Integrating Pharmacists into Health Information Exchanges

August 22, 2014

Pharmacy Health Information Technology Collaborative

Table of Contents

1. Executive Summary

Health information exchange (HIE) is the external sharing of health information electronically across health entities. These exchanges will ensure that the meaningful use of the information being shared remains accurate and readily interpretable.

The goal of HIE is to ensure that health care professionals are able to receive and submit clinical information through electronic data exchange with current work processes in the delivery of care for all patients. This process will enable stakeholders to better leverage data to facilitate patient care and therapeutic outcomes. In addition to specific patient opportunities, public health organizations will be better equipped to monitor overall health situations and assess regional and national health trends.

Adoption of HIE will integrate the current fragmented efforts of health care providers to provide optimum care as the patient transitions through multiple providers. This integration will ensure patient health and safety in a complete system of care that tracks and subsequently guides the provider's expertise. In this type of continuum-of-care framework, not only are there inherent patient benefits but the entire industry will realize gains that will complement the national health care initiatives clinically and economically.

HIEs are a critical component of the success of the American Recovery and Reinvestment Act of 2009. Improving the U.S. health care system requires simultaneous pursuit of three aims: improving the experience of care, improving the health of populations, and reducing per-capita costs of health care.[1] Many initiatives at local, regional, and state levels define and provide regulations regarding the means of electronic exchange of information.

A major challenge that pharmacists face in the new era of electronic health information is to be recognized by Medicare and Medicaid as eligible providers of medication-related patient care services. Dynamic to the changing landscape is the pharmacist's role in these HIEs. Pharmacists are critical members of the patient's health care team who make meaningful medication management contributions. We provide both form and function for HIE efforts on local and national levels. Pharmacists are central to the health care model and are positioned to provide bidirectional electronic exchange of information that will ensure HIE standards and sustainability.

2. PURPOSE

This paper will provide a case for best practices and guidelines to advance optimal pharmacist integration for health information exchange. Adoption and widespread use of HIE will improve patient safety and treatment by ensuring that health information is available to all health care professionals at the point of care. Exchange of health information will, therefore, facilitate coordination of care among physicians, pharmacists, and other health care providers. HIE will ensure more complete patient records, prevent redundant paper work, and increase efficiencies in the retrieval of records using a query exchange related to patients' medications. Additionally, pharmacists will be able to receive and submit clinical information through electronic data exchange with current processes in the delivery of care for all patients.

This paper provides guidance not only for pharmacists but for collaborative practices with recognized members of the health care team. The reader should have an understanding of the pharmacist's role in HIEs and the way that role contributes to pharmacists' efforts and the overall success of clinical outcomes.

GOALS:

- Promote pharmacist contribution to existing programs and policies in the bidirectional exchange of health information.

- Leverage pharmacists' position as the medication experts to integrate existing initiatives into the infrastructure for HIE.

- Ensure that pharmacists communicate effectively and efficiently as a member of the patient's health care team.

- Develop processes using technology that enable the pharmacist to be an integral part of the patient's health care team.

- Ensure that pharmacists have the information technology tools to be members of the health care team.

- Promote standardization of medication management documentation using continuity of care documents (CCD) and secure communication tools such as DIRECT Project[2] and state HIEs.[3]

Pharmacists use a patient-centered approach to communicate, document, and collaborate, in a team-based approach with other health care providers to optimize patient health and medication outcomes.

Using evidence-based practice principles and health information technology (HIT), pharmacists will collect, document, and prepare information for exchange. Project teams will need to consider associated workflow changes because the contribution by pharmacists to these exchanges would include but not be limited to the following:

- Collection of medication-related patient information

- Assessment of medication-related issues

- Development of a patient-specific medication plan of care

- Implementation of the care plan

- Follow up by monitoring of care or patient transition as needed

    (See Appendix page 13 for a graphic defining these points.)

It is essential that pharmacists are involved in the bidirectional exchange of clinical information in the delivery of care for all patients. Integrated into this exchange must be health information that is generated by pharmacists as well as other health care providers. Opportunities for strengthening the pharmacist's role in existing programs and policies include ensuring that the pharmacist's contribution is identified in state and regional HIEs, expanding the pharmacist's role in the adoption and use of the meaningful use of the electronic health record (EHR) through the use of the pharmacist/pharmacy provider EHR, and ensuring that pharmacists are involved in the bidirectional exchange of clinical information.

