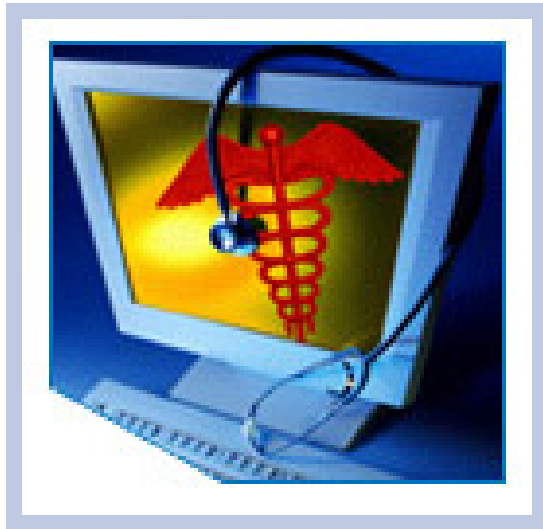


# HITSP Query for Existing Data Transaction Package

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HITSP/TP21



*Submitted to:*

**Healthcare Information Technology Standards Panel**

*Submitted by:*

**Population Health Technical Committee**



## DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
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## 1.0 INTRODUCTION

As an introduction to the HITSP Query for Existing Data Transaction Package, this section provides a high level overview of the information sharing scenario enabled by following this specification, provides a document map of the construct relationships for the HITSP specification, acknowledges the copyright protections that pertain, and provides links to key reference documents and background material. If you are already familiar with this information, proceed to Section 2.0 Transaction Package Definition.

### 1.1 OVERVIEW

This section describes the contents of this specification and provides a high level definition of this Transaction Package and background information about the underlying Transactions and Components that the Transaction Package is based on.

To support the HITSP Query of Existing Data Transaction Package, HITSP is using the Integrating the Healthcare Enterprise (IHE) Query for Existing Data Integration Profile (QED), as described in the IHE Patient Care Coordination Technical Framework (IHE PCC-TF).

The text for the IHE PCC-TF specification begins here:

The Query for Existing Data Integration Profile (QED) supports dynamic queries for clinical data, including vital signs, problems, medications, immunizations, diagnostic results, procedures and visit history. A wide variety of systems often needs access to dynamic clinical information stored and maintained in an EMR system or other clinical data repository. This profile makes the information widely available to other systems within and across enterprises to support provision of better clinical care. The information made available by this profile can be used to support clinical care, quality reporting, financial transactions, public health reporting, clinical trials, drug interaction checking, and patient qualification for various protocols.

The text for the IHE PCC-TF specification ends here.

