EMR EHR Connectivity

Context Management – Business View

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Table of Contents

1. INTRODUCTION 3

1.1 OVERVIEW 3
1.2 CONTEXT MANAGEMENT 3

2. BUSINESS VIEW 4

2.1 BUSINESS DRIVERS 4

3. SYSTEM VIEW 5

3.1 SYSTEM OVERVIEW 5
3.2 HIGH-LEVEL FLOW OF CONTEXT MANAGEMENT 5

4. DATA VIEW 7

4.1 PATIENT CONTEXT PARAMETERS 7

5. APPENDIX A: GLOSSARY OF KEY TERMS AND DEFINITIONS 8

5.1 ACRONYMS AND ABBREVIATIONS 8
5.2 DEFINITIONS 9

1. INTRODUCTION

1.1 Overview

Context Management allows an EMR to include specific context data when requesting information from other systems such as EHR Services or Viewlets so that the information returned to the EMR is relevant to the context provided. An example of Context Management is requesting information from an EHR product or service with the context of the desired patient which returns information only for that specific patient; the EMR user does not need to manually search for information about that patient. This allows for a more efficient and natural transition for the clinician when information is presented from different systems that leverage Context Management.

1.2 Context Management

Context Management defines a standard for an EMR to communicate to EHR Services or Viewlets in a way that allows the EMR to provide information that is specific to a given context. Examples of context that can be shared include patient, provider, or organization. Context information can be shared as long as it is defined and understood by all systems expected to retrieve or provide the context. This document defines EMR requirements for context management.

Context Management provides a streamlined and logical transition when presenting information from multiple systems. For example, a clinician reviewing a patient's medical profile may want to connect to another system, for example, the Digital Health Drug Repository (DHDR), to retrieve dispensed medication history for that same patient. The clinician could seamlessly connect to and access DHDR (if the EMR Offering leverages Single Sign-On) information specific to the patient. While this can be accomplished by simply searching for information specific to the patient from the DHDR, each system may have different ways to perform queries for a specific patient. Context Management standardizes the method to request information for a specific patient to reduce or eliminate the need to develop a different query for each system, reducing development time and establishing a more standard approach.

2. BUSINESS VIEW

2.1 Business Drivers

Health-care providers can deliver enhanced patient care with streamlined access to information and the ability to coordinate with other care providers. Integrating EMR Offerings with provincial EHR services is one of the ways to help clinicians achieve this goal. Launching a website is one method by which EMR users can access EHR Services. EMR users want the website to be launched with information that is relevant to the same patient opened who was opened within their EMR system. One example would be an EMR user looking at a patient record in their EMR who launches a Viewlet. When the Viewlet launches information about the same patient it is automatically (and seamlessly) presented in a browser window.

3. SYSTEM VIEW

3.1 System Overview

There are conceptually four systems involved in context management from an EMR Offering.

1. **EMR Offering:** Point of service used by clinicians to access EHR Services
2. **ONE Access Gateway:** Orchestrates the identification, authentication of the EMR user and EMR Offering, and their requests for authorizations to an EHR Service. It also provides information to the EMR Offering needed to interact with the Context Management Service, Viewlet, and EHR Service.
3. **Context Management Service (CMS):** Receives context data from EMR Offerings through the ONE Access Gateway and provides it to EHR services and Viewlets.
4. **EHR Service or Context-Aware Viewlet**: The service that leverages and expects to receive context data.

3.2 High-Level Flow of Context Management

The EMR user authenticates using their federated identity credentials and the EMR system has extracted the hub.topic value.

At the time of logging in using federated identity credentials, the EMR offering sends organization and provider-specific context to CMS through the ONE Access Gateway (OAG). The patient-specific context is set when an EMR user accesses a patient record within the EMR at the time of launching a Viewlet as part of accessing an EHR service.

The diagram below depicts the Context Management flow within the red box. The diagram provides an example of the workflow from the EMR user logging in, authenticating their IDP credentials, setting context data in the CMS, and interacting with an EHR Service that leverages a Viewlet using context sharing for a patient. This specific example is of the DHDR EHR Service that leverages the PCOI Viewlet. The areas that pertain to patient context sharing in the diagram are:

1. **Set Context:** The EMR Offering sends patient context data to the CMS through the OAG.
2. **Return hub.topic:** The CMS returns a hub.topic value to the EMR Offering through the OAG.
3. **Call EHR Service:** The EMR Offering launches the EHR Service.
4. **Retrieve Context:** The EHR Service retrieves context data from the CMS.
5. **EHR Service Return:** The EMR Offering Launches the EHR Service or Viewlet that supports context management via a web client (e.g., iFrame).

Figure 1 - Sequence diagram of EMR interaction with EHR service to set the context

4. DATA VIEW

4.1 Patient Context Parameters

The following section provides an example of patient context data sent from the EMR to the CMS. For the most up-to-date list, refer to https://simplifier.net/guide/OntarioContextManagement/ProfilesTransactions3.

Information for EMR Offerings to support additional context beyond patient context is provided (e.g., provider context), but is not currently implemented in any existing EHR product or service.

5. APPENDIX A: GLOSSARY OF KEY TERMS AND DEFINITIONS

5.1 Acronyms and Abbreviations

This table identifies definitions for terms used within or that are relevant to this document.

ACRONYM	DEFINITION
CMS	Context Management System
DHDR	Digital Health Drug Repository
EHR	Electronic Health Record
EMR	Electronic Medical Record
FHIR	Fast Healthcare Interoperability Resources
HCN	Health Card Number
OAuth2	Open Authentication 2.0
PCOI	Provincial Consent Override Interface
URI	Uniform Resource Identifier
URL	Uniform Resource Locator

5.2 Definitions

The following are the terms and definitions used to describe the concepts used in this document.

TERM	DEFINITION
Context-Aware EHR Service	An EHR service that supports Context Management. **Note**: Not all EHR services support Context Management.
Context Response Wait Time	The amount of time (in seconds) that an EMR Offering MUST wait for a response back from any Context-Aware EHR Service. This time starts when the patientContext Topic is sent by the EMR Offering. This value is global and pertains to all supported Context-Aware EHR Services.
EHR Service	A service hosted on the ONE Access Provider Gateway. An EHR Service may or may not supports Context Management. Every EHR Service will have its own unique target endpoint within the EMR Offering.
Viewlet	A webpage or website that is a component of an EHR service used to fulfill a specific function or workflow for that EHR service. Some Viewlets can be Context-Aware and leverage context sharing (e.g., PCOI).