As pharmacists, we collect information from different sources. In order to be interoperable and fully electronic using HIEs, we need to ensure that pharmacists collect and exchange information bidirectionally. Using e-prescribing as an example, pharmacists receive prescription information, but if there's a question related to that prescription, the pharmacist still has to pick up the telephone or send a fax to the prescriber; these are not bidirectional, real-time exchanges of information. Use of HIEs in a bidirectional way can assist pharmacists not only in receiving patient-related information but in exchanging patient-related information, as in

the following examples:

- Allergy adherence and patient history

- Active medication and inactive medication lists

- Communicating drug-related problems and their recommended solutions

- Medication management plans and patient self-care plans

- Comprehensive medication review patient take-away (Medicare Part D requires a specific format)

- Point-of-care laboratory data

- Collection of clinical data (e.g., blood pressure, monofilament testing, pulse, weight, body fat percentage)

- Gaps in care reporting (quality)

- Recommendations for testing, referrals, etc.

Pharmacy and pharmacist-provided patient care services must be included in local, state, and regional HIEs by providing and receiving key clinical and medication information. Pharmacists' integration into HIEs will provide safer and more current medication-related data, improve communication among health care team members, improve the overall quality of patient outcomes, and assist providers in meeting their meaningful use of EHR measurement goals.

RECOMMENDATIONS FOR ACTION:
- Meet with the Office of the National Coordinator for Health Information Technology (ONC), including the federal advisory committees and CMS, to recommend that pharmacists are recognized as eligible providers of medication-related patient care services and meaningful users of and contributors to the EHR.

- Integrate pharmacies and pharmacists into HIEs.

- Ensure that pharmacists in all practice settings are active participants in local, state, and regional HIEs.

- Encourage system vendors to facilitate pharmacist participation in HIEs by developing effective and efficient software platforms for communicating HIE-gathered information bidirectionally in clear and concise ways.

3.   OVERVIEW

The American Recovery and Reinvestment Act of 2009 set ambitious goals for the nation to integrate information technology into health care delivery. The Health Information Technology for Economic and Clinical Health (HITECH) Act segment of the bill provides incentives over a timeline for Medicare and Medicaid providers to use certified electronic health records to achieve specified improvements in health care and implement a nationwide EHR system by 2014. These incentives promote the meaningful use of EHRs that support safe and effective medication use, continuity of care, and access to the patient care services of pharmacists in conjunction with other members of the patient care team.[4]

Medicare and Medicaid incentive payments will total $27 billion over a 10-year period, with $17 billion designated for EHR development. Pharmacists will not receive direct funding or incentives, but pharmacy schools may receive grants for incorporating electronic personal health technology into clinical education. The nation's goal for EHRs is to reduce costs through less paperwork, improved safety, and reduced duplication of testing; and improve health by contributing medication-related information to the patient's entire health information record for the patient and the patient's health care providers. Electronic connectivity through e-prescribing—the paperless, real-time transmission of standardized prescription data among prescribers, pharmacies, and payers—places pharmacists squarely within the health care technology team.

The Pharmacy Health Information Technology Collaborative, a group of nine national pharmacy organizations and associate members, advocates integrating the pharmacist's role of providing patient care services into the national HIT interoperable framework. As already stated, a major challenge that pharmacists face in the new era of electronic health information is to be recognized by Medicare and Medicaid as eligible providers of medication-related patient care services and critical members of the patient's health care team and to make meaningful medication management contributions.

BENEFITS OF MEANINGFUL USE OF EHRS

By adopting EHRs in a meaningful way, health care providers will be able to do the following:

- **Understand more about their patients.** Information in EHRs can be used to coordinate and improve the quality of patient care.

- **Enhance decision making.** With more comprehensive information readily and securely available, health care providers will have the information they need about treatments and conditions—even best practices for patient populations—when making treatment decisions.

- **Provide more cost-effective health care.** EHRs require an initial investment of time and money, but health care providers who have implemented them have reported reductions in the amount of time spent locating paper files, transcribing, and calling labs, pharmacies, or provider offices; more accurate coding; less duplication of efforts; and reductions in reporting burden.

