

PDMP on FHIR Overview

A brief introduction

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What is FHIR?

- “**FHIR® – Fast Healthcare Interoperability Resources** (hl7.org/fhir) – is a next generation standards framework created by HL7. FHIR combines the best features of HL7's v2 , HL7 v3 and CDA product lines while leveraging the latest web standards and applying a tight focus on implementability.”
- “FHIR solutions are built from a set of **modular components called "Resources"**. These resources can easily be assembled into working systems that solve real world clinical and administrative problems FHIR is suitable for use in a wide variety of contexts – mobile phone apps, cloud communications, EHR-based data sharing, server communication in large institutional healthcare providers, and much more.”
- “FHIR solves this challenge [wide variability] by defining a simple **framework for extending the existing resources and describing their use with Profiles**. All systems can read all resources, but applications can add more control and meaning using profiles. Many healthcare contexts require extensive local agreements.”
- “In addition, each resource carries a human-readable text representation using html as a fall-back display option for clinical safety. This is particularly important for complex clinical information where many systems take a simple textual/document based approach.”

FHIR Standards Development

Normative

This content has been subject to review and production implementation in a wide variety of environments. The content is considered to be stable and has been 'locked', subjecting it to FHIR [Inter-version Compatibility Rules](#). While changes are possible, they are expected to be infrequent and are tightly constrained.

Trial Use

This content has been well reviewed and is considered by the authors to be ready for use in production systems. It has been subjected to ballot and approved as an official standard. However, it has not yet seen widespread use in production across the full spectrum of environments it is intended to be used in. In some cases, there may be documented known issues that require implementation experience to determine appropriate resolutions for.

Future versions of FHIR may make significant changes to *Trial Use* content that are not compatible with previously published content.

Informative

This portion of the specification is provided for implementer assistance and does not make rules that implementers are required to follow. Typical examples of this content in the FHIR specification are tables of contents, registries, examples, and implementer advice

Implementation Guides

- Can add constraints to Resources
 - Patient date of birth **MUST** be present
 - Practitioner identifier **MUST** be present, and **MAY** include an NPI
- Can add extensions to Resources
 - Added Morphine Milliequivalent Dose (MME)
 - Added Method of Payment
- Can specify terminologies
 - United States Core Data for Interoperability ([USCDI](#))
 - PDMP Method of Payment (references PMIX)
- IGs can be layered

FHIR “Core”
*The Resources as defined
in FHIR*

“US Core” IG
*Constraints and
Extensions for general
use in the US*

PDMP on FHIR IG
*Constraints and
Extensions for PDMP
implementations*

PDMP on FHIR

- Project objective
 - To develop a FHIR® Implementation Guide (FHIR IG) to support prescriber and pharmacist request for PDMP reports from PDMP systems.
- Why?
 - The PDMP query/response is the one PDMP-related exchange that does not have a consistent standards-based solution.
 - A large proportion of prescribers use EHRs, practice management and related systems. To achieve interoperability goals, many of these systems have or are implementing FHIR services.
 - Leveraging the existing FHIR work should facilitate implementation of FHIR-based PDMP query

<https://build.fhir.org/ig/HL7/fhir-pdmp/> (CI Build)

Point-of-Care Partners, Inc.

HL7 International US Prescription Drug Monitoring Program (PDMP) 1.0.0-ballot - STU1 Ballot

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US Prescription Drug Monitoring Program (PDMP), published by HL7 International / Pharmacy. This guide is not an authorized publication; it is the continuous build for version 1.0.0-ballot built by the FHIR (HL7® FHIR® Standard) CI Build. This version is based on the current content of <https://github.com/HL7/fhir-pdmp/> and changes regularly. See the [Directory of published versions](#).

1 PDMP IG Home Page

1.1 Introduction

Prescription Drug Monitoring Programs (PDMPs) are state-based databases that provide prescribers and pharmacists with timely information about controlled substance, and in some states non-controlled substance, dispensing, administration and patient behaviors. Use of information stored in PDMPs during care delivery helps avoid drug misuse and diversion and can provide improved patient care and safety.

