U.S. Department of Health and Human Services

Office of the National Coordinator for Health Information Technology

Order Sets

AHIC Extension/Gap

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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 Order Sets. AHIC specifically requested that the Order Sets Extension/Gap addresses the electronic exchange of order sets among electronic health records (EHRs) and other related systems.

This extension/gap document is being developed by Office of the National Coordinator for Health Information Technology (ONC) to represent the 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 the clinician and inter-organizational systems that utilize order sets. This document is the Final AHIC Extension/Gap. Feedback received on the AHIC Extension/Gap has been considered and incorporated into this document where applicable. HITSP has the opportunity to reuse standards, where applicable, from those previously recognized by the Secretary of Health and Human Services, to specify and constrain how they 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 formally addressed all of the interoperability considerations for the communication of order sets between clinicians and healthcare entities.

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 2008 Consultations and Transfers of Care (CTC) Use Case include the needs for electronic access and exchange of clinical documents between EHRs. This information exchange could include peer to peer exchange of order sets;

- The 2007 Quality Use Case includes the needs for considering leading practices and research findings represented in quality indicators; and

- The 2008 Public Health Case Reporting Use Case includes the needs for considering reporting to public health when specific reporting criteria are met.

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 order sets. The Order Sets 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 be 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, Order Set 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, identifies order set needs with regards to examples of specific data types, data sets, data elements, use of vocabularies and naming conventions that may support future industry efforts in the identification,

development and harmonization of standards that may be used to support the communication of order sets.

2.2 Scope

Order sets can be described as a knowledge tool represented by the grouping of clinical-care orders together with the information, rules and relationships pertinent to the order set in its entirety as well as information associated with the individual orders within the set.

Therefore, the requirements for the 2009 Order Sets Extension/Gap document can be summarized as:

- A Clinician's ability to access, create, update and/or share order sets; and

- A healthcare entity's ability to access, create, update and exchange order sets with other healthcare entities.

This extension/gap document is largely focused on the activities that support information exchanges that occur during inter-organizational communication and management of order sets. The intra-organizational activities necessary to create, manage or use an order set for a specific patient are not in scope for this extension/gap document. However, some intra-organizational functional needs are included in this document to illustrate the value of inter-organizational communication of order sets. An additional and necessary component of interoperable communication of order sets includes technical design. However, technical design considerations are not the focus of this extension/gap document.

The identification, development and harmonization of standards to support the interoperability associated with Order Sets has been preliminarily addressed. However, additional work with standards and professional organizations, care delivery organizations and organizations providing information technology services and products to the healthcare industry is needed to support the interoperability needs associated with Order Sets. 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 the exchange of Order Sets and related information. While all functions outlined in this section may not be relevant in today's order set environments, standards that are identified, developed, and/or harmonized should support the functional needs outlined as pertinent to inter- and intra- organizational creation, management and electronic exchange of order sets. 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.

Inter-Organizational Management of Order Sets:

Here is one example of the need for inter-organizational management of an order set. Any resemblance to real practice or clinician is unintentional. Dr. M, Chair of the Oncology Research Department of University of Excellence, authored and following peer review by his professional organization, saved a non-personal order set to a publically available catalog. The order set has information about the author, order set logic and other metadata, including sources referenced by some of the orders in the set. This order set is evidence-based and designed to manage certain aspects of care for a patient during a specific chemotherapy administration regime. Dr. C, an oncology resident at University Remote, may want to use Dr. M's order set as a basis for a chemotherapy regime offered at University Remote. Dr. C may access Dr. M's order set via a catalog of order sets from within Dr. C's EHR, update the set to include local guidelines or formulary considerations and save a new, uniquely identified order set to the local order system.

A. The ability to uniquely identify an order set.

B. The ability for a clinician to electronically exchange order sets with healthcare systems, peers, or other entities.

C. The ability for a clinician to access and view order set listings, including the detailed information that uniquely identifies the order set via the clinician's EHR, or sources external to the clinician's EHR.

   i.   The ability for a clinician to identify and review order sets by one or more characteristic, such as types of orders in the order set, purpose of the order set, authoring information, or other characteristic of an order set (metadata).

   ii.   The clinician may need the ability to compare and contrast two or more order sets using criteria such as: order set author name(s) and/or author information; order supplier (knowledge supplier) name(s) and/or information;

evidence-based reference(s); and dates pertinent to the order set or additional metadata when available.

    iii. The ability for a clinician to compare and contrast order set utilization information of one or more order sets. Utilization information may be simple or complex. For example the information may include the number of times accessed and/or patient care outcomes, if available.

D. A clinician may need the ability to access and transfer lists of order sets from an external (to the clinician's EHR or clinical ordering system) location to a local clinical ordering system.

