U.S. Department of Health and Human Services

Office of the National Coordinator for Health Information Technology

Medication Gaps

AHIC Extension/Gap

December 31, 2008

Table of Contents

1.0 Preface and Introduction

1.1 Background

In April and June of 2008, the American Health Information Community (AHIC) approved a recommendation to develop documents that address extensions/gaps from the use cases published between 2006 and 2008. One of the extensions/gaps prioritized for subsequent processing in the national health agenda activities in 2009 was Medication Gaps. AHIC specifically requested that the Medication Gaps Extension/Gap address the electronic exchange of medication information between Electronic Health Record (EHR) systems, pharmacy systems, and other related systems. AHIC also requested the document address electronic prescribing (e-Prescribing) and interoperability needs related to medications in a long term care setting.

This extension/gap document is being developed by Office of the National Coordinator for Health Information Technology (ONC) to address AHIC priorities and provide context for national health agenda activities, beginning with the selection of harmonized standards by the Healthcare Information Technology Standards Panel (HITSP). Components that need to be considered during the standards identification and harmonization activities include standardized vocabularies, data elements, datasets, and technical standards that support the information needs and processes of clinicians, pharmacists, long term care staff, and healthcare payors. This document is the Final AHIC Extension/Gap. Feedback received on the Draft AHIC Extension/Gap has been considered and incorporated where applicable into this document. HITSP is expected to reuse standards, where applicable, from standards previously recognized by the Secretary of Health and Human Services, to specify and constrain how standards are to be used to advance interoperability and to work with standards development organizations to see that gaps in standards are filled.

1.2 Progress to Date

To date, the national health agenda, including the activities of AHIC and HITSP, has not fully addressed all of the interoperability requirements for medication-related information exchange for e-Prescribing and long term care medication uses.

Previously published AHIC use cases incorporate several concepts that have been evaluated by HITSP and could be leveraged during standards harmonization for this extension/gap.

- The 2007 Medication Management Use Case includes needs for communicating medication and allergy information between clinicians and pharmacists in inpatient and ambulatory settings; and
- The 2008 Consultations and Transfers of Care Use Case includes needs for communicating medication information between facilities and clinicians during transitions in care.

2.0 Overview and Scope

2.1 Document/Request Overview

This extension/gap document is focused on information needs to facilitate the electronic exchange of medication and allergy information. The Medication Gaps Extension/Gap Document is divided into the following sections:

- Section 1.0, Preface and Introduction, describes the progress to date, the additional priorities identified by the AHIC, the resulting extensions/gaps, and their purpose;
- Section 2.0, Overview and Scope, describes the sections of an extension/gap document, the request being made to HITSP, and the scope of that request;
- Section 3.0, Functional Needs, describes the combination of end-user needs and system behaviors which support interoperability and information exchange;
- Section 4.0, Stakeholder Communities, describes individuals and organizations that participate in activities described in this extension/gap;
- Section 5.0, Issues and Obstacles, describes issues and obstacles which may need to be planned for, addressed, or resolved to achieve the capabilities described in the extension/gap;
- Section 6.0, References to Use Case Scenarios, describes various scenarios and information exchanges which assist in the communication of information. Scenarios may re-used from previously published 2006 – 2008 Use Cases and/or new scenarios may be described;
- Section 7.0, Information Exchange, describes information exchange capabilities which are needed to support the scenarios and the high-level role of information exchange;
- Section 8.0, Dataset Considerations, identifies specific information opportunities relevant to this extension/gap document that may support future identification, development, and harmonization of standards;
- Appendix A, Glossary, provides contextual descriptions of key concepts and terms introduced in this extension/gap document; and
- Appendix B, Analysis and Examples, describes current public and private efforts to enable interoperable e-Prescribing.

2.2 Scope

Medication Gaps can be described as those areas where existing medication standards could be improved to meet the functional needs of clinicians and pharmacists who participate in medication-related information exchange.

Therefore, requirements for Medication Gaps can be summarized as:

- The ability to expand and implement standards for communicating medication and allergy information, including those related to electronic prescribing (e-Prescribing) such as formulary, prior-authorization, SIG, and terminology; and
- The ability to expand and implement standards to support the specialized needs of long term care medications.

The identification, development, and harmonization of standards to support the interoperability associated with medication gaps requires additional work with standards and professional organizations, care delivery organizations, and organization providing information technology services and products to the healthcare industry. As mentioned in Section 1.0, the needs expressed here have not yet been fully addressed by the national health agenda's standardization efforts. Examples of gaps in industry standards are outlined in the upcoming sections of this extension/gap document.