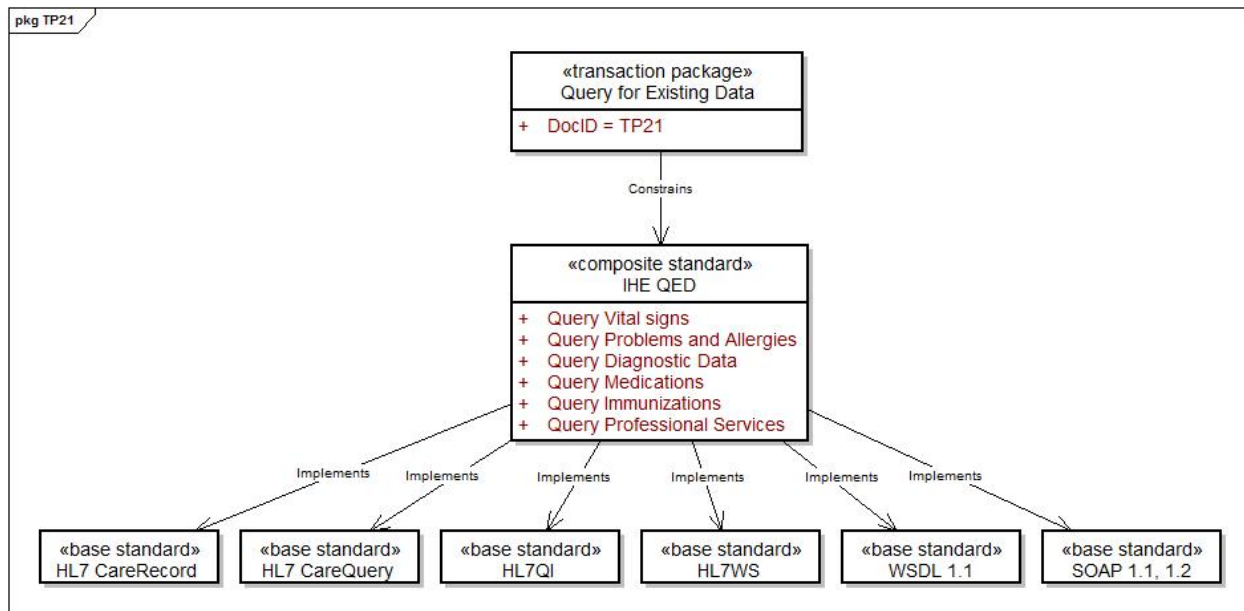
### 1.2 TRANSACTION PACKAGE CONSTRUCT ROADMAP

Each HITSP specification describes a suite of constructs that, taken as a whole, define how to integrate and constrain existing standards and specifications that will satisfy the requirements for the HITSP construct. There are four types of HITSP constructs called Interoperability Specifications (IS), Transaction Packages (TP), Transactions (T), and Components (C). Interoperability Specifications define the context(s) in which any other HITSP construct may be used. The current Query for Existing Data Transaction Package specification is used with other constructs to meet the requirements of one or more ISs. Review Section 1.2 (Interoperability Specification Construct Roadmap) from the relevant IS to better understand the context, dependencies, and relationships between the constructs used to meet the IS requirements. The roadmap in Figure 1.2-1 depicts how this construct integrates and constrains HITSP



constructs and existing standards selected or referenced to support the information exchange between two or more systems, within the defined context of this document. Implementers should read the documents that describe the constructs depicted in the diagram for their details and specific uses.

**Figure 1.2-1 Transaction Package Construct Roadmap**



### 1.3 COPYRIGHT PERMISSIONS

#### COPYRIGHT NOTICE

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IHE materials used in this document have been extracted from relevant copyrighted materials with permission of Integrating the Healthcare Enterprise (IHE). Copies of this standard may be retrieved from the IHE Web Site at [www.ihe.net](http://www.ihe.net).



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## 1.4 REFERENCE DOCUMENTS

This section contains links to key reference documents and background material.

The HITSP Interoperability Specification Overview provides the background information about the HITSP and its role in the overall U.S. efforts to realize large scale interoperability of health information. The document also provides a description of the HITSP process for healthcare standards harmonization and explains how to use the Interoperability Specifications and other related documents to inform your health IT product development or product refinement.

The conventions that are used to convey the full descriptions and usage of standards in the HITSP specifications are contained in the HITSP Conventions List.

The acronyms used in this document are contained in the HITSP Acronyms List.

The HITSP Glossary provides definitions for relevant terms used by HITSP documents.

The HITSP Harmonization Framework describes the current framework within which the Interoperability Specifications are built.

A Technical Note, TN900 - Security and Privacy, has been developed as a reference document to provide the overall context for use of the HITSP Security and Privacy constructs. It includes the following:

- The scope, reference policy background, and Security and Privacy principles used in the development of the constructs
- A detailed description and schematics of the conceptual relationship between the Security and Privacy constructs
- A mapping of existing standards and constructs to be used in meeting the stated requirements of the AHIC Use Cases
- A list of identified gaps and the recommended approaches to resolving those gaps
- A roadmap for how the Security and Privacy constructs will evolve and eventually align with other HITSP Interoperability Specifications
- A conceptual framework for Security and Privacy management, including reference information on privacy policies, risk assessment, and risk management
- A glossary of terms used in all the Security and Privacy construct documents
- A description of the application of the Security and Privacy constructs to the HITSP Interoperability Specifications for the three initial AHIC Use Cases – Biosurveillance, Electronic Health Records -



## Laboratory Results Reporting, and Consumer Empowerment

HITSP will periodically update this Technical Note as required by the introduction of new contexts for use.