E. The ability for a clinician or system interacting with an order set to exchange information with an external healthcare entity to satisfy reporting requirements.

Intra-Organizational Management of Order Sets:

An example of intra-organizational management of an order set is as follows: Dr. C, from the previous example, would access, update and save Dr. M's order set to the local order system. Dr. C may, in turn, communicate the availability of this uniquely identified personal order set intra-organizationally. Dr. D has an affiliation at Dr. C's facility as well as having a private practice in the community. Dr. D may want to use Dr. C's order set as a template for creating a chemotherapy administration order set with different content from the original order set. To make use of the order set uniquely identified by Dr. C, Dr. D would access Dr. C's order set, update its content and save a new, uniquely identified order set for his personal use at the University Remote and his private practice where he authors orders for patients undergoing chemotherapy administration.

F. The ability for a clinician to access and use externally created order sets within a local clinical ordering system.

G. The ability to review, accept, update, or remove orders and/or order details from an externally sourced order set and save the changes to the order set as an updated order set within a local clinical ordering system. (See Appendix B for examples)

    i. The clinician may need the ability to update or delete some orders and/or order details from an order set during updates to the order set.

        a. Examples of a need to update the order set may include drug or food sensitivities in a certain patient population, or the presence of physical, psychological, or other considerations that might require the use of alternative treatments for certain patient populations.

  b. An available order set may have a restricted set of types of orders and/or arbitrary limits on specific orders. However, a clinician may need to expand or contract an order set to accommodate variations in treatments or population-based information available to an ordering clinician.

  c. Among other considerations that may require the clinician to perform order set updates may be treatment preferences that are specific to the clinician, local practice guidelines, formulary restrictions, prior-authorization criteria and/or available diagnostic testing.

ii. The ability to update or delete orders and/or order details from an order set. Some examples of order details that might be modified include: timing or dosing considerations for medication administration; logic between vital sign and medication administration orders and others.

iii. A clinician may need the ability to expand or contract the scope of care of an order set to accommodate condition-specific or practice- based population-information such as variances in physical, psychological, or other considerations and/or differences in available treatments from treatments originally included in an order set template.

iv. The ability for a clinician to add to, update, or maintain relationships among individual orders within the order set.

  a. The clinician may review and/or update embedded logic operators that apply to one or more orders within the order set, such as "and", "or", or "not"; and conditional operators such as "if", "after", or "by".

  b. The clinician may need to determine and/or update existing thresholds within an order set. An example might be notification thresholds for alerting the clinician about certain parameters of observation, such as changes in level of consciousness, vital sign thresholds, or tolerance to activity.

v. The ability to save and communicate updated order set logic with an updated order set.

vi. The ability to supplement an evidence-based order set with additional information and/or orders.

H. A clinician may need the ability create a unique order set from two or more existing order sets.

     i.   The ability to compare, update, combine and save two or more order sets as a uniquely identifiable order set. One example of this need is when the clinician anticipates that the combined order set can be used to comprehensively and simultaneously treat more than one condition.

     ii.   The ability for a clinician to identify, update and/or remove duplicate, contradictory and/or clinically-contraindicated orders prior to saving a combined order set as one order set.

     iii.   The ability to save and communicate combined order sets together with information necessary to convey the intent of the updated order set.

I.   The ability for a clinician to access a nested order set to update and/or save the previously nested order set as a new, (un-nested) order set. For example, the source for an evidence-based schedule for routine blood glucose monitoring paired with sliding scale insulin treatments may be most readily available as a nested order set, or part of a larger order set.

J.   The ability to electronically fulfill internal or external reporting requirements utilizing information gathered for, or augmented by, the order set.

4.0   Stakeholder Communities

Examples of stakeholders who may be directly or indirectly involved in the exchange of order sets 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 inter-organizational exchange of order sets may include: Organizational and Departmental Leadership, Clinical Practice Organizations, and/or Governing Groups, and other regulatory organizations.

Stakeholders typically involved in intra-organizational exchanges of order sets may include: Ordering Clinicians, Clinical Support Staff, and clinician Peer groups.

Stakeholders that may assist in order sets communication may include: EHR System Suppliers, Clinical Ordering System Suppliers, and Public Health System Suppliers.

Stakeholders that may be sources or recipients of order information and/or order requirements for order sets may include: Patients, Consumers, Knowledge Suppliers, Public Health, Government Agencies, and/or Healthcare Payors.

5.0   Issues and Obstacles

A number of issues in today's health information technology environment are obstacles to achieving the 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 Order Sets are outlined below.