HEALTH INFORMATION TECHNOLOGY[5]

HIT can provide critical information about the patient across all stages of care. It can support communication among members of the care team, enable more timely and accurate performance measurement and quality improvement processes, and improve patients' accessibility to their medical records and overall care team. In 2012, the Department of Health and Human Services (HHS) officially launched the accountable care organizations (ACO) program. The Academy of Managed Care Pharmacy released a document illustrating the important role that pharmacists play on health care teams, including examples from six organizations: Advocate Physician Partners, Geisinger Health System, Group Health Cooperative, Health-Care Partners, Hill Physicians Medical Group, and Kelsey-Seybold Clinic.[6] Another example of pharmacy's involvement in ACOs can be demonstrated by the inclusion of Walgreens as part of an ACO program.[7] In addition, the American Pharmacists Association (APhA) produced a series of eight ACO issue briefs that will help inform pharmacists about this evolving health care delivery system.[8]

An accountable care system requires three types of clinical HIT functions: electronic health records, personal health records (PHRs), and health information exchanges. While these

may be provided as separate applications, or ideally as an integrated technology platform, HIT must provide at least some "traditional" core capabilities, such as support of the documentation of a patient's problems and care plan, e-prescribing, and HIE that supports the transfer of care summaries and procedure reports among health care providers.

In the current environment, pharmacists predominantly share information with physicians by telephone or fax. However, there are currently a few pockets where pharmacists are able to interface with hospitals or integrated systems that can populate medication-related data in an EHR. Internal communication within a hospital or health system occurs, yet the communication outside the integrated network is, at best, inconsistent. More advanced EHR capabilities are required in various practice settings, ranging from basic role-based access for care team members (i.e., appointment scheduling, care plan documentation, patient education, and e-prescribing), to secure messaging and shared access to information with other providers for consultation and collaboration.

The EHR captures necessary patient data (e.g., medical history, medication and allergies, immunization status, lab results, radiology images, vital signs, personal stats, and billing information) and supports care-related transactions such as e-prescribing. Optimally, it should also do the following:

- Allow identification of those patients for whom the provider is accountable. HHS final regulations for ACOs outline how identification of patients is allowed, how providers are identified, and how providers are accountable.[9]

- Provide registry capabilities to track the care provided to a patient and assess the degree to which providers are appropriately managing cohorts of patients.

- Provide clinical decision support to help ensure that evidence-based medicine is appropriately delivered.

- Enable workflow integration for optimal collaboration of care.

- Measure quality and efficiency using agreed-upon performance measures.

- Include communication tools and functions that support team-based care.

These advanced EHR capabilities range from role-based access to secure messaging with other providers for consultation and collaboration. Examples include providers meeting with a consulting specialist, a clinician seeing a patient in the emergency department, or a pharmacist seeing the patient in a community pharmacy for care or consultation.

PHRs will need to provide patients with access to their pertinent data and provide access to a range of personal health management and health information tools, including secure communication with providers and other care team members. Robust health information exchange is essential to allow participating providers to routinely share clinical data and communicate with their patients and with each other.

There is increasingly significant access to relevant information and analytics that can draw on clinical, claims, and pharmacy data. This information can provide a foundation for assessing performance, benchmarking against regional norms, delivering timely feedback to participants, and adopting trusted measures of individual and system performance.

The ultimate goal of implementing HIT is to create interconnectivity that allows health information exchange along with integrated workflow, analytics, decision support, and other technology tools that support the health care team. The desired result is that health care is coordinated and delivered in a more efficient manner across a continuum of care.

4.   Discussion

This section provides further discussion about health information exchanges. The value of pharmacists, in subsection 4.1, is discussed first, to demonstrate the value of the pharmacist's role in health care in sharing clinical information electronically with other health care providers. Examples of pharmacists exchanging health information are provided in the case studies in subsection 4.2. Last, further steps for strengthening the pharmacist's role in HIE are discussed in subsection 4.3.

