

EMR Digital Health Drug Repository (DHDR)

Business View

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Table of Contents

1. INTRODUCTION	3
1.1 OVERVIEW	3
1.2 BUSINESS DRIVERS.....	3
1.3 WHAT IS THE DHDR?	3
1.3.1 DHDR Service Overview.....	3
1.3.2 What is a Dispensed Drug Event?	4
1.3.3 What is a Pharmacy Service Event?	4
2. SYSTEM VIEW	5
2.1 PATIENT CONSENT DIRECTIVES.....	5
2.1.1 Provincial Consent Override Workflow.....	5
2.1.2 Provincial Consent Override Interface (PCOI) Viewlet.....	6
2.2 DHDR EHR SERVICE VIEWS.....	7
2.2.1 Summary View	8
2.2.2 Comparative View.....	10
2.2.3 Detailed View	11
3. APPENDIX A: GLOSSARY OF KEY TERMS AND DEFINITIONS	12
3.1 ACRONYMS AND ABBREVIATIONS.....	12
3.2 DEFINITIONS	13

1. INTRODUCTION

1.1 Overview

The purpose of the EMR Digital Health Drug Repository (DHDR) is to describe the expectations to which an EMR must align to provide clinicians with access to view their patients' dispensed drug history and pharmacy service events in the DHDR through their EMR Offering.

1.2 Business Drivers

Currently, clinicians can use EMRs to prescribe drugs to patients and maintain electronic records of the prescription but may not have access to information about whether the prescribed drugs were dispensed to the patient. Making DHDR information available as an integrated function within an EMR provides clinicians with a more comprehensive, on-demand view of whether a prescription was dispensed to the patient and the details of that dispense event. This information can assist healthcare providers in establishing a Best Possible Medication History (BPMH) for their patients and enhance clinical decision-making and patient care.

1.3 What is the DHDR?

The DHDR is a provincial repository that maintains and provides various healthcare organizations and systems with centralized access to view and update patients' dispensed drug service records.

The DHDR maintains Ontarian's dispensed drug history that is publicly funded as part of the Ontario Drug Benefit Program (ODB), Special Drugs Program (SDP), and Trillium Drugs Program (TDP). The DHDR also maintains the pharmacy services history paid for by the ministry. Some organizations can contribute data to the DHDR while other organizations, such as EMRs in a primary care setting, can only retrieve and reference data from the DHDR.

1.3.1 DHDR Service Overview

Data maintained in the DHDR EHR Service includes:

1. Dispensed drug events
2. Pharmacy service events

Data in the DHDR is contributed by, and available to health organizations, agencies, and pharmacies (e.g., Pharmacy Management Systems). Integrated EMR Offerings have access to this data residing in the DHDR.

1.3.2 What is a Dispensed Drug Event?

A dispensed drug event captures a record of a drug that was dispensed by an entity or organization to a patient (as opposed to a drug prescription that may contain multiple drugs that may be dispensed over time). Dispensed drug events in the DHDR capture each time a drug is dispensed (regardless of who the payor is), including patients who receive publicly funded and monitored drugs. A patient's dispensed drug history comprises all the dispensed drug events captured in the DHDR for that patient. EMR Offerings integrating the DHDR EHR Service have access to view this information.

1.3.3 What is a Pharmacy Service Event?

A pharmacy service event includes the information contributed directly by various organizations about each time a publicly funded pharmacy service event occurs for publicly funded and monitored drugs. Pharmacy service event information includes data such as the name and contact information of the pharmacy or organization that provided the dispensing service. Examples of pharmacy service events include MedsCheck Program medication reviews, pharmacist administration of vaccines, and Pharmacy Smoking Cessation Program services. EMR Offerings integrating the DHDR EHR Service have access to view this information.