A. Terminology:

   i. For clinicians and other entities to effectively build and exchange order sets, standard terminology and naming conventions may be required.

      a. Without the ability to unambiguously map coded terminology standards to each other, it may be difficult to efficiently build, review, sort and/or select order sets or to unmistakably communicate order set details. Examples of terminology standards for mapping considerations to support order set interoperability include the Systematized Nomenclature of Medicine-Clinical Terms (SNOMED CT), RxNorm, the International Statistical Classification of Diseases and Related Health Problems (ICD) and Current Procedural Terminology (CPT); and

      b. Without the identification and adoption of standard naming or coding conventions and/or conceptual frameworks and data models for order sets, types of orders, order names and codes, or other order details, it may be difficult to effectively build links among orders within or between order sets.

B. Order Sources and Identification:

   i. For clinicians and entities to effectively exchange order sets, identifiers that create a unique identity for an order set may be required.

      a. It may be difficult to effectively exchange order sets and link them to outcome measurements without system capabilities that generate identifiers that can create a unique identification for order sets. Examples of identifiers may include but are not limited to order set source(s), including name of and/or supply-system identifiers (ids); order-set name and/or ids, type-of-order id for each order type; order link-type id, information-type id, such as reporting requirements, population considerations; author information, such as name, professional title, affiliations; order set dates, such as creation, update, or verification dates.

      b. Order set identification may need to include identification and/or coded data sets for which there are not yet data standards identified or fully developed.

C. **Standard Document Type:**

i.   To meet the functional needs outlined in this extension/gap document, standard messaging and/or document types may be required to unambiguously carry out inter-organizational, electronic communication of order sets.

    a.   It may be difficult to unmistakably identify the contents of an order set without a standard messaging format and/or document type designed to represent each segment and component within an order set. (see appendix B for examples of segments and components)

    b.   It may be difficult to determine the specific intent and/or other details about an order set without a standard messaging format that includes structured metadata in the order set.

6.0 References to Use Case Scenarios

The 2009 Order Sets Extension/Gap Document focuses on the exchange of a template used to communicate a core set of information related to an order set. Specific events and information exchanges have been selected from 2006-2008 AHIC Use Cases to illustrate the context of order set information exchanges.

There are three previously published AHIC use cases that illustrate the contextual information flows of order set communication. The details of the information and contextual relationships of order sets to these use cases are outlined in the following pages. Below are applicable copies of the scenarios and information flows from 1) Consultations and Transfers of Care, 2) Quality and 3) Public Health Case Reporting Use Cases.

The events and information flows in each of these use cases that are pertinent to the 2009 Order Sets Extension/Gap Document are shown in bold. All other events and information flows have been faded out.

6.1   Reference to Prior Use Case: 2008 Consultations and Transfer of Care (CTC)

Figure 6-1. Transfer Additional Information
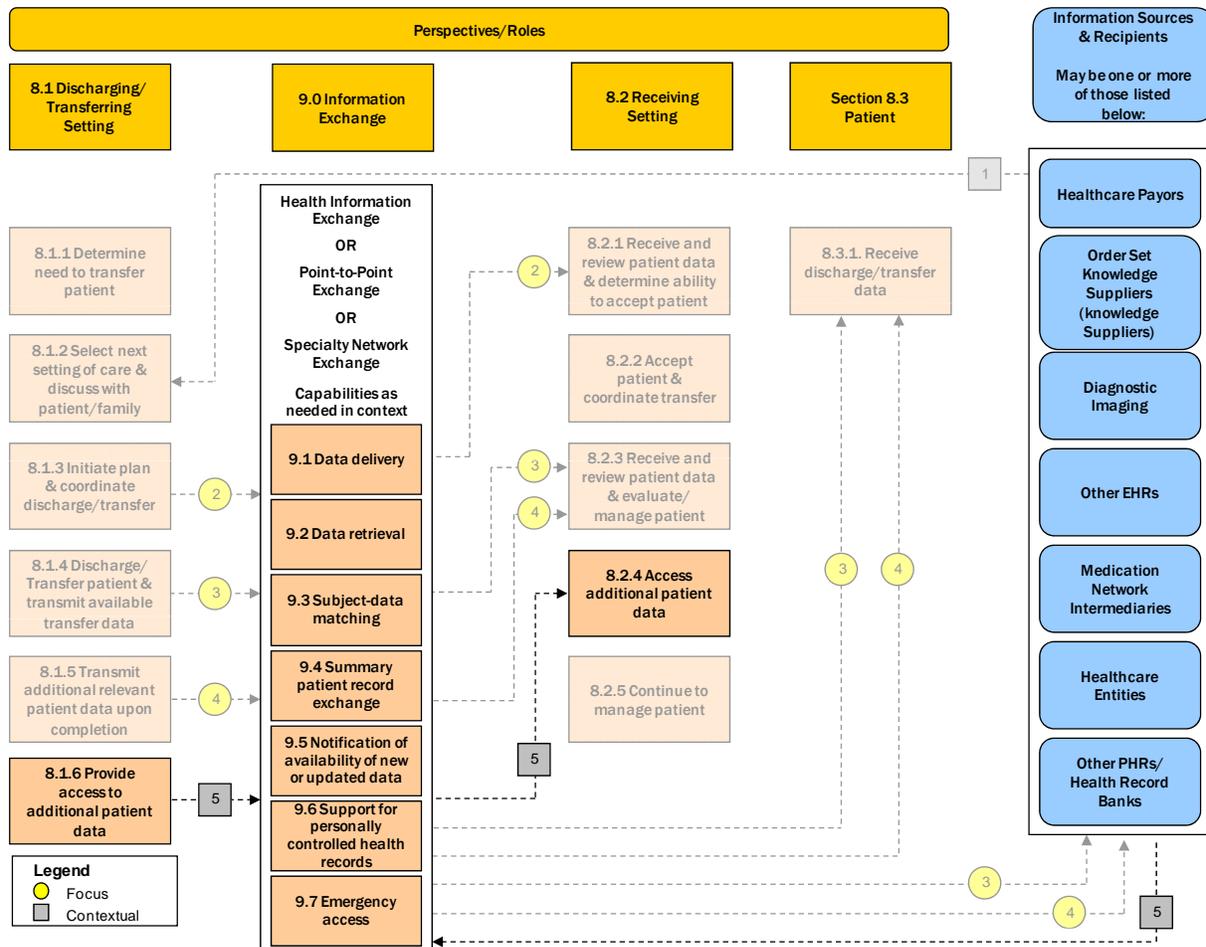
In the 2008 Consultations and Transfers of Care Use Case (CTC), events 8.1.6, 9.1 through 9.7 and 8.2.4 and Information Sources and Recipients are linked by Contextual Information flow 5. This contextual flow supports access to additional patient data not in focus for the CTC Use Case. The pathway of this contextual information flow is in focus for Order Sets information exchanges between systems. However, although the information exchange path is used, the data exchanged among entities is not patient-specific information. As a focused flow for order sets, information flow 5 provides the path for movement of Order Sets to and from knowledge suppliers or organizations to local systems and clinicians within those systems. The exchange of updated order sets may include peer-to-peer or system-to-system exchanges and may use this information flow for those communications.