4.1.   THE VALUE OF PHARMACISTS

Research demonstrating the value of the pharmacist's role in health care highlights the importance of the pharmacist's ability to share electronic clinical information with other health care providers. The value of the pharmacist's role in health care has been established in a variety of settings, including the following areas of patient care:

- Disease management models (e.g., diabetes management, Asheville Project)

- Medication therapy management (MTM) and care coordination

- Team-based care

- Outcomes research

The 2011 Surgeon General's Report *Improving Patient and Health System Outcomes Through Advanced Pharmacy Practice* comprehensively shows the value of pharmacists in providing these services. A pivotal piece of the successful use of pharmacists' knowledge and skills includes their continued efforts to leverage HIT. HIT has long been recognized as a key means for supporting improvements in health care quality, safety, and efficiency. With the passage of the HITECH Act in 2009, many health care collaborations were formed to support and advance HIT to the fullest extent. According to the Patient-Centered Primary Care Collaborative , HIT "can provide critical information about the patient to the entire care coordination team across all stages of care, support physician–patient communication, enable more timely and accurate performance measurement and improvement, and improve accessibility of the physician practice to the patient."[10]

The pharmacy profession has traditionally been an early adopter of HIT and recognizes the benefits of HIT in optimizing patient care and outcomes-based measurement. In 2010, nine national pharmacist associations formed the Pharmacy HIT Collaborative to focus on and ensure that the technology needs of the pharmacy profession advance with the federally incentivized progression of HIT infrastructure in the United States. The goal of this collaborative was to define a common vision for HIT to improve patient care quality and outcomes through the integration of pharmacists' patient care services into the national EHR infrastructure. The focus of the Collaborative is to "ensure the meaningful use of standardized EHR to support safe, efficient, and effective medication use and continuity of care and to provide access to the patient care services of pharmacists with other members of the interdisciplinary patient care team. The Collaborative ensures that the pharmacist's role of providing patient-care services is integrated into the national health IT interoperable framework."[11]

The Collaborative is pursuing EHR standards that support the delivery, documentation, quality measures, and billing for pharmacist-provided patient care services across all care settings. Thus, the pharmacy profession has already realized the clinical utility of electronic health data and has positioned itself well ahead of the curve for standardized outcomes-related data collection and enhanced electronic data accessibility for delivering quality patient care services.

Under collaborative practice agreements, pharmacists work in collaboration with physicians and primary care clinicians to help patients, particularly those with chronic conditions, manage their medication regimens in the following ways:
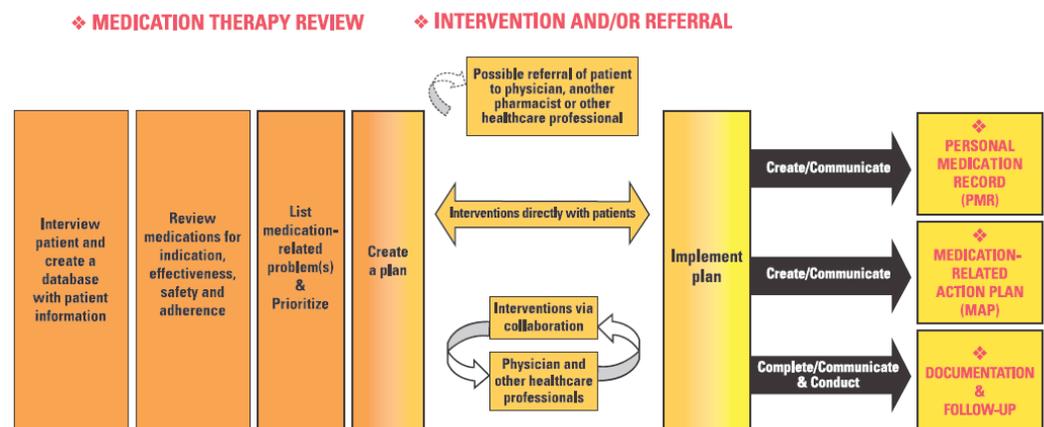
- Performing patient assessments and developing therapeutic plans
- Utilizing authorities to initiate, adjust, or discontinue medications
- Ordering, interpreting, and monitoring appropriate laboratory tests
- Providing care coordination and other health care services for wellness and prevention
- Developing partnerships with patients for ongoing and follow-up care