2. SYSTEM VIEW

2.1 Patient Consent Directives

The default consent of every patient is implied consent unless the patient or their substitute decision-maker (SDM) had submitted an explicit patient consent directive to the MOH requesting to block access to their information stored in the DHDR. Patients will have the right to withhold or withdraw consent for the disclosure of their information stored in the DHDR EHR Service.¹

2.1.1 Provincial Consent Override Workflow

When an EMR Offering retrieves a patient's dispense history from the DHDR EHR Service, the patient consent directive will be checked by the DHDR EHR Service to determine if a consent block directive exists in the DHDR before releasing the patient's information. With the patient's or their SDM's consent, clinicians may temporarily unblock the patient consent directive using their EMR Offering to retrieve the patient's blocked information. The workflow to temporarily unblock a patient's dispense history is managed by the Provincial Consent Override Interface (PCOI) Viewlet.

Where a patient consent directive is encountered by the EMR Offering, the patient's records are blocked. The clinician (with the patient's or SDM's express consent) may request the DHDR EHR Service to unblock or override the patient consent directive, allowing temporary access to retrieve that patient's dispense history. When a temporary consent unblock request is accepted, it is unblocked for a limited period by the DHDR EHR Service. That patient's dispense history will be temporarily unblocked for all clinicians belonging to the same organization as the clinician who requested the temporary consent unblock. As part of this workflow, the clinician will have the opportunity to print a paper copy of the temporary consent unblock form for the patient to sign to document their consent. The signed paper copy is for internal record-keeping purposes to adhere to any auditing policies of a clinician's practice.

¹ Patients may contact Service Ontario or visit the MOH's website (<https://www.ontario.ca/mydruginfo>) to obtain the appropriate forms to formally request to block or unblock access to their drug and pharmacy service information. This process is managed by the MOH.

2.1.2 Provincial Consent Override Interface (PCOI) Viewlet

The PCOI Viewlet is a web-based interface utilized by the DHDR EHR Service that manages the workflow to process a temporary consent unblock for a given patient whose DHDR records are currently blocked by a patient consent directive. PCOI interacts with the EMR user to collect the necessary information to request a provincial consent override from the DHDR EHR Service. The following high-level steps are part of this hand-off from the EMR Offering to the PCOI Viewlet to manage the described workflow.

1. The EMR Offering attempts to retrieve the patient's DHDR records and encounters a patient consent block. The EMR Offering initiates the provincial consent override workflow by calling the PCOI Viewlet and providing information to identify the patient in question and the clinician making the request.
2. The EMR Offering waits for the workflow to be processed and the results to be returned from the PCOI Viewlet.
3. The PCOI Viewlet retrieves the patient context and initiates the consent override workflow.
4. The PCOI Viewlet proceeds through the workflow, which includes having the EMR user complete a web-based form to request the provincial consent override.
5. The provincial consent override request is captured by the PCOI Viewlet.
6. The request is submitted by the PCOI Viewlet to the DHDR EHR Service and notifies the EMR Offering upon completion.
7. The EMR Offering re-attempts to retrieve the patient's DHDR records again and the results are returned from the DHDR EHR Service – now temporarily unblocked.

The following diagram identifies the workflow within the EMR Offering when a patient consent directive is encountered. It illustrates the transition between the EMR Offering and the PCOI Viewlet.