RELEASED FOR IMPLEMENTATION





## 2.0 TRANSACTION PACKAGE DEFINITION

Transaction Packages define how two or more Transactions are used to support a stand-alone information exchange within a defined context between two or more systems.

### 2.1 CONTEXT OVERVIEW

This section provides a general description of the Transaction Package. It includes a detailed definition of the Transaction Package and the reason for its use. It also provides all the necessary background information that further describes the context in which the Transaction Package is needed, and the independent Transactions and Components that the Transaction Package is based on.

This Transaction Package enables interoperable systems, e.g. those supporting quality measurements, to query and retrieve data from another clinical system. The Transaction Package supports queries for:

- Vital signs
- Problems and Allergies
- Diagnostic Data
- Medications
- Immunizations
- Professional Services

#### 2.1.1 TRANSACTION PACKAGE CONSTRAINTS

This section describes the constraints that limit the context in which the Transaction Package construct may be used. A constraint describes a rule that limits the use of the actors, actions or data within the given context, or to which the interactions must conform to be used within the described context. It is a description of the limits and scope of the interactions and can describe actions or events that are not part of the initial definition for the context.

**Table 2.1.1-1 Transaction Package Constraints**

Constraint
No applicable constraints.

#### 2.1.2 TECHNICAL ACTORS

This section describes the technical actors that need to be integrated in order to meet the interoperability requirements for this Transaction Package. A technical actor represents an entity internal to a software application, which is engaged in one or more specific Transactions to support a specific aspect of a real world information interchange (e.g., set of message exchanges). The table below lists the technical actors involved in the Transaction Package, a definition of their roles, an indication of their optionality, the



specific Transactions and content with which they are involved, and the optionality of the associated Transactions and/or content.

**Table 2.1.2-1 Technical Actors**

Technical Actor	Description	Used in Component/Standard	Transaction/Content	T/C Optionality
Clinical Data Consumer	A clinical data consumer makes use of clinical patient data.	HITSP/TP21 - Query for Existing Data	Query Vital signs	C[202]
			Query Problems and Allergies	C[202]
			Query Diagnostic Data	C[202]
			Query Medications	C[202]
			Query Immunizations	C[202]
			Query Professional Services	C[202]
Vital Signs Data Repository	A Vital Signs Data Repository maintains patient vital signs data.	HITSP/TP21 - Query for Existing Data	Query Vital signs	R
Problems and Allergies Data Repository	A Problems and Allergies Repository maintains patient problem and allergy data.	HITSP/TP21 - Query for Existing Data	Query Problems and Allergies	R
Diagnostic Data Repository	A Diagnostic Data Repository maintains results from diagnostic tests (e.g., Lab, Imaging, or other test results).	HITSP/TP21 - Query for Existing Data	Query Diagnostic Data	R
Medications Data Repository	A Medications Data Repository maintains patient medication data	HITSP/TP21 - Query for Existing Data	A Medications Data Repository maintains patient medication data	R
Immunizations Data Repository	An Immunizations Data Repository maintains patient immunization data	HITSP/TP21 - Query for Existing Data	Query Immunizations	R
Professional Services Data Repository	A Professional Services Data Repository maintains data about historical or planned visits and procedures.	HITSP/TP21 - Query for Existing Data	Query Professional Services	R

**NOTE:** Optionality = "R" for Required, "R2" for Required if known, "O" for Optional, or "C" for Conditional. Conditional footnotes are further described below.