3.0 Functional Needs

This section describes a combination of end-user needs and system behaviors to support users during the exchange of medication and allergy information between EHR systems, pharmacy systems, and other systems. Support for this exchange includes the development of interoperability standards for vocabularies, data elements, datasets, and other technical components that are implicit in these functional needs. Rather than an all-inclusive list of functional requirements, key capabilities are outlined below. The descriptions in this section are not intended to prescribe policy nor propose architectures required to implement capabilities.

A. The ability to electronically conduct real-time (i.e., at the point of care) eligibility, benefits checking, and prior-authorization activities that include formulary considerations established by the payor.

    i. When prescribing, a clinician may need the ability to review a formulary for a patient and payor to consider various medication alternatives, including those that may require prior-authorization. Similarly, when filling a prescription, a pharmacist may need the same ability to access the payor's formulary, including prior-authorization considerations. In each case, formulary information may include the recommended use of medication brands, generics, medication substitutions, alternatives, specialty pharmaceuticals, distributors, and other information.

        a. Some formulary choices may be available but also identified as requiring prior-authorization from the payor before they can be prescribed or dispensed. Clinicians and pharmacists may benefit from improved real-time interactions with the payor to request and receive prior-authorization for the use of these medications.

B. The ability to describe instructions to the patient regarding the use of a medication in a structured, interoperable SIG within an electronic medication prescription.

    i. Clinicians and pharmacists provide medication instructions to the patient, such as how a drug is to be taken, through details in a SIG (for *Signatura*), a component of a prescription. This SIG is communicated to the pharmacist as part of a prescription. When fulfilling the prescription, the pharmacist reviews the SIG and determines how to best convey the instructions to the patient. Pharmacists may also communicate with the prescribing clinician during this activity.

C. The ability to integrate medication data from multiple sources to form a comprehensive view of the patient's medication regime. This is of particular value in

the long term care (LTC) setting that includes multiple parties such as facility nurses, clinicians, consulting clinicians, dispensing pharmacists, and consulting pharmacists.

i. Clinicians who conduct medication reconciliation, including when a patient is admitted or discharged, when a level of care changes, when important patient clinical or administrative information changes, or at other times, may need the ability to communicate patient demographic and medical information to a dispensing pharmacy.

ii. Consulting pharmacists, who regularly review a patient's medication regime, may need the ability to review all medication-related documentation for a patient within the EHR maintained at the facility. They may also need to provide notes and observations for the facility staff and clinicians through this EHR.

iii. Pharmacies supporting LTC facilities may need the ability to provide patient-specific medication administration instructions to LTC facility staff.

iv. Patients may benefit from coordinated communications between the facility and the dispensing pharmacy related to the availability of medications within the LTC facility inventory, this communication may need to support: the reordering of patient medications; communications regarding medications/supplies held at the facility; and communications regarding discontinued and unused medications.

4.0 Stakeholder Communities

Examples of stakeholders who may be directly or indirectly involved in the exchange of medication and allergy information have been listed below. Specific descriptions of each type of stakeholder can be found in the previous 2006 – 2008 AHIC Use Cases.

Stakeholders that may be directly involved in the exchange of medication information may include: Clinicians, Pharmacists, Clinical Support Staff, LTC Facility Staff, Consumers, Patients, and Healthcare Payors.

Stakeholders that may assist in medication information communication may include: EHR System Suppliers, PHR System Suppliers, Pharmacy System Suppliers, Pharmacy Benefits System Suppliers, and Health Information Exchange Organizations.

Stakeholders that may be sources or recipients of medication information may include: Pharmacy Benefit Managers, Medication Network Intermediaries, Healthcare Entities, Patients, and Consumers.

Regarding the roles of pharmacists and clinicians, past use cases have focused on some of the activities within pharmacists' and clinicians' roles without attempting to reflect all of the possible activities of either role. Note that pharmacists on some occasions act as clinicians, for example when conducting medication therapy management. This activity is widely regarded as appropriate for improving patient health and safety and, in many settings, pharmacists play a central role in diagnosing and treating patients, particularly with respect to medication management. When considering these additional activities, it may be worth considering these pharmacists' information needs as better reflected by the needs described as clinicians' information needs.

5.0 Issues and Obstacles

A number of issues in today's health information technology environment are obstacles to achieving healthcare data standardization and interoperability to promote patient safety, reduce healthcare costs, and increase the value of electronic health information exchange. Some general issues were described within the 2006 – 2008 AHIC Use Cases. Examples of specific issues and obstacles related to the Medication Gaps discussed in this document are outlined below.