Historically, pharmacists have been intimately involved in solving medication-related problems as providers of direct care. Since the 1970s, pharmacists' patient care services have been expanding under professional initiatives such as clinical pharmacy, pharmaceutical care, and MTM. Diagram 1 demonstrates the MTM Core Elements Service Model and points out the following information that needs to be transmitted to other providers:

- Patient medication experience
- Potential problems
- Comprehensive and accurate medication list, including OTCs
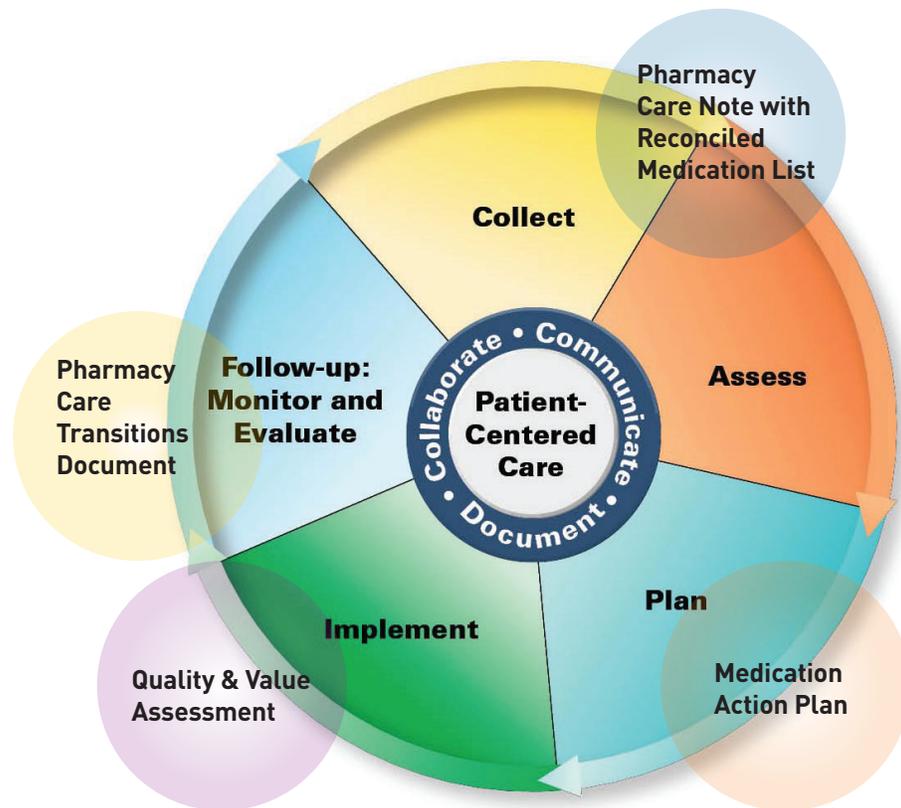- Medication-related action plans

The Medication Therapy Management Core Elements Service Model

The diagram below depicts how the MTM Core Elements (❖) interface with the patient care process to create an MTM Service Model.

4.2. CASE STUDIES

The following case studies describe the basics of how pharmacists connect with HIEs. Diagram 2 outlines a proposed draft process of care that is being developed for pharmacists providing patient care and the superimposed circles show what a pharmacist can do from an electronic structured document standpoint. As an example, the pharmacist creates a pharmacy care note that documents the collection, assessment, and development phases using a reconciled medication list to exchange information; he or she then develops those plans

and implements them. As part of patient engagement, the pharmacist uses a medication action plan. During the" evaluate" phase, the pharmacist uses quality and value assessment documents. The pharmacist uses a pharmacy care transition document during the "monitor-and-transition" phase.

The following case studies show why the process flow is useful and how HIT can affect the process of care.

CASE A

A primary care physician (PCP) electronically prescribed five medications for a Medicare Part D patient after the patient's yearly physician visit. Four of the medications were continued from the previous visit. This patient qualified for a yearly comprehensive medication review (CMR) as defined by the Part D plan's MTM program.