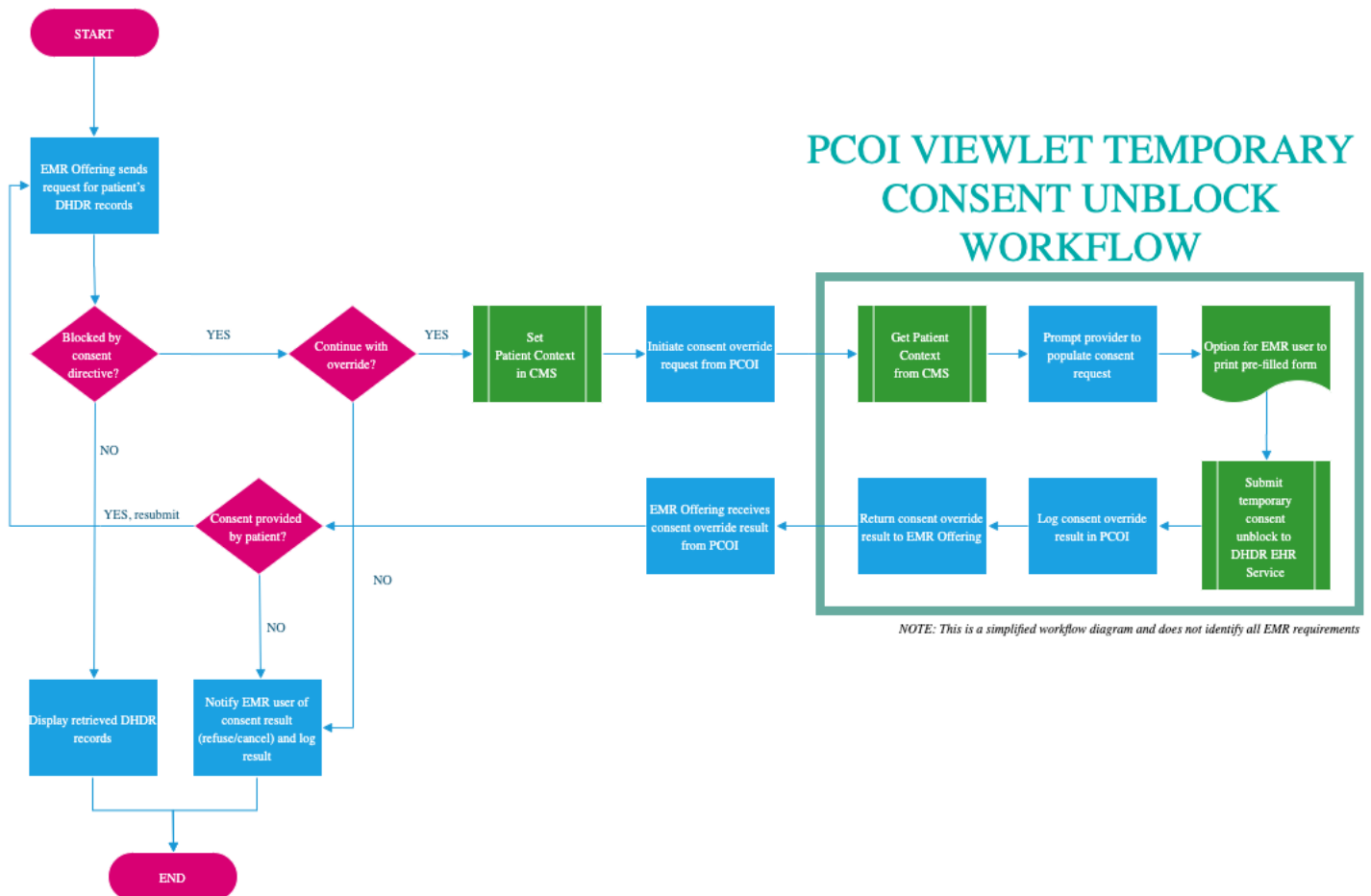


Figure 1 – Temporary consent unblocking interaction between EMR Offering and the PCOI Viewlet.

2.2 DHDR EHR Service Views

The following figures illustrate the distinction between the different ‘views’ that the EMR Offering is required to provide when displaying a patient’s dispense history retrieved from the DHDR EHR Service. These examples contain fictitious patient data and are intended for illustrative purposes only. Implementation of these views may vary in different EMR Offerings. Also, note that the data elements displayed in the illustrations may not accurately reflect the minimum data elements required to be displayed in each view; refer to the relevant EMR requirements for the list of data elements to display.

2.2.1 Summary View

The following diagram illustrates an example of a Summary View where the patient's dispensed drug events are retrieved from the DHDR EHR Service and displayed in an EMR Offering. Individual events that have the same generic name, strength, and form are grouped under the most recently dispensed event, with the Dispense Events Count indicating the actual number of dispensed drug events represented in each grouping. Each group is depicted with data about the most recent dispensed drug event (by Dispense Date) within that group. Refer to the requirements for the expected functionality.