A. Medication Terminology and Standardization:

i. A standardized medication terminology vocabulary that supports the needs of clinicians and pharmacists may be needed. Existing terminology vocabularies may not have sufficient compatibility and clinicians may have unmet needs for describing medications and clinical preferences. Pharmacist terminology vocabulary may be adequate for some communications, but efficient clear communications governing clinician-pharmacist interactions may benefit from a stronger standard that supports a comprehensive medication terminology vocabulary. Other aspects of medication information flow would also be served by an improved standard in this area.

a. Without a standardized medication vocabulary, many aspects of medication-related information exchange may be difficult, which may negatively affect interoperability and patient health.

B. Financial Barriers and Incentives:

i. One of the principal obstacles to wider adoption of EHR and other medication-related systems is the cost of acquiring and maintaining these systems. Appropriate financial incentives to promote the adoption and use of these systems may be needed.

a. If electronic systems supporting medication information exchange have limited adoption, the benefits to overall healthcare costs and patient care may not be realized.

C. Clinician and Pharmacist Workflow:

i. Many aspects of clinician and pharmacist workflow rely on detailed yet concise communication. When additional efforts such as avoidable phone calls, inefficient prior-authorization processes, or workflows that require multiple tools or systems are required, clinician and pharmacist productivity suffers. Efficient, concise, and timely two-way communications of medication information may be needed.

a. If clinician and pharmacist workflows are not improved by health information technology (HIT), wider acceptance and implementation of EHR and related systems may be limited.

ii. In addition, within a clinician's office, there are obstacles that relate to the communication and workflow handoffs between clinicians and clinical staff. Where medication-related system communications are intended to be directed to the prescriber, there may be instances where a clinical staff member is actually the recipient of a system message.

a. If a system design assumption does not match a clinician workflow implementation, implementation of HIT may be limited.

D. Allergy and Medication Intolerances Terminology and Standardization:

i. As medication terminology is improved, similar standardization and vocabulary efforts related to allergies and medication intolerances will support the next generation of medication decision support tools. A concise, comprehensive allergies and intolerances vocabulary may be needed.

a. If allergy and medication intolerance vocabularies are not standardized, medication-related decision support benefits may not be realized.

E. E-Prescribing of Controlled Substances:

i. The Drug Enforcement Agency (DEA) recently made a proposed rule available for public comment. The proposed change in regulations addressed potential clinician use of e-Prescribing for controlled substances.

a. If e-Prescribing of controlled substances is not allowed, e-Prescribing may continue to have limited adoption. If e-Prescribing adoption is limited or not applicable to prescribing of controlled substances, many of the benefits of e-Prescribing will not be realized.

6.0 References to Use Case Scenarios

The Medication Gaps document focuses on the exchange of medication and allergy information between clinicians, pharmacists, and healthcare payors in inpatient, ambulatory, and long term care settings. Specific events and information exchanges have been selected from previous use cases for contextual purposes.