6.2 Reference to Prior Use Case: 2007 Quality (Scenario 1)

Figure 6-5. Hospital-based Care Quality Information Collection and Reporting
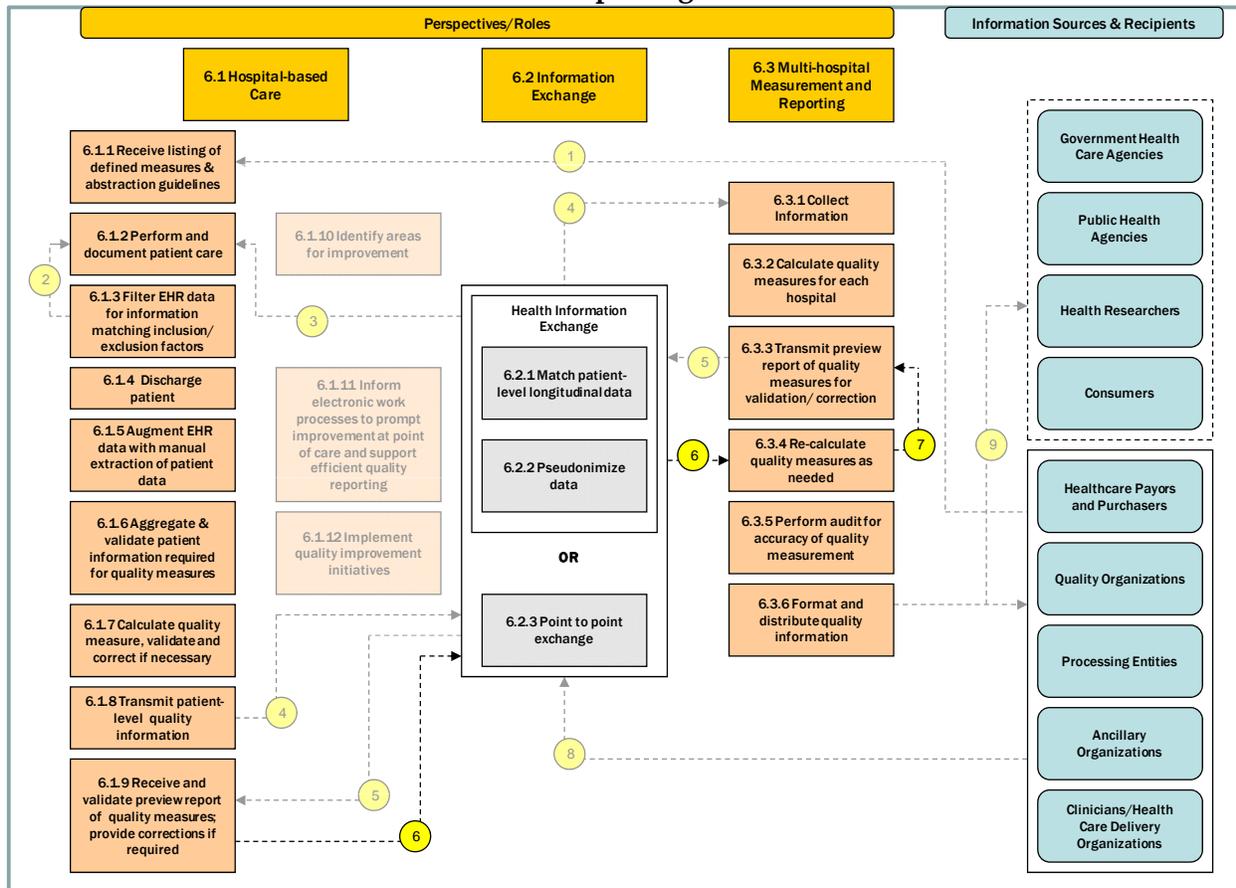
As expressed in the 2007 Quality (Scenario 1) Use Case, Events 6.1.1, 6.1.2, 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7, 6.1.8, 6.1.9, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5 and 6.3.6, information flows 6 and 7 may apply to an information flow resulting from adjustments to details of order sets. Information Sources and Recipients in Scenario 1 of the 2007 Quality Use Case should also be considered valid in the order sets information flows.