Patient: John Doe
DOB: 2000-12-31

Drug Dispense Events from DHDR – Summary View (Grouped by Generic Name, Strength, Form)

Dispense Date	Pickup Date	Generic Name	Brand Name	Dose	Frequency	Drug Strength	Drug Dosage Form	Dispensed Quantity	Estimated Days Supply	Refills Remaining	Quantity Remaining	Prescriber First Name	Prescriber Last name	Dispense Events Count
2018-02-22	2018-02-23	Atenolol	TENORMIN	50mg	QD	50mg	Tablet	30	30	2	60	Jane	Smith	3
2014-12-16	2014-12-17	Atenolol	TENORMIN	25mg	QD	25mg	Tablet	30	30	3	90	Jane	Smith	2
2007-12-16	2007-12-17	Fluticasone propionate	FLOVENT	2 Puffs	BID	50mcg	Inhalation Aerosol	2	60	2	4	John	Johnson	2

Date retrieved from DHDR: 2019-06-31T23:59

Warning: Limited to Drug and Pharmacy Service Information available in the Digital Health Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.

Figure 2 - Illustration of the Summary View (Drug Dispense) in the EMR Offering

Note that the strength is different than the above group, which is why a separate grouping of dispense events is displayed.

Dispense events count indicates the Number of Drug Dispense Events in this grouping. Each line item in the Summary View represents a group of Drug Dispense Events.

Expanding a grouping of dispense events displays all the events in that grouping. Refer to the requirements for the expected functionality.

Patient: John Doe
DOB: 2000-12-31

Drug Dispense Events from DHDR – List View (ATENOLOL 50mg Tablet)

Dispense Date	Pickup Date	Generic Name	Brand Name	Dose	Frequency	Drug Strength	Drug Dosage Form	Dispensed Quantity	Estimated Days Supply	Refills Remaining	Quantity Remaining	Prescriber First Name	Prescriber Last name
2018-02-22	2018-02-23	Atenolol	TENORMIN	50mg	QD	50mg	Tablet	30	30	2	60	Jane	Smith
2017-12-22	2017-12-23	Atenolol	TENORMIN	50mg	QD	50mg	Tablet	15	15	3	45	Jane	Smith
2017-10-16	2017-10-17	Atenolol	TENORMIN	50mg	QD	50mg	Tablet	5	5	1	10	Julie	Jacobs

Date retrieved from DHDR: 2019-06-31T23:59

Warning: Limited to Drug and Pharmacy Service Information available in the Digital Health Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.

Figure 3 - Illustration of an expanded group of events (Drug Dispense) in the EMR Offering

The above expectations for the Summary View also apply when displaying the events which are pharmacy services. These events are grouped by the Pharmacy Service Type. Refer to the requirements for the expected functionality.

Patient: John Doe								
DOB: 2000-12-31								
Pharmacy Service Events from DHDR – Summary View (Grouped by Pharmacy Service Type)								
Dispensed Date	Pickup Date	Pharmacy Service Type	Pharmacy Service Description	Rx Number	Pharmacy Name	Pharmacist Name	Pharmacy Fax Number	Pharmacy Service Events Count
2018-02-22	2018-02-23	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-6068342	Best Pharmacy	Paul Smith	444-567-324	3
2014-12-16	2014-12-17	MedsCheck	Medication Review for Diabetes Follow-up	TST-6068350	Best Pharmacy	Paul smith	444-567-324	5
Date retrieved from DHDR: 2019-06-31T23:59								
Warning: Limited to Drug and Pharmacy Service Information available in the Digital Health Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.								

Figure 4 - Illustration of the Summary View (Pharmacy Service) in the EMR Offering

Note that the Pharmacy Service Type is different than the above group, which is why a separate grouping of dispense events is displayed.

These fields MAY be hidden on the view.

Count indicates the # of Pharmacy Service Events in this grouping. Each line item in the Summary View represents a group of Pharmacy Service Events.

Expanding a grouping of Pharmacy Service events displays all events in that grouping. Refer to the requirements for the expected functionality.