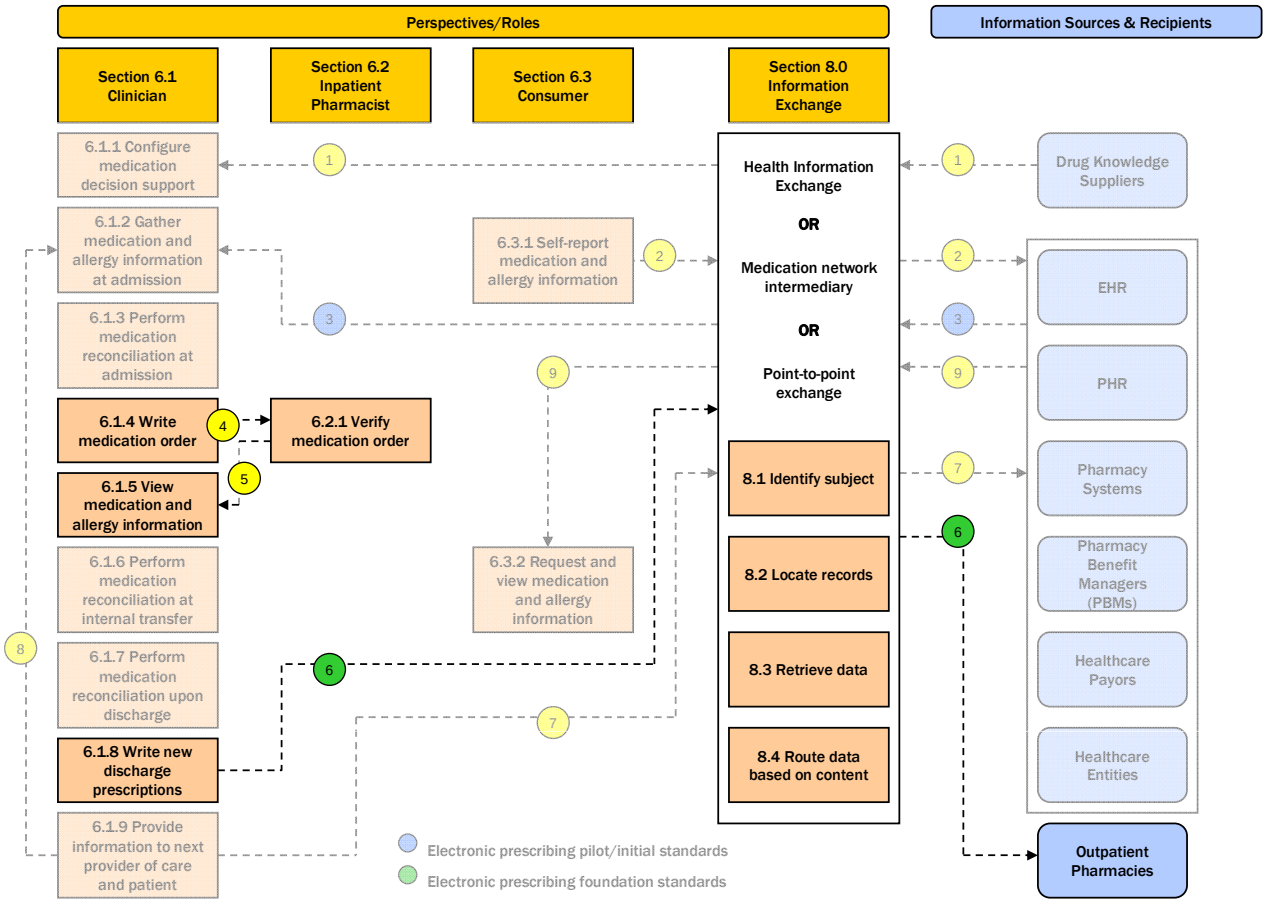
The 2007 Medication Management Use Case contains scenarios that describe the communication of medication and allergy information by various entities and the incorporation of medication-related information needs into EHRs and other clinical systems. This section includes applicable copies of the scenarios and information flows from the 2007 Medication Management Use Case.

In addition, during the final public feedback period of the 2007 Medication Management Use Case, several long term care entities provided feedback and suggestions for modifications that could be made to more fully address the interoperability and standardization needs of the long term care community. This Medication Gaps document provides a previously unpublished information flow diagram (Figure 6-3) that highlights several particular information exchanges that may benefit from additional standards harmonization activities.

The events and information flows that are pertinent to the 2009 Medication Gaps Extension/Gap document are shown in bold. All other events and information flows have been faded out.

