
4. Are you using the EHR to conduct MTM services? If so, how are you documenting MTM services? Are you using PP-EHR? How does MTM using EHR fit with workflow? Ask if they will provide a case study that describes their use.
5. How using for immunization services? How does using EHR for immunizations fit with workflow? Ask if they will provide a case study that describes their use.
6. Overall, what are the biggest barriers and facilitators to using the EHR? Please describe. What advice can you offer to other community pharmacists related to accessing and/or using EHRs?
7. Are you aware of the term "meaningful use of EHR"? If so, how were you made aware of meaningful use of EHR?
8. Are you using the Pharmacist eCarePlan, and, if so, how is it working?