To reduce opioid misuse, reduce drug diversion, and for other purposes, states have implemented policies mandating providers to reference PDMPs to obtain a patient's PDMP history before prescribing or dispensing certain medications. The Prescription Drug Monitoring Program (PDMP) FHIR Implementation Guide defines a method for providers to request and retrieve patient PDMP information using the HL7 FHIR standard.

For general background on state PDMP programs, see the Centers for Disease Control and Prevention [PDMP - What States Need to Know](#).

1.1.1 PDMP Ecosystem

The Figure 1, below, shows an overview of the PDMP reporting ecosystem. This diagram was adapted from Prescription Drug Monitoring Program Training and Technical Assistance Center [PDMP TTAC(<https://www.pdmpassist.org>)]. PDMP TTAC is an organization of PDMPs, federal partners and other stakeholders which has establish technical standards and provides other services, support, resources, & strategies to further the efforts and effectiveness of PDMPs.

In this figure,

- a user can interact with a State PDMP System directly (i.e., a web portal) or through a Health care or pharmacy entity (e.g., EHR, pharmacy system)
- Health care or pharmacy entity can interact with a State PDMP System directly or via an Integration Facilitator
- State PDMP Systems exchange information with each other through an inter-PDMP Hub
- ovals have been added to the diagram to identify PDMP Requestors (yellow) and PDMP Responders (green)

Outside of a user accessing a State PDMP System via a web portal, the interactions in Figure 1 can support discrete data exchange.

Figure 1: An overview of the PDMP ecosystem adapted from PDMP TTAC

The diagram illustrates the PDMP ecosystem. It shows a User interacting with a State PDMP System. A Health care or pharmacy entity (User) also interacts with the State PDMP System. An Integration Facilitator connects the Health care or pharmacy entity to the State PDMP System. The State PDMP System is connected to an inter-PDMP hub, which in turn connects to other State PDMP Systems. The diagram uses yellow ovals to highlight PDMP Requestors (User and Health care or pharmacy entity) and green ovals to highlight PDMP Responders (State PDMP System).

- Introduction
- Scope
- Out of Scope
- Actors and Definitions
- Content and Organization
- FHIR Basics
- Sponsoring HL7 Workgroup
- Authors
- Stakeholders
- Dependencies
- Cross Version Analysis
- Global Profiles
- IP Statements



The PDMP on FHIR Project

- July 2023 – initial outreach
 - NABP assisted in outreach
- 70+ on distribution list
 - Most PDMP administrators
 - Most PDMP vendors
 - Some EHR vendors
- Twice-weekly Zoom calls
 - One for general work, the other for technical discussions
 - 25+ participants on general calls
 - 8-12 on technical calls
 - August – December 2023
 - January – March 2024
 - May – June 2024 post ballot reconciliation calls
- Ballot Results
 - 120 registered for ballot
 - 42 affirmative
 - 16 negative
 - 38 abstained
 - 92 comments submitted
 - 25 Change Requests
 - 61 Technical Corrections
 - 6 Questions
- Ballot votes and comments have been addressed
 - Pending 5 issues with complex solutions
 - Pending PDMP-specific value sets addition to HL7 Terminology Service
- Anticipate publication in September 2024