Patient: John Doe							
DOB: 2000-12-31							
Pharmacy Service Events from DHDR – Summary View (Fluviral-15mcg/0.5mL;5mL Multidose Vial)							
Dispensed Date	Pickup Date	Pharmacy Service Type	Pharmacy Service Description	Rx Number	Pharmacy Name	Pharmacist Name	Pharmacy Fax Number
2018-02-22	2018-02-23	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-6068342	Best Pharmacy	Paul Smith	444-567-324
2014-12-16	2014-12-17	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-6068120	Best Pharmacy	Paul smith	444-567-324
2007-12-16	2007-12-17	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-606825	Best Pharmacy	Paul smith	444-567-324
Date retrieved from DHDR: 2019-06-31T23:59							
Warning: Limited to Drug and Pharmacy Service Information available in the Digital Health Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.							

Figure 5 - Illustration of an expanded group of events (Pharmacy Service) in the EMR Offering

2.2.2 Comparative View

The following diagrams illustrate an example of a Comparative View. The patient's dispense events are retrieved from the DHDR EHR Service and displayed alongside prescription events stored in the EMR Offering. This view also applies to pharmacy service events. Refer to the requirements for the expected functionality.

Patient: John Doe

DOB: 2000-12-31

Drug Dispense Events from DHDR – Summary View (Grouped by Generic Name, Strength, Form)

Dispense Date	Pickup Date	Generic Name	Brand Name	Dose	Frequency	Drug Strength	Drug Dosage Form	Dispensed Quantity	Estimated Days Supply	Refills Remaining	Quantity Remaining	Prescriber First Name	Prescriber Last name	Dispense Events Count
2018-02-22	2018-02-23	Atenolol	TENORMIN	50mg	QD	50mg	Tablet	30	30	2	60	Jane	Smith	3
2014-12-16	2014-12-17	Atenolol	TENORMIN	25mg	QD	25mg	Tablet	30	30	3	90	Jane	Smith	2
2007-12-16	2007-12-17	Fluticasone propionate	FLOVENT	2 Puffs	BID	50mcg	Inhalation Aerosol	2	60	2	4	John	Johnson	2

Date retrieved from DHDR: 2019-06-31T23:59

Warning: Limited to Drug and Pharmacy Service Information available in the Digital Heath Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.

Prescription Event(s) in EMR

Written Date	Start Date	Name of the Medication	Drug Strength	Dosage	Frequency	Duration or Quantity (First Fill)	Number of Refills	Refill Duration or Quantity	Prescriber First Name	Prescriber Last Name
2014-01-01	2014-01-03	HUMULIN 30/70 100 UNIT/ML (30-70) SUSPENSION	100 unit/mL (30-70)	6units	TID	3 Vials	2	6 Vials	Simon Samson	Samson

Figure 6 - Illustration of Comparative View (Drug Dispense) in EMR Offering

Patient: John Doe

DOB: 2000-12-31

Pharmacy Service Events from DHDR – Summary View (Fully Expanded)

Dispensed Date	Pickup Date	Pharmacy Service Type	Pharmacy Service Description	Rx Number	Pharmacy Name	Pharmacist Name	Pharmacy Fax Number
2018-02-22	2018-02-23	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-6068342	Best Pharmacy	Paul Smith	444-567-324
2014-12-16	2014-12-17	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-6068120	Best Pharmacy	Paul smith	444-567-324
2007-12-16	2007-12-17	Fluviral-15mcg/0.5mL;5mL Multidose Vial	INFLUENZA VACCINE PROGRAM PROFESSIONAL SERVICE FEE	TST-606825	Best Pharmacy	Paul smith	444-567-324
2014-12-16	2014-12-17	MedsCheck	Medication Review for Diabetes Follow-up	TST-6068350	Best Pharmacy	Paul smith	444-567-324
2013-12-16	2013-12-17	MedsCheck	Medication Review for Diabetes Follow-up	TST-6068312	Best Pharmacy	Paul smith	444-567-324

Date retrieved from DHDR: 2019-06-31T23:59

Warning: Limited to Drug and Pharmacy Service Information available in the Digital Heath Drug Repository (DHDR) EHR service. To ensure a Best Possible Medication History, please review this information with the patient/family and use other available sources of medication information in addition to the DHDR EHR service.