#### Transaction/Content (T/C) Optionality Conditions

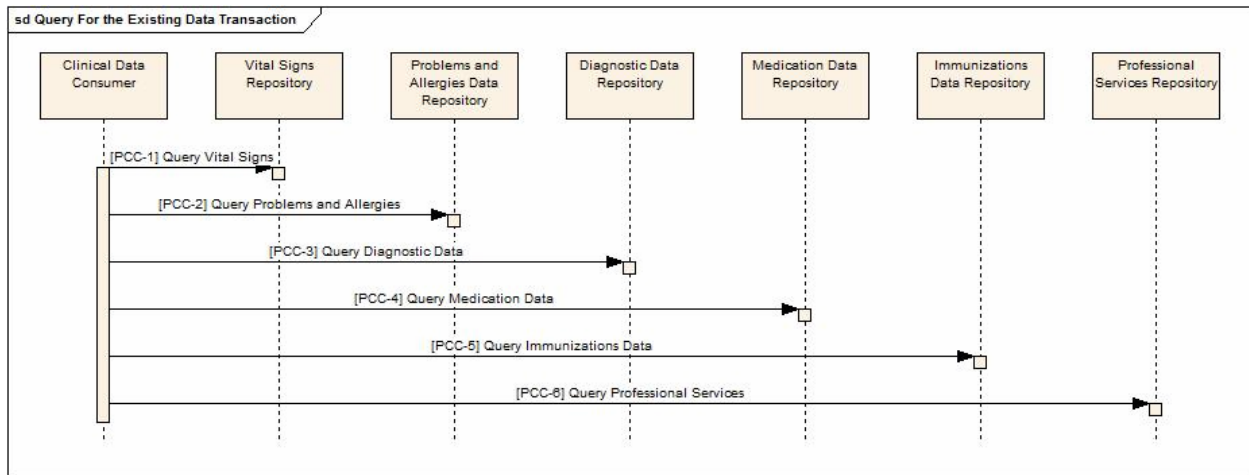
- C[202]: The Actor shall support at least one of these transactions.

#### 2.1.3 ACTOR INTERACTIONS

This section uses a Unified Modeling Language (UML) workflow diagram to depict the business and technical actors, the relevant events or actions in which they are involved, and a mapping to the Transactions, and Components that encapsulate the defined events or actions. It describes the underlying events that fulfill the Transaction Package, the sequence and timing of the events, and the specific actors involved. Process flow diagrams are also provided to illustrate the process relationships. A description of the UML diagram is also provided below the diagram.



**Figure 2.1.3-1 Query for Existing Data Transactions**



The Clinical Data Consumer requests a list of data (vital signs, problems, allergies, diagnoses, medications, or immunizations) matching a minimal set of selection criteria from the respective Data Repository. The appropriate Data Repository returns data (vital signs, problems, allergies, diagnoses, medications, or immunizations) matching the selection criteria supplied by the Clinical Data Consumer.

Further details can be found in section 4.1 of the IHE PCC Technical Framework, Volume 2.

#### 2.1.4 PRE-CONDITIONS

This section describes the necessary conditions that must be in place prior to the start of the workings of the Transaction Package. The pre-conditions are used to convey any conditions that must be true at the outset of a Transaction Package. They describe the context that must be established before the Transaction Package is executed. They are not however the triggers that initiate the Transaction Package. Where one or more pre-conditions are not met, the behavior of the Transaction Package should be considered uncertain.