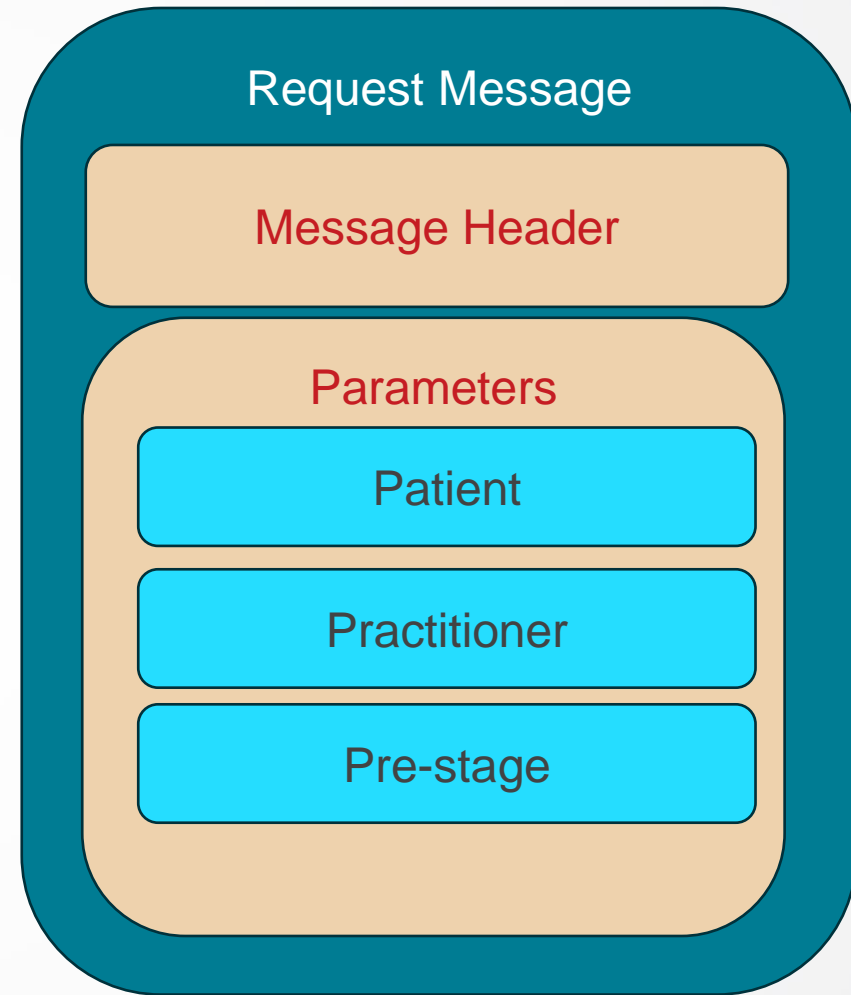


Resources used in PDMP

- Profiled for PDMP
 - PDMP Bundle - History Result
 - PDMP Bundle - Request Message
 - PDMP Bundle - Response Message
 - PDMP MedicationAdministration
 - PDMP MedicationDispense
 - Profiled from US Core MedicationDispense
 - PDMP MessageHeader - Request
 - PDMP MessageHeader - Response
 - PDMP Organization – Pharmacy
 - Profiled from US Core Organization
 - PDMP Parameters - Request
 - PDMP Parameters - Response
 - PDMP Patient
 - Profiled from US Core Patient
- US Core
 - US Core Practitioner
 - US Core PractitionerRole
 - US Core Organization
 - US Core RelatedPerson
 - US Core MedicationRequest
 - US Core Medication
- FHIR R4 Core
 - Bundle
 - MessageHeader
 - Parameters
 - Alert