The pharmacist then received the electronic prescriptions, and the pharmacy management system alerted the pharmacist that the patient's prescription drug plan would authorize a CMR using the National Council for Prescription Drug Programs standardized transaction (an electronic transaction for a payer to request MTM services from a provider). Mail and fax are other ways to receive a CMR request. Under the Part D plan's business agreement, the MTM-certified pharmacist in charge of the pharmacy's MTM service program notified the patient and the PCP that a CMR was needed. The pharmacy management system adopted the pharmacist EHR functionality, and the pharmacy management system was certified for the meaningful use of the EHR criteria.

Using the pharmacy's e-prescribing network, the pharmacy management system queried the PCP's EHR, the patient's personal health record, and the state HIE for the patient's continuity-of-care documents, which contained information on the patient's allergies, chief complaints, active medications list, diagnosis, family history, immunizations, functional status, social history, vital signs, laboratory data, etc. The patient scheduled a CMR with the MTM

pharmacist. The result of the CMR was electronically exchanged with the PCP's EHR and the medication action plan was electronically sent to the patient's personal health record.

CASE B

A patient who had been in a car accident was discharged home post–hospital surgery with a broken arm and leg. The patient's discharge summary, in the form of a continuity-of-care document, was electronically transmitted to the PCP and home health care agency coordinating the patient's rehabilitation therapy. The discharge summary contained information about the patient's allergies, chief complaints, active medications list, diagnosis, family history, immunizations, functional status, social history, vital signs, and laboratory data including electronic x-ray images. An electronic prescription for a Schedule C-II controlled substance was transmitted to the patient's local pharmacy using an e-prescribing network. Using the pharmacist EHR, which is not confined to the four walls of a pharmacy, the clinical pharmacist electronically queried the patient's hospital discharge summary and electronically coordinated a pain medication action plan with the PCP and the home health care nurse.

CASE C

An elderly patient, whom the pharmacist did not know, asked about getting her influenza immunization. To ensure that the patient hadn't already received her immunization for the year, the pharmacist used the pharmacy management system's EHR to query the PCP's EHR and the public health department for the patient's immunization history, allergy information, and other pertinent information in the form of a CCD. The query indicated that the patient had no known allergies and had received an influenza vaccine last year and a pneumococcal immunization the previous year. The pharmacist administered the influenza vaccines and electronically transmitted the new influenza vaccine information to the PCP and to the public health department.

4.3.   NEXT STEPS FOR STRENGTHENING THE PHARMACIST'S ROLE

Integral to this optimal model of health care, a patient's health information must be generated by all health care disciplines, not just the physician. Opportunities for strengthening the pharmacist's role in existing programs and policies include ensuring that the pharmacist's contribution is identified in state and national HIEs, expanding the pharmacist's role in the adoption and meaningful use of the EHR through the use of the pharmacist/pharmacy provider EHR, and ensuring that pharmacists are involved in the bidirectional exchange of clinical information.

Organizations have EHR teams or a business analyst department that make clinical decisions, and pharmacists are often not involved in making those decisions unless they actively become members of those teams. Pharmacists are encouraged to become involved at the organizational level within their technology teams:

- Meet with the ONC, as well as the federal advisory committees and CMS, to recommend that pharmacists are recognized as eligible providers of medication-related patient care services and meaningful users of and contributors to the EHR.

- Integrate pharmacies and pharmacists into HIEs.

- Ensure that pharmacists in all practice settings are active participants in local, state, and regional HIEs.

- Encourage system vendors to facilitate pharmacist participation in HIEs by developing effective and efficient software platforms for communicating HIE-gathered information bidirectionally in clear and concise ways.

Adoption of HIE will improve patient safety and treatment by ensuring that health information is available to all health care professionals at the point of care. Other processes that will improve the quality of the system are quality improvement, avoiding repetitive assessments, and increasing efficiencies.

E-prescribing models of HIE are very successful in the form of "pushing" prescription information from the prescriber to the pharmacist, but they don't allow for bidirectional clinical exchange in which the pharmacist can communicate back to the prescriber.

5.   Conclusion

Every day, health care professionals make decisions based on limited information, a practice that can be a recipe for disaster relating to patient health and safety. Health information exchange is no longer just an option. It is critical, clinically and economically, to our profession and to the health care system. To facilitate the pharmacist's role in the new era of electronic health information, it is important for pharmacists to be recognized by Medicare and Medicaid as eligible providers of medication-related patient care services and as critical members of the patient's health care team.