Prescription Event(s) in EMR

Written Date	Start Date	Name of the Medication	Drug Strength	Dosage	Frequency	Duration or Quantity (First Fill)	Number of Refills	Refill Duration or Quantity	Prescriber First Name	Prescriber Last Name
2014-01-01	2014-01-03	HUMULIN 30/70 100 UNIT/ML (30-70) SUSPENSION	100 unit/mL (30-70)	6units	TID	3 Vials	2	6 Vials	Simon Samson	Samson

Figure 7 - Illustration of Comparative View (Pharmacy Service) in EMR Offering

2.2.3 Detailed View

The following diagrams illustrate an example of the Detailed View. The Detailed View provides the EMR user with the full set of data about a single dispensed drug event from the list of events shown in a Summary View. This view does not apply to pharmacy service events. Refer to the requirements for the expected functionality.

Patient: John Doe	
DOB: 2000-12-31	
Detailed View (ATENOLOL 50mg Tablet – Dispensed 2018-02-22)	
Element	Value
Current Rx Number	01324
Dispense Date	2018-02-22
Pickup Date	2018-02-23
DIN	02039532
Generic Name	Atenolol
Brand Name	TENORMIN
Medical Condition/Reason for Use	Hypertension
Dose	50mg
Frequency	QD
Drug Strength	50mg
Drug Dosage Form	Tablet
Dispensed Quantity	2
Estimated Days Supply	30
Refills Remaining	2
Quantity Remaining	60
Prescriber First Name	Jane
Prescriber Last Name	Smith
Prescriber ID	4758621
Prescriber Professional ID	College of Physicians and Surgeons of Ontario
Prescriber Phone #	123-345-678
Pharmacist	John Johnson
Dispensing Pharmacy	Best Pharmacy
Dispensing Pharmacy Fax #	444-567-324

Figure 8 - Illustration of a Detailed View in the EMR Offering

3. APPENDIX A: GLOSSARY OF KEY TERMS AND DEFINITIONS

3.1 Acronyms and Abbreviations

The following table lists abbreviations and acronyms used in this specification.

ACRONYM	DEFINITION
API	Application Programming Interface
BPMH	Best Possible Medication History
CPP	Cumulative Patient Profile
CPSO	College of Physicians and Surgeons of Ontario
DHDR	Digital Health Drug Repository
DIN	Drug Identification Number
DUR	Drug Utilization Review
EAP	Exceptional Access Program
EHR	Electronic Health Record
EMR	Electronic Medical Record
FHIR	Fast Healthcare Interoperability Resources
HCN	Health Card Number
HIC	Health Information Custodian
HL7	Health Level Seven
MOH	Ministry of Health (formerly MOHLTC)
NMS	Narcotics Management System
ODB	Ontario Drug Benefit
PCOI	Provincial Consent Override Interface
PCR	Provincial Client Registry
PHI	Personal health information
PHIPA	Personal Health Information Protection Act
PIN	Product Identification Number

ACRONYM	DEFINITION
SADIE	Special Authorization Digital Information Exchange
SDM	Substitute decision-maker
UAO	Under the Authority of
URI	Uniform Resource Identifier
URL	Uniform Resource Locator

3.2 Definitions

The following table lists definitions for terms used in or are relevant to this specification.

TERM	DEFINITION
Dispense event	<p>A single dispense of medication or delivery of a pharmacy service recorded for the patient.</p> <p>This may include data about the patient, the dispense event, the practitioner who prescribed the medication or pharmacy service that was dispensed, the practitioner who dispensed the prescribed medication or pharmacy service, and other system information as it relates to this information.</p>
Dispense history	<p>The complete set of dispense events for the patient.</p> <p>In the context where filters or constraints are applied, this encompasses the subset of dispense events for that patient.</p>
Medication event	A single medication, either prescribed by the clinician or recorded for the patient in the EMR Offering
Medication history	The complete set of medication events recorded in the EMR Offering for the patient
Patient chart	Patient cumulative profile in the EMR
Under the Authority of (UAO)	<p>This information is useful to identify the HIC when another agent or system acts under the authorization of the HIC. This information is used to identify the organization for whom to temporarily unblock a patient consent directive.</p> <p>Note: The use of the UAO and implementation of a patient consent directive are specific to each EHR service.</p>