6.1 Reference to Prior Use Case: 2007 Medication Management Use Case (Scenario 1 – Inpatient Medication Reconciliation)

Figure 6-1. Medications in an Inpatient Setting

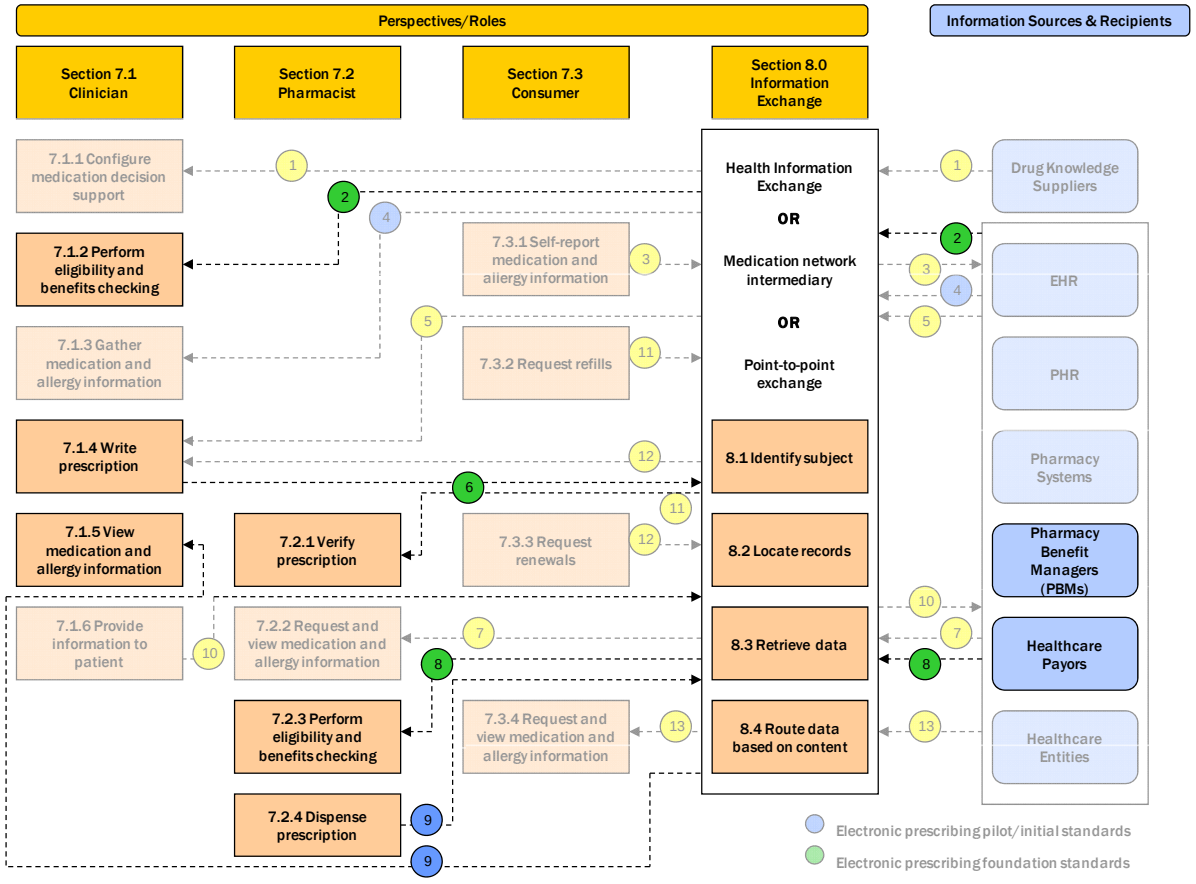


As expressed in the 2007 Medication Management Use Case events 6.1.4, 6.2.1, and 6.1.5 and information flows 4 and 5, clinicians write medication orders which are acted upon by an inpatient pharmacist who provides verification information back to the ordering clinician. Similarly, as expressed in event 6.1.8 and information flow 6, clinicians write discharge prescriptions that are communicated to the patient's preferred pharmacy.

For the purposes of the 2009 Medication Gaps Extension/Gap document, the events and information flows surrounding flows 4 and 5 would benefit from an improved medication terminology. In addition, the event and information flow surrounding flow 6 may benefit from improved medication terminology as well as improved standards in support of formulary, prior-authorization, and SIG. Therefore, information flows 4, 5, and 6 should be referenced when addressing medication gaps.