This paper demonstrates the strong evidence to support the pharmacist's role in the adoption and practice of HIE. The current state of patient care is fragmented with no standard method of communication among a patient's multiple health care providers. Communication is internal in a primarily vertical manner, and horizontal external communication is, at best, inconsistent. Best-practice guidelines presented in this paper include pharmacists practicing within a bidirectional electronic exchange of health information, leading to a complete collection of information necessary to assess the patient's overall medication plan and improve health outcomes. By providing a more complete picture of the patient's health profile, this exchange will positively affect the following:

- Utilization reviews of drug–drug interactions and therapy duplication

- Gaps in care, including adherence and omissions

- Allergic reactions and subsequent patient harm

- Duplicative testing

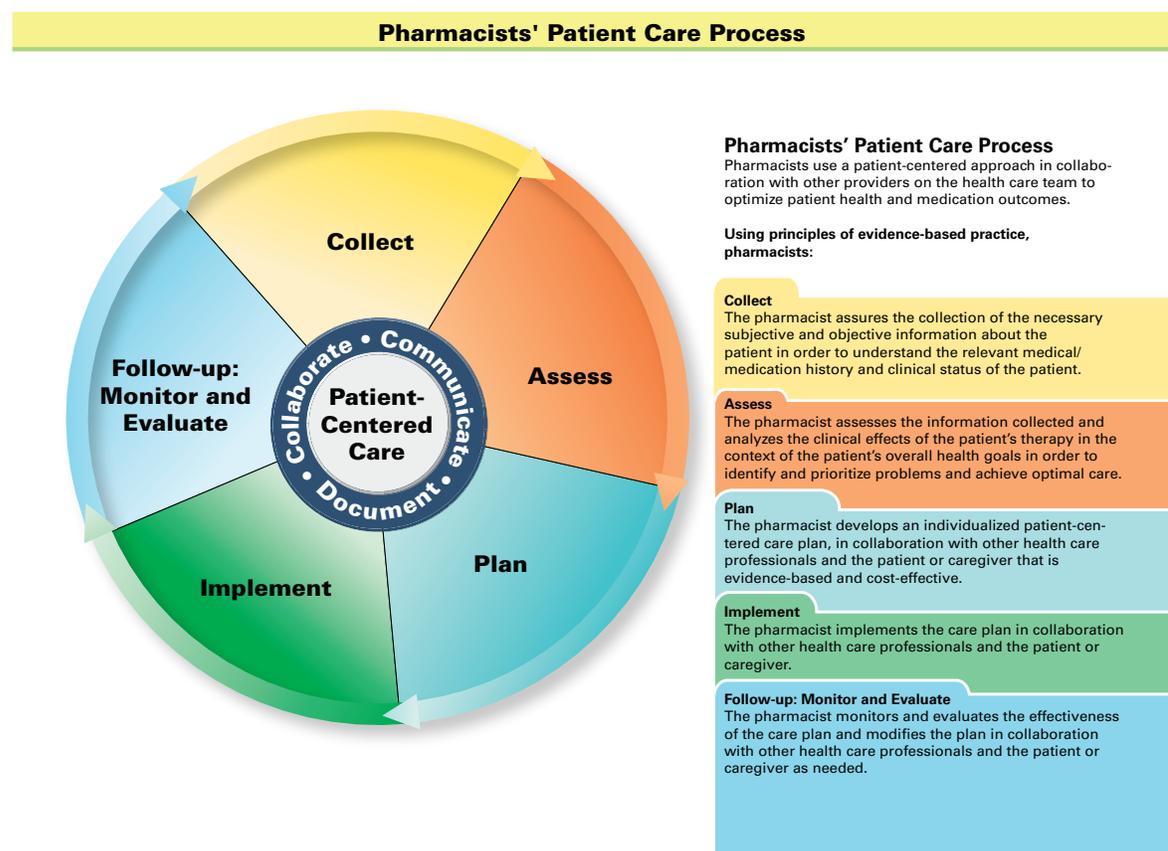- Confusion among health care providers and patients

Real-time HIE guarantees timely and secure access to the information necessary for the optimal care of individual patients. The political and professional climate is currently positioned to support these exchanges and the pharmacist's collaborative role in a patient-centric care model. Pharmacists' responsibilities in medication expertise, medication management, medication dispensing, patient health monitoring, and the provision of medication and disease education uniquely position them to collaborate fully with the entire patient care team and ensure that the health and safety of the patient are well represented.