Quality and outcome measurements may be collected from information derived from an order set utilized in a clinical care setting. Therefore, information flows 6 and 7 should be referenced when addressing Order Sets when the order set is part of the Quality Information collection and reporting activities.

6.3   Reference to Prior Use Case: 2008 Public Health Case Reporting (Scenario 1)

Figure 6-6. Reporting from EHRS
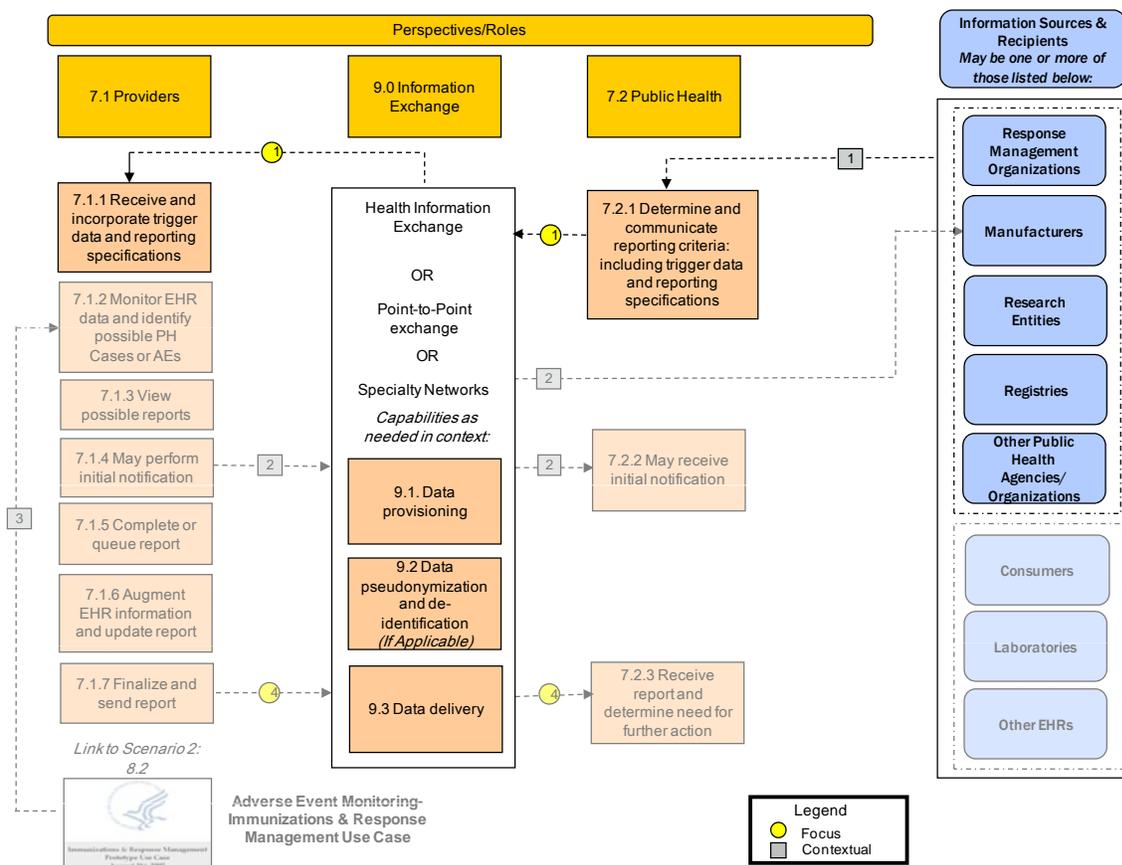
As expressed in the 2008 Public Health Case Reporting Use Case events 7.1.1, 7.2.1 and information flow 1, reporting criteria, including trigger data and reporting specifics may be communicated via health information exchange (HIE) activities and incorporated into provider systems (e.g., EHRs and/or public health systems).