6.2 Reference to Prior Use Case: 2007 Medication Management Use Case (Scenario 2 – Ambulatory Medication Management)

Figure 6-2. Medications in an Ambulatory Setting

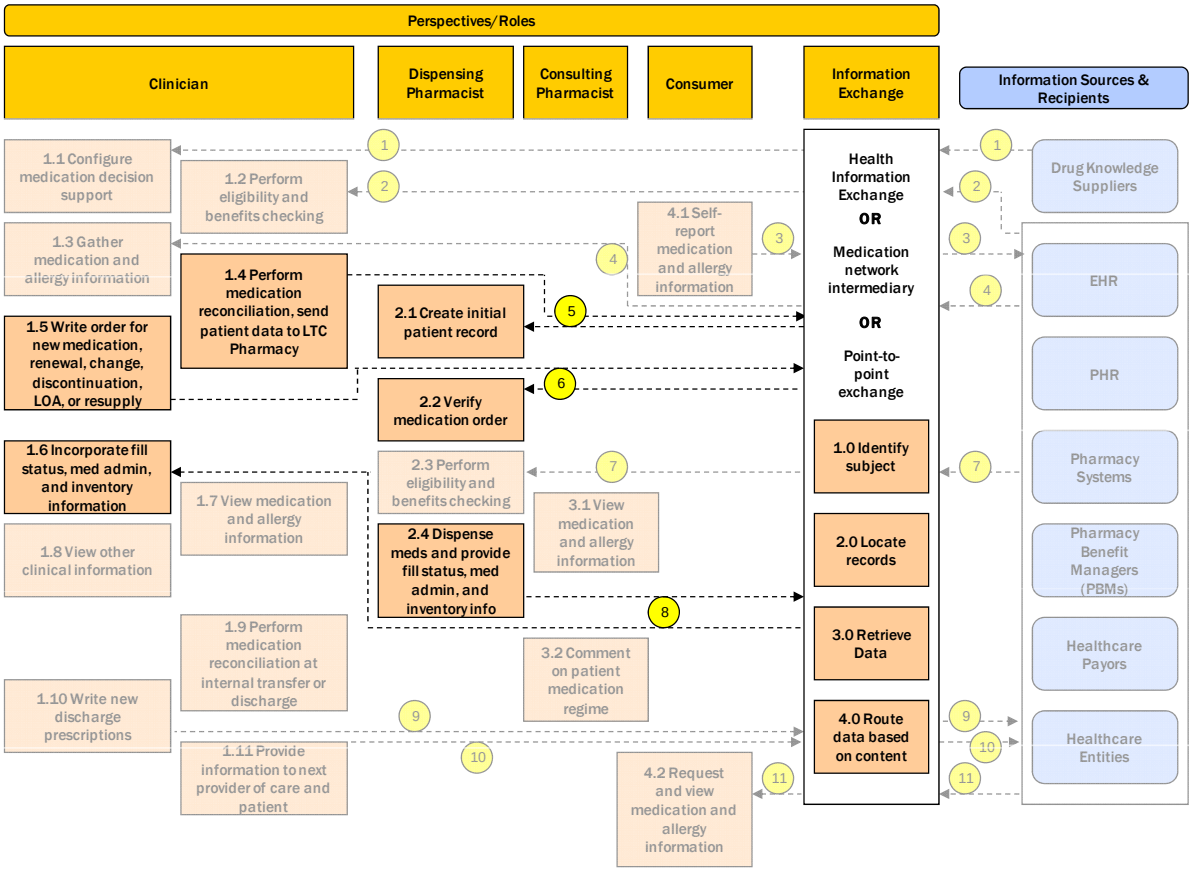


As expressed in the 2007 Medication Management Use Case events 7.1.2 and 7.2.3 and information flows 2 and 8, clinicians and pharmacists perform patient eligibility, pharmacy benefits, formulary, and prior-authorization activities to support medication prescribing and dispensing. Healthcare payors and pharmacy benefits managers provide support for these activities. Similarly, as expressed in event 7.1.4, 7.2.1, 7.2.4, and 7.1.5 and information flows 6 and 9, clinicians and pharmacists communicate prescriptions that include patient instructions in a "SIG" which is given to patients when medication is dispensed.

For the purposes of the 2009 Medication Gaps Extension/Gap document, the events surrounding information flows 2 and 8 and the flows themselves would benefit from an improved medication terminology as well as improved standards for formulary and prior-authorization. Similarly, the event and information flow surrounding flows 6 and 9 would benefit from an improved medication terminology as well as improved standards for prior-authorization and SIG. Therefore, information flows 2, 6, 8 and 9 should be referenced when addressing medication gaps.

6.3 Addendum to Prior Use Case: 2007 Medication Management Use Case (Long Term Care Medication Scenario)

Figure 6-3. Medications in a Long Term Care Setting



This information flow diagram was developed based on input received from entities who are engaged in long term care and commented on the 2007 Medication Management Use Case. This information flow diagram has not been previously published and should be viewed as an addendum to the 2007 Medication Management Use Case. While many of the above events and information flows are similar to those described in the 2007 Medication Management Use Case, several were identified as having additional needs specific to the LTC setting.

Through events 1.4 and 2.1 and information flow 5, clinicians communicate relevant patient demographic and clinical information to LTC pharmacies to maintain appropriate patient information within the pharmacy. This information can assist the pharmacist when considering future medication alternatives. In events 1.5 and 2.2 and information flow 6, clinicians communicate medication orders to LTC pharmacists. These orders may include orders related to medication inventory at the LTC facility or to support a patient leave of absence from a LTC facility where a different form of a medication may be appropriate. This

information flow may also support communications related to discontinued or unused medications that need to be returned from facility medication inventory to the dispensing pharmacy. In events 2.4 and 1.6 and information flow 8, LTC pharmacists communicate medication information to LTC clinicians and support staff that may include medication administration and inventory information. Therefore, information flows 5, 6, and 8 should be referenced when addressing medication gaps for the LTC setting.

7.0 Information Exchange

The information exchange requirements for the effective selection and communication of medication and allergy information may comprise:

- The ability to communicate and route formulary information needs;
- The ability to communicate and route prior-authorization information needs;
- The ability to communicate and route medication order information needs that include appropriate terminology and SIG standards;
- The ability to communicate and route LTC medication, allergy, and patient information; and
- The ability to unambiguously maintain a relationship between patients, clinicians, pharmacists, pharmacies, healthcare delivery organizations, and healthcare payors.