6.   Appendix: Diagram of a Standardized Pharmacist Patient-Centered Collaborative Care Process

Figure 1 depicts a proposed standardized pharmacist patient-centered collaborative care process for pharmacists providing medication therapy management (MTM) services.

The pharmacists' patient care process described in this illustration was developed by examining a number of key source documents on pharmaceutical care and MTM. Patient care process components in each of these resources were catalogued and compared to create the following process that encompasses a contemporary and comprehensive approach to patient-centered care that is delivered in collaboration with other members of the health care team. (Source: *Pharmacists' Patient Care Process*, May 29, 2014. *http://www.pharmacist.com/sites/default/files/JCPP_Pharmacists_Patient_Care_Process.pdf*)

Pharmacists' Patient Care Process

Pharmacists' Patient Care Process
Pharmacists use a patient-centered approach in collaboration with other providers on the health care team to optimize patient health and medication outcomes.

Using principles of evidence-based practice, pharmacists:

Collect
The pharmacist assures the collection of the necessary subjective and objective information about the patient in order to understand the relevant medical/medication history and clinical status of the patient.

Assess
The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care.

Plan
The pharmacist develops an individualized patient-centered care plan, in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost-effective.

Implement
The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver.

Follow-up: Monitor and Evaluate
The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed.

7.   REFERENCES

[1] Berwick DM, Nolan TM, Whittington J. The triple aim: care, health, and cost. Health Affairs. May 2008;27:759–69. Accessed at http://content.healthaffairs.org/content/27/3/759.abstract, April 1, 2013.

[2] HealthIT.gov. DIRECT Project. Accessed at www.healthit.gov/policy-researchers-implementers/direct-project, July 15, 2013.

[3] HealthIT.gov. State Health Information Exchange. Accessed at www.healthit.gov/policy-researchers-implementers/state-health-information-exchange, July 15, 2013.

[4] Pharmacy Health Information Technology Collaborative. The Roadmap for Pharmacy Health Information Technology Integration in U.S. Health Care. Accessed at www.pharmacyhit.org/pdfs/11-392_RoadMapFinal_singlepages.pdf, April 1, 2013.

[5] RelayHealth. Accountable Care—Concepts and Roles for Pharmacists. Accessed at *www.relayhealth.com/resource-library/white-papers/Accountable-Care-Concepts-and-Roles-for-Pharmacists-158795495.html,* April 1, 2013.

[6] Academy of Managed Care Pharmacy. Pharmacists as Vital Members of Accountable Care Organizations. Accessed at www.amcp.org/WorkArea/DownloadAsset.aspx?id=14916, March 27, 2013.

[7] Frost P. Walgreen in 3 'accountable care' groups approved by HHS. Chicago Tribune. January 10, 2013. Accessed at www.chicagotribune.com/business/breaking/chi-walgreen-in-3-accountable-care-groups-approved-by-hhs-20130110,0,13903.story, March 27, 2013.

[8] American Pharmacists Association (APhA) Accountable Care Organization (ACO) Briefs. Accessed at http://www.pharmacist.com/apha-accountable-care-organization-aco-briefs, July 28, 2014.

[9] Federal Register; 42CFR §425: November 2, 2012. Accessed at www.gpo.gov/fdsys/pkg/FR-2011-11-02/pdf/2011-27461.pdf, April 1, 2013.

[10] Giberson S, Yoder S, Lee MP. Improving patient and health system outcomes through advanced pharmacy practice: a report to the U.S. Surgeon General. Office of the Chief Pharmacist. U.S. Public Health Service. Dec 2011. Accessed at www.accp.com/docs/positions/misc/Improving_Patient_and_Health_System_Outcomes.pdf, July 15, 2013.

[11] Pharmacy Electronic Health Information Technology Collaborative. Accessed at www.pharmacyhit.org, July 28, 2014.

8. Acknowledgements

Associations