In the case of order sets, an Order Set Knowledge Supplier or other sources may communicate order set information or reporting requirements together with order sets via HIE activities. Reporting requirements may be obtained from a variety of sources, including public health, government agencies, EHRs and ordering system suppliers. Reporting requirements may be incorporated into and communicated with order sets using a variety of systems and HIE activities. Therefore, information flow 1 should be referenced when addressing Order Sets when the order set is part of the Quality Information collection and reporting activities.

7.0   Information Exchange

The information exchange requirements for effective communication of order sets may include:

- The ability to communicate order set requirements or order set purpose;

- The ability to generate, communicate and/or translate a unique order set identification number;

- The ability to communicate order set information as components of an order set;

- The ability to unambiguously communicate all paired order details and orders from within an order set;

- The ability to communicate updates to an order set, including the unique identification of the order set; and

- The ability to unambiguously maintain explicit relationships and links among orders within an order set.

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

The functional capabilities may be provided fully or partially by a variety of organizations including: health information exchange organizations, integrated care delivery networks, provider organizations, public health networks, 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 Order Sets Extension/Gap. Examples of HIEs and Point-to-Point exchanges can be found in the previous 2006 – 2008 AHIC Use Cases.

8.0   Order Sets Dataset Considerations

The following non-exhaustive information categories and limited examples illustrate some of the information needs from this extension/gap document. Examples of Order Sets and some common order set component details are included in Appendix B.

A. **Order Sets -** Determining and standardizing all order set naming conventions and details may not be practical. However, focusing efforts on the details of commonly used order sets that may make use of standardized, coded terms found within SNOMED CT, ICD, CPT, or other vocabularies within the National Library of Medicine (NLM) may be useful for the exchange of order sets. Specific information that further describes the order sets should also be ear-marked for standards work. This information may include:

    i.   Order Set Names

    ii. Order Set Information and Descriptions

    iii. Order Set Identification Codes

    iv. Order Name(s)

    v. Type of Order

    vi. Type of Order Specifications

    vii. Order Set Link Types

    viii.Order Set Component Names

B. **Types of Orders -** Order sets may be categorized in many different ways. One way is to classify an order set by the types of orders within the order set. For example, a pre-operative medication order set may be made up of only one type of order, the medications that are prescribed as part of pre-operative care. Types of orders may also include a variety of treatment and diagnostic options for disease or condition management and may include treatment and diagnostic options generally considered appropriate for a specific clinical scenario or within accepted guidelines of clinical care or may be specific to care settings. Examples of treatment and diagnostic options commonly understood are medications, laboratory testing, diagnostic imaging, patient care orders, adjunct therapy and food and nutrition management and others. Each treatment or diagnostic category may have many sub-categories of types of orders. For example, medication orders may have a sub-type called anti-infective agents and that sub-type may be further classified by (drug) classes of anti-infective agents. Providing support to clinicians to be able to unambiguously identify

any order for selection, updates, placement and communication may be further clarified using a distinction of type and/or sub-types as part of order details.

C. **Order Set Information –** Various types of orders and/or specific orders may be grouped together as an order set. One component of the order set may also be information about the order set. Order set information may have standard formatting, vocabularies, sequencing and other details that may include:

i.   Ordering indications

ii. Life-stage for the order set (childhood, adolescent, or others)

iii. Outcomes measurements

iv. Reporting details for public health or government agencies and others

v. Related order set identification (author, organization, or other)

vi. Ordering contraindications (not to be used for certain conditions or in the presence of certain other considerations)

vii. Description of specific order sequencing logic

viii. Type of order parameters

D. **Order Specifications –** Order specifications may occur at the order set, type of order and/or order level. Standardized order specifications may be required or optional depending on the order and/or the purpose of the order set. Examples of order specifications are listed below:

i.   Order logic

ii. Date(s) such as authoring date and update date

iii. Order identification

iv. Type of order

v. Order name

vi. Order duration

vii. Order skip patterns

viii. Order links

E. Order Set Communication and Status – Specific information that assists in the cataloging, communication and tracking of an order set may be considered. This information may include:

 i. System-generated order set identification information

  a. System-generated type of order identification information

  b. System-generated order identification information

 ii. Order set update and/or cancellation information such as dates, author, organization and others

 iii. Order set categorization information

Appendix A: Glossary

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

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".