Examples of information exchange capabilities described above and in Section 3.0 may include: Data Delivery, Routing, Data Retrieval, and Subject Data Matching. Descriptions of each of these are in the previous 2006 – 2008 Use Cases.

The functional capabilities may be provided fully or partially by a variety of organizations including: health information exchange organizations, health record banks, medication network intermediaries (including Pharmacy Benefit Managers), specialty networks, and others.

While not described in this section, Health Information Exchange (HIE) and Point-to-Point exchanges assist in the completion of the processes described in this extension/gap. Examples of these exchanges can be found in the previous 2006 – 2008 AHIC Use Cases.

8.0 Medication Gaps Dataset Considerations

The following non-exhaustive information categories and limited examples illustrate some of the information needs from this extension/gap document. Examples of medication information relevant for this extension/gap are included in Appendix B.

A. Patient, Clinician, and Pharmacist Identification – Regardless of the clinical purpose of the medication order, standard information is needed to identify the order when it is communicated. Standard prescription identification information may be required or optional depending on the order and the needs of the receiving entity and federal, state, and local regulations. Patient, clinician, and pharmacist identification information may include:

i. Required and Optional Patient Information

a. Patient Identification Information

b. Name

c. Date of Birth

d. Address

e. Email and other message routing information

ii. Required and Optional Clinician Information

a. Provider Identification Information, potentially including a National Provider Identifier

b. Name

c. Location(s) of prescriber

d. Patient and Institution Privileges

e. Credentials/Licensing Information

f. Phone/Fax Number(s)

g. Email and other message routing information

h. DEA Number

iii. Required and Optional Pharmacist Information

a. Pharmacy/Pharmacist Identification Information

b. Name of Pharmacy/Pharmacist

c. Location(s) of pharmacy

d. Phone/Fax Number(s)

e. Email and other message routing information

B. Prior-Authorization - Based on payor and/or regulatory constraints, approval to order or dispense a prescription may be contingent on required or optional information. This information may include:

i. Required and Optional Information

a. Patient Identification Information

b. Physician Identification Information

c. Medication Requested

d. Diagnosis

e. Frequency

f. Dose

g. Demonstration of Conditional Requirements

h. Additional Information Specific to Prior-Authorization Needs

C. Formulary and Benefits - Specific information that assists in the payment and authorization of prescriptions may be considered. This information may include:

i. Required and Optional Information

a. Formulary Identification

b. Product Identification Information

c. Formulary Conditions, including restrictions on the prescribing or dispensing of certain medications

d. Drug Reference Information

e. Pharmacy Type and Identification Information

f. Payment Information

D. Long Term Care Medication - Prescription orders for long term care patients may have distinctive information requirements which may be considered. This information may include:

i. Required and Optional Information

a. Ordering Facility

b. Point of Contact Provider

c. Address of Patient

d. Bed/Room Location of Patient

e. Name and Contact Information for Patient Representative

f. Consulting Pharmacist

g. Delivery Method

h. Packaging Information for LTC Facility Use, Home Use, or use when a LTC patient is temporarily away from a LTC facility

i. Additional Information Specific to LTC Needs

E. SIG (Signatura – patient instructions) - To effectively communicate prescription compliance instructions to a patient specific information may be considered. This information may include:

i. Required and Optional Information

a. Dose Form

b. Dose Quantity or Calculations

c. Administrative Restrictions

d. Indication

e. Route

f. Site

g. Frequency

h. Strength

i. Medication Administration Timing

j. Medication Administration Duration

k. Medication Stop Date or Stop Criteria

l. Additional Information Specific to SIG Needs

Appendix A: Glossary

The 2006 – 2008 AHIC Use Cases contained general terms and their contextual descriptions. Listed below are the new terms that are specific to this extension/gap.

Clinical Support Staff: Individuals who support the workflow of clinicians.

Clinicians: Clinicians are healthcare providers with patient care responsibilities, including physicians, advanced practice nurses, physician assistants, nurses, psychologists, pharmacists, dentists, oral surgeons, and other licensed and credentialed personnel involved in treating patients. References to "clinicians" in this document are intended to be for specific cases where only a clinician can fill the given role. See "Providers".

Consumers: Members of the public that include patients as well as caregivers, patient advocates, surrogates, family members, and other parties who may be acting for, or in support of, a patient receiving or potentially receiving healthcare services.

Electronic Prescribing: Also known as e-Prescribing, the process of using electronic means to transfer information between provider and pharmacist regarding a prescription.

Eligibility Checking: The process of verifying with a healthcare payor that a patient is entitled to receive healthcare services, usually with a statement of potential benefits that are available to a patient as well as the patient's financial obligation.