**Table 2.1.4-1 Pre-conditions**

Pre-condition
It is expected that the security framework under which this Transaction Package operates is in accordance with the Interoperability Specification that references this construct. Therefore all applicable HITSP Security and Privacy constructs are implemented as required.
Consistent time is established, using HITSP/T16 - Consistent Time
A secure communications channel is available, as provided with HITSP/T17 - Secured Communication Channel
The ability to collect an audit trail is provided, using HITSP/T15 - Collect and Communicate Security Audit Trail
HITSP/TP30 - Manage Consent Directives is used to document the authorization directive for release of the requested data, whether by patient or by regulation



#### 2.1.4.1 Process Triggers

This section describes the triggers, including actors and/or processes, which are necessary to start the Transaction Package. They can invoke an automatic or manual process or result that in turn starts off the Transaction Package. A trigger is not the same as a pre-condition that describes a context that needs to be in place at the start of the event.

**Table 2.1.4.1-1 Process Triggers**

Process Trigger
HL7 trigger event: <a href="#">OUPC_TE043100UV</a>

#### 2.1.5 POST-CONDITIONS

This section provides an overview of the conditions or results that must occur at the end of the Transaction Package, in order for the Transaction Package to be deemed successfully completed. This includes any required outputs from the Transaction Package, or specific actor states.

**Table 2.1.5-1 Post-conditions**

Post-condition
The requested clinical data are returned to the clinical data consumer.

#### 2.1.5.1 Required Outputs

This section identifies the required outputs that must be produced at the end of the Transaction Package in order for the Transaction Package to be deemed successfully completed. This includes the format and usage of the required output.

**Table 2.1.5.1-1 Required Outputs**

Required Output	Format/Usage
All required outputs are specified in detail by the IHE PCC Technical Framework sections 4.1-4.6.	

#### 2.1.6 DATA FLOWS

This section describes the basic data flows that are supported by this Transaction Package. It also describes the format of the data, the data sources, and the relevant actors involved in the successful flow of data for the Transaction Package. Any prevailing pre- and post-conditions are identified, as well as the purpose of each data post-condition associated with each Transaction Package. Any data that needs to be made available to particular actors are highlighted, as well as the conditions and processes that will use the data to achieve the stated post-conditions.

Data flows that are supported by this Transaction Package are specified in detail by IHE PCC Technical Framework sections 4.1-4.6.



## 2.2 LIST OF CONSTRUCTS

The following list of constructs and their definitions are used by the Transaction Package specification.

**Table 2.2-1 List of Constructs**

Construct Name	Technical Actor	Description	Content
No applicable constructs.			

### 2.2.1 CONSTRUCT DEPENDENCIES

The following table shows a list of constructs with their existing dependencies. Dependencies usually exist when there are some additional pre-requisites for a specific Transaction specification.

**Table 2.2.1-1 Construct Dependencies**

Construct	Depends On (Name of Component that it depends on)	Dependency Type (Pre-condition, post-condition, general)	Purpose
HITSP/TP21 - Query for Existing Data	HITSP/T16 - Consistent Time	Pre-condition	Required to manage and resolve conflicts in multiple updates
HITSP/TP21 - Query for Existing Data	HITSP/T17 - Secured Communication Channel	Pre-condition	Required to manage node authentication, and transport encryption
HITSP/TP21 - Query for Existing Data	HITSP/T15 - Collect and Communicate Security Audit Trail	Pre-condition	Required to manage audit trail of exported PHI
HITSP/TP21 - Query for Existing Data	HITSP/TP30 - Manage Consent Directives	Pre-condition	Documents authorization directive for release of the requested data, whether by patient or by regulation

### 2.2.2 ADDITIONAL CONSTRAINTS ON REQUIRED CONSTRUCTS

This section describes the constraints that further limit the constructs that are used by this Transaction Package.

**Table 2.2.2-1 Additional Constraints on Required Constructs**

Data Element	Construct	Constraint	Constraint Type (Pre-condition, post-condition, general)	Purpose (Reason for this constraint)
No applicable constraints.				