Clinical Care Orders: Actionable items, goals and communications that make up a portion of a care plan.

Clinical Ordering System Suppliers: Organizations that provide specific clinical ordering solutions (including EHRs and physician order entry sytems) to clinicians such as software applications and software services. These suppliers may include developers, providers, resellers, operators and others who may provide these or similar capabilities.

Clinical Support Staff: Individuals who support the workflow of clinicians, including those that assist providers during plan of care activities.

Knowledge Suppliers: Entities that use data, vocabulary, technology and/or industry standards to provide information and tools to entities delivering health care.

Order Set: A knowledge tool represented by the grouping of clinical-care orders together with the information, rules and relationships pertinent to the order set in its entirety as well as information associated with the individual orders within the set.

Order Set Author: An entity (e.g., person, persons, or knowledge supplier) that creates any portion or all of an order set.

Order Set Communication and Status: Specific information that assists in the cataloging, communicating and tracking of a collection of orders.

Order Set Link Types: Explicit relationships between orders within a collection of orders, or between one collection of orders and another.

Order Specifications: Required and optional information that describes the use of components of an order set, type of order, or specific order.

Order Set Identification: Interoperable classification and tagging of a collection of orders that may be used to catalog, sort and use order sets.

Order Set Names: Human-readable titles for a collection of orders that may be used to catalog, sort and use order sets.

Order Set Information: Specific data associated with a collection of orders that may have standard formatting, vocabularies, sequencing and other details about the collection of orders.

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".

Type of Order (Order Type): Categorization assigned to a specific order to denote the order's affinity to a treatment or therapy.

Appendix B: Analysis and Examples

The purpose of this appendix is to point out examples of the types of information needs that are appropriate for this extension/gap. These examples are not intended to be inclusive of all activities in this area.

A composite Order Sets example created from order sets found within extant systems is included here to illustrate some key components of order sets that may be necessary for interoperability of order sets. This composite includes components such as order set name and identifying information, order set header that includes information about the author, organization, sources and more; specific orders and details about the order; embedded logic; and an example of a nested order set. The composite also contains examples of some possible combinations of types of orders that may be found within an order set. This example is intended to illustrate some important features for interoperability and communication of order sets. It does not represent a complete order set.

An order set with logic and guidelines may be considered a decision support or knowledge tool. The tool may be designed to offer not only standard therapy but also acceptable alternatives. By selecting specific care items (as listed), or selecting alternatives available within the order set, an order set author may adjust and manage the content of an order set template (reference Section 3.0 and Appendix B example) and save the updated set. By adjusting the order set, saving it and later accessing the set for use in a clinical setting, the clinician is not limited to prescribing specific therapies.

As described in this extension/gap document, an order set may be accessed, updated and saved uniquely (see Section 3.0). This composite example includes a variety of types of orders that may be decision points for the clinician using an order set, a nested order set and one or more examples of guidelines that might be used as a knowledge source when implementing the embedded logic of an order set. This composite also has orders that may be prompts to the ordering clinician. This prompting-type of order is included to remind the ordering clinician to incorporate certain aspects of care when placing orders for a patient. Examples of these prompts are the dietary choices, levels of activity, some bedside treatment options and others. When certain orders are available to be selected or deselected by an ordering clinician, the order set can be further tailored to the specific care needs for the patient.

Sample Order Set

Order Set Component	Text	Description of elements
Header Component		
Order set title and ID	**Genitourinary procedure admission orders**	Code might be system-generated once an order set is accepted for cataloguing or distribution of available order sets
Description	**This is an order set that includes evidence-based orders for treating a patient undergoing procedures to correct a (condition)**	A human readable and potentially searchable description of the order set.
Keywords	**GU, Urethrostomy, foley, catheter**	May be interoperable, coded terminology to assist in finding order sets related to specific conditions, procedures, or therapies
Order Set Version		Versioning may be a system-generated identification
Owner	**Order Distributor Name**	Each distributor may have a unique id to assist with indexing and/or cataloging and managing collections of order sets from disparate sources
Author	**Mary Jones**	Identifies author
Author Credentials	**MD**	Credentials of the author
Author History	**Urology Fellow, Academy of Excellence**	Each organization may have a unique identifier
Author Contact information	Email, address, or more	May provide contact information for author
Authentication	**Yes**	If field is blank, may indicate no authentication of order set