Formulary: A list of medications that can be prescribed or dispensed under a set of restrictions such as available in the pharmacy or covered by a health plan.

Healthcare Payors: Insurers, including health plans, self-insured employer plans, and third party administrators, providing healthcare benefits to enrolled members and reimbursing provider organizations.

LTC Facility Staff: People who support the operations of a Long Term Care facility. This can include clinicians, nursing staff, pharmacists, and others.

Patients: Members of the public who receive healthcare services.

Pharmacists: Health professionals and clinicians who are licensed to prepare and dispense medication pursuant to the request of authorized prescribers. The practice of pharmacy includes, but is not limited to, the assessment, monitoring, and modification of medication and the compounding or dispensing of medication. Direct care activities that pharmacists can perform include patient education, patient assessment, and consultation.

Prior-Authorization: The process of obtaining certification or authorization from a health plan or pharmacy benefit manager for specific medications or specified quantities of medications that often involves a review of appropriateness against pre-established criteria.

Providers: Providers are the healthcare personnel within healthcare delivery organizations with direct patient interaction in the delivery of care, including physicians, nurses, psychologists, clinicians, dentists, oral surgeons, and other professionals. This can also refer to healthcare delivery organizations. In this document, this term is intended to be more generic than "clinicians" as it can include organizations and systems in some cases. See "Clinicians".

***Signatura*:** Also known as "SIG." This is the portion of a prescription that provides instructions to the patient on how, how much, when, and how long a medication is to be taken.

Appendix B: Analysis and Examples

The purpose of this appendix is to list some examples of the types of information appropriate for this extension/gap. These examples are not intended to be inclusive of all activities in this extension/gap. As noted in the previous sections, terminology, prior-authorization, SIG, and LTC medications are topics of focus for this extension/gap, but other related examples are also included. HITSP developed Interoperability Specification 07 (IS07) earlier based on the 2007 Medication Management Use Case and that is referenced here. Also, the Center for Medicare and Medicaid Services (CMS) conducted an e-Prescribing pilot study, which is also reference here.

Topic	Current State	Needs
Prior-Authorization	• This functionality was not specifically addressed in HITSP IS07 document • In a recent pilot study, CMS determined that additional work on prior-authorization standards was needed	• Sufficient standardization to support e-Prescribing • Coordination with work highlighted by Prior Authorization Extension/Gap
SIG (for *Signatura*)	• HITSP mentioned SIG in HITSP IS07 data requirements, but no standard was offered, nor was a gap identified • In a recent pilot study, the CMS determined that additional work on SIG standards was needed	• Additional work in the areas of definition, clarifications for use, use examples, and naming conventions • Additional work where some fields contradict other structured fields, and where limitations exist on capturing topical drug directions

Topic	Current State	Needs
Long Term Care	• e-Prescribing for LTC was discussed in HITSP IS07 document but there was no specific request to focus on the unique needs of LTC • The functional needs within this extension/gap describe some of these unmet needs • In a recent pilot study, CMS indicated e-Prescribing standards would work for LTC, but would require modification	• Additional work where e-Prescribing needs are unique to the LTC setting • Additional coordination between the LTC community and HITSP to address some of these needs
Eligibility and Benefits Determination and Formulary	• No standards exists for identifying participants (patients, providers, health plans); much of the information available to link patients/providers with health plans is proprietary • In a recent pilot study, CMS determined that existing standards were able to meet Medicare Part D prescribing needs, but problems were identified with matching patients to health plans (patient identification may be different within each system)	• Standards to identify senders and receivers of this information, which can include patients, providers, and health plans • Consistent set of patient attributes and/or methodology to assist with patient identification

Topic	Current State	Needs
E-Prescribing of Controlled Substances	• HITSP IS07 acknowledged that there is a gap in this area • CMS acknowledged this gap and is working with the DEA to address the issue	• DEA has closed the public comment period for this proposed rule change • Additional interoperability needs to support potential DEA changes for e-Prescribing of controlled substances • Coordination of standards development activities related to controlled substance e-Prescribing regulations
Terminology	• Terminology is a priority to enable e-Prescribing interoperability. There are many on-going efforts in this area. There are at least four relevant perspectives for this issue: drug manufacturers; terminology sources; drug database vendors; and Federal health partners • In the absence of a developed standard, independent solutions are being developed by both private and public entities • In a recent pilot study, CMS determined that additional work on terminology standards was needed	• Additional work on incompatibilities identified by HITSP while mapping between alternative terminologies • Consistent medication terminology and vocabulary to describe clinical medication needs and specific medication alternatives • Wider coordination between all industry stakeholders