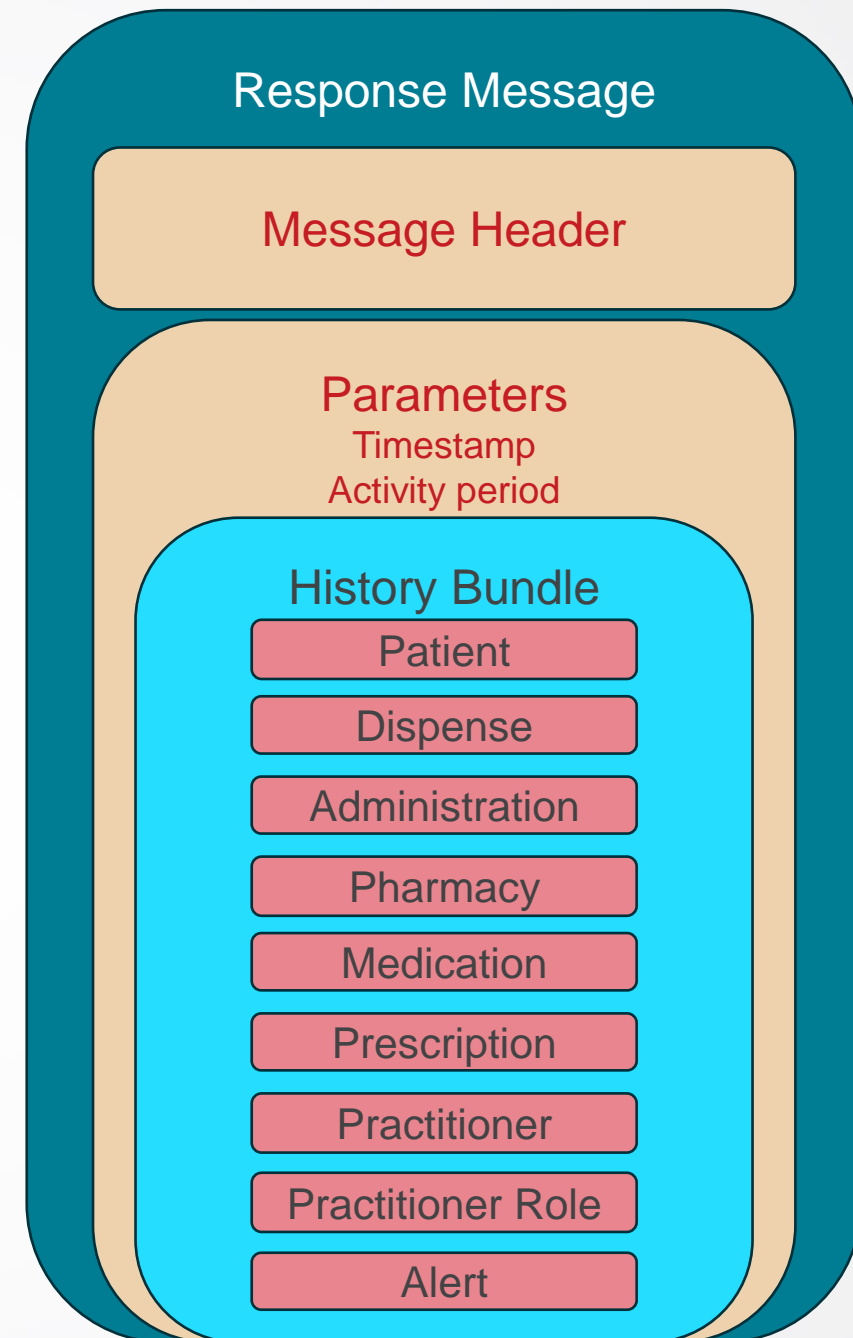
PDMP on FHIR Design - Request

- The Request Message
 - Message Header
 - Identifies the target system
 - Parameters
 - Patient
 - Patient
 - Animal owner
 - Practitioner
 - Practitioner, role, organization
 - Delegate, role organization
 - Pre-stage
 - Pre-stage flag
 - Pre-stage retrieval key



PDMP on FHIR Design - Response

- The Response Message
 - Message Header
 - Parameters
 - Timestamp and report date range
 - History Bundle
 - Patient
 - Dispense
 - Administration
 - Pharmacy
 - Medication
 - Prescription
 - Practitioner
 - Practitioner Role
 - Alert



Useful Links

- FHIR

- [R4](#)

- many IGs are based on this version

- [R5](#)

- Current Version

- [CI Build](#)

- Continuous Integration Build
- includes current work in progress

- Ballot for R6 coming soon

- US Core

- [v6.1.0 STU6](#)

- Current Version

- [CI Build](#)

- PDMP on FHIR

- [CI Build](#)

- Undergoing final checks and edits prior to publication

- v1.0.0 STU1

- Pending publication
- Targeting for Sept 2024

- HL7 Confluence – [PDMP on FHIR Page](#)

- Development material, meeting minutes
- Anyone can view
- More features with a (free) account
 - [Request an account](#)

Thank You

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Point-of-Care Partners



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