Order Set Component	Text	Description of elements
		has occurred
Authentication Date	Mm/dd/yyyy	Interoperable formats for dates
Authentication Time	Hour:minute:seconds	interoperable formats for time
Authenticator Name	First, middle, last	Id, interoperability useful
Type of Order Set	Admission	Interoperable types of order set. This may include such things as intended use, condition,
Logic		Could be a listing of the types of logic used in this set
Order Type	Admission/Transfer/Discharge	The name of the order type groups orders into logical groupings. Order Sets are made up of one or more order types. Each order type has one or more orders. The combination of an order type id and an order id could indicate the location of a specific order within an order set.
Order name (1)	Admitting Diagnosis	Diagnoses codes
Order name (2)	SecondaryDiagnosis	Diagnoses codes
Order name (3)	Condition	Designation of condition
	Poor	Select to designate patient-specific condition
	Fair	Select to designate patient-specific condition
	Good	Select to designate patient-specific condition
Order name (4)	Attending	
Order Details	First, last name	May be free-text, or may include provider identification
Unique ID		May be a provider identifier, uniquely assigned to a single provider
Order Type	Allergies Order	May be coded terminology, may include version of

Order Set Component	Text	Description of elements
		terminology or other information to support interoperability
Order Subtype:	Medication allergy	May be coded terminology, may include version of terminology or other information to enhance interoperability
Order name (1)	Erythromycin	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order Subtype:	Food allergy	May be coded terminology, may include version of terminology or other information to enhance interoperability
Order name (1)	Peanuts	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order Subtype:	Environmental allergy	May be coded terminology, may include version of terminology or other information to enhance interoperability
Order Type	Observations Orders	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	T,P, R and B/P q 4 hr	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order name (3)		
Order name (4)		
Order Type	Procedures Orders	May be coded terminology, may include version of terminology or other information to support interoperability
Order Subtype:	Cardiology Orders	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	EKG at bedside	May be coded terminology, may include specific code,

Order Set Component	Text	Description of elements
		version of terminology and/or other information to enhance interoperability
Order Subtype:	Radiology Orders	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	Chest x-ray PA and Lat	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order Type	Patient care Order	May be coded terminology, may include version of terminology or other information to support interoperability
Order Subtype:	Activity Order	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	Ambulate with Assistance	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order Subtype:	Vital Signs Order	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	T,P, R and B/P q 4 hr	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Details		May be coded terminology, may include specific code, may be free text
Start Date		Interoperable formats for dates
Stop Date		Interoperable formats for dates
Order name (2)	Daily weight for two days	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Start Date		Interoperable formats for dates
Stop Date		Interoperable formats for dates

Order Set Component	Text	Description of elements
Details		May be coded terminology, may include specific code, may be free text
Order Subtype:	**Protocol: Foley Catheter Care**	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	**Foley to dependent drainage**	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)	**Irrigate Foley with xxx**	May be coded terminology, may include specific code, version of terminology and/or other information to enhance interoperability
Order name (3)		
Order Subtype:	**Diet Order**	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	**NPO after midnight**	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)	**Begin Clear liquid diet 4 hours after PACU**	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (3)	**Advance diet as tolerated to Regular diet**	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order Type	**Nested** Patient Care Orders…	May be coded terminology, may include version of terminology or other information to support interoperability; elypsis may indicate additional nests of orders, order types, or single orderable items

Order Set Component	Text	Description of elements
Order Subtype:	Additional Activity orders…	May be coded terminology, may include version of terminology or other information to support interoperability; elypsis may indicate additional nests of orders, order types, or single orderable items
Order name (1)	Bed rest	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order Subtype:	Patient Education Orders	
Order name (1)	Wound Care	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)	Foley Care	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (1)	Medication Self Administration	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order name (3)		
Order Type	Medications Order	May be coded terminology, may include version of terminology or other information to support interoperability
Order Subtype:	Intravenous medications	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)	D5 and NS 1liter	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Start Date:		Interoperable formats for dates
Stop Date:		Interoperable formats for dates

Order Set Component	Text	Description of elements
Order Details	Administer at 75 cc/hr while NPO	May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order name (3)		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Start Date:		Interoperable formats for dates
Stop Date:		Interoperable formats for dates
Order Details		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order Subtype:	Oral medications	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order name (3)		
Order Subtype:	Pain Management	May be coded terminology, may include version of terminology or other information to support interoperability
Order name (1)		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Start Date:		Interoperable formats for dates

Order Set Component	Text	Description of elements
Stop Date:		Interoperable formats for dates
Order Details		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Order name (2)		
Order name (3)		
Order Subtype:	**Prophylactic Antibiotics**	May be coded terminology, may need to include specific code, version of terminology and/or other information to support interoperability
Order name (1)		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability
Start Date:		Interoperable formats for dates
Stop Date:		Interoperable formats for dates
Order Details		May be coded terminology, may need to include specific code, version of terminology and/or other information to enhance interoperability