## 2.3 LIST OF STANDARDS

It is important to understand that the standards selected here are within the context of the specific Use Case requirements and do not necessarily reflect selection in other contexts. The following standards are used to implement the Transaction Package specification:



**Table 2.3-1 List of Standards**

Standard	Description
Health Level Seven (HL7) Version 3.0	The HL7 Version 3.0 Messaging Standard is an application protocol for electronic data exchange in healthcare. Version 3.0 is based on a Reference Information Model (RIM); which is used to instantiate various message formats. Value sets/code tables are contained in the standard. Visit <a href="http://www.hl7.org">www.hl7.org</a> for more information.
Integrating the Healthcare Enterprise (IHE) Patient Care Coordination (PCC) Technical Framework Volume 1, Revision 3.0 2007 - 2008	The IHE Patient Care Coordination Technical Framework (PCC TF) defines specific implementations (called Integration Profiles) of established standards to deal with integration issues that cross providers, patient problems or time. The Cross Enterprise Document Sharing of Medical Summaries (XDS-MS) Integration Profile enables sharing of health information between enterprises of a regional health network, and further describes how to map content in a CDA medical document into registry metadata. In the registry, healthcare providers publish pointers to documents stored in distributed repositories. Other healthcare providers may search and retrieve these and other documents. Visit <a href="http://www.ihe.net">www.ihe.net</a> for more information
Organization for the Advancement of Structured Information Standards (OASIS) Simple Object Access Protocol (SOAP) Version 1.1, 1.2	SOAP is a protocol specification for invoking methods on servers, services, components and objects. SOAP codifies the existing practice of using XML and HTTP as a method invocation mechanism. The SOAP specification mandates a small number of HTTP headers that facilitate firewall/proxy filtering plus an XML vocabulary that is used for representing method parameters, return values, and exceptions." {DevelopMentor} SOAP consists of three parts: an envelope that defines a framework for describing what is in a message and how to process it, a set of encoding rules for expressing instances of application-defined data types, and a convention for representing remote procedure calls and responses. Visit <a href="http://www.oasis-open.org">www.oasis-open.org</a> for more information.
World Wide Web Consortium (W3C) Web Services Description Language (WSDL) v1.1	WSDL is an XML-based language that provides a model for describing Web services. It is also an XML-based service description on how to communicate using web services. The WSDL defines services as collections of network endpoints, or ports. WSDL specification provides an XML format for documents for this purpose. Visit <a href="http://www.w3.org">www.w3.org</a> for more information



## 3.0 TECHNICAL IMPLEMENTATION

### 3.1 CONFORMANCE

This section describes the conformance criteria, which are objective statements of requirements that can be used to determine if a specific behavior, function, interface, or code set has been implemented correctly.

#### 3.1.1 CONFORMANCE CRITERIA

In order to claim conformance to this construct specification, an implementation must satisfy all the requirements and mandatory statements listed in this specification, the associated HITSP Interoperability Specification, its associated construct specifications, as well as conformance criteria from the selected base and composite standards. A conformant system must also be constrained as specified in table 2.1.1-1, and implement all of the required actors from table 2.1.2-1, within the scope, subset or implementation option that is selected from the associated Interoperability Specification.

Claims of conformance may only be made for the overall HITSP Interoperability Specification with which this construct is associated.

#### 3.1.2 CONFORMANCE SCOPING, SUBSETTING AND OPTIONS

A HITSP Interoperability Specification must be implemented in its entirety for an implementation to claim conformance to the specification. HITSP may define the permissibility for actor scoping, subsetting or implementation options by which the specification may be implemented in a limited manner. Such scoping, subsetting and options may extend to associated constructs, such as this construct. This construct must implement all requirements within the selected scope, subset or options as defined in the associated Interoperability Specification to claim conformance.



## 4.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

No additional information at this time.

RELEASED FOR IMPLEMENTATION





## 5.0 CHANGE HISTORY

The following sections provide the history of all changes made to this document since the last publication.

### 5.1 DECEMBER 5, 2007

No changes at this time.

### 5.2 DECEMBER 13, 2007

Upon approval by the HITSP Panel on December 13, 2007, this document is now Released for Implementation.

