



# NHIN Trial Implementations

## Use Case Requirements Document

**Use Case Title:** Harmonized Use Case for Consumer Empowerment  
(Registration and Medication History)

**Workgroup:** Consumer Perspective

**Version:** Workgroup Draft V1.2 04-21-2008

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### Description:

This document details the priority information exchanges identified by the Office of the National Coordinator for Health Information Technology (ONC) for the Harmonized Use Case for Consumer Empowerment (Registration and Medication History) dated March 18, 2006 and the key assumptions, workflows, triggers and requirements for the exchanges to be successfully demonstrated. Two participants are scheduled to demonstrate this use case, CareSpark and the West Virginia Health Information Network. This document provides a general approach for both participants. The actual workflows/implementation plans will be participant specific.

The priority information exchanges focus on a provider of personally controlled health record (PCHR) services requesting information from a network system and on a health care provider viewing registration summary and medication history data for a patient.

A precondition for the priority information exchanges is that a consumer is a patient of a health care provider. The exchanges will be triggered by a consumer creating his/her PCHR account. Then, the consumer will either enter his/her PCHR data for the first time or the provider of PCHR services will query a data/network system for existing data (this will be participant specific). Whether the consumer can view clinical data in his/her PCHR is controlled by the laws, regulations and policies governing the Nationwide Health Information Network (NHIN) Health Information Exchange (NHIE) that the provider of PCHR services is affiliated with (Note: The NHIE may also be the provider of the PCHR services).

A common understanding of the workgroup is that a provider of PCHR services can retrieve data from its affiliated NHIE and that a health care provider will have the ability to access an electronic tool [Electronic Health Record (EHR), Electronic Medical Record (EMR), a clinician portal, or a PCHR] to request and view a consumer's current registration summary and medication data that may be available across the NHIN. This information will include data self-reported by the consumer in a PCHR and information available from clinical sources. The electronic tool vendor will be affiliated with an NHIE and the NHIE, which is the broker of data, will send a request for data to all NHIEs participating in the exchange. The ideal state is that both the initiating and responding NHIEs will perform subject identification, check consumer permissions (subject to issue resolution process), query for documents/data, retrieve documents/data, and log the transaction in an audit file.

Priority information exchanges for Scenario 2 and 3 are detailed together in this document because the ultimate goal of the exchanges is to give a health care provider the ability to view registration summary and medication history data that is available for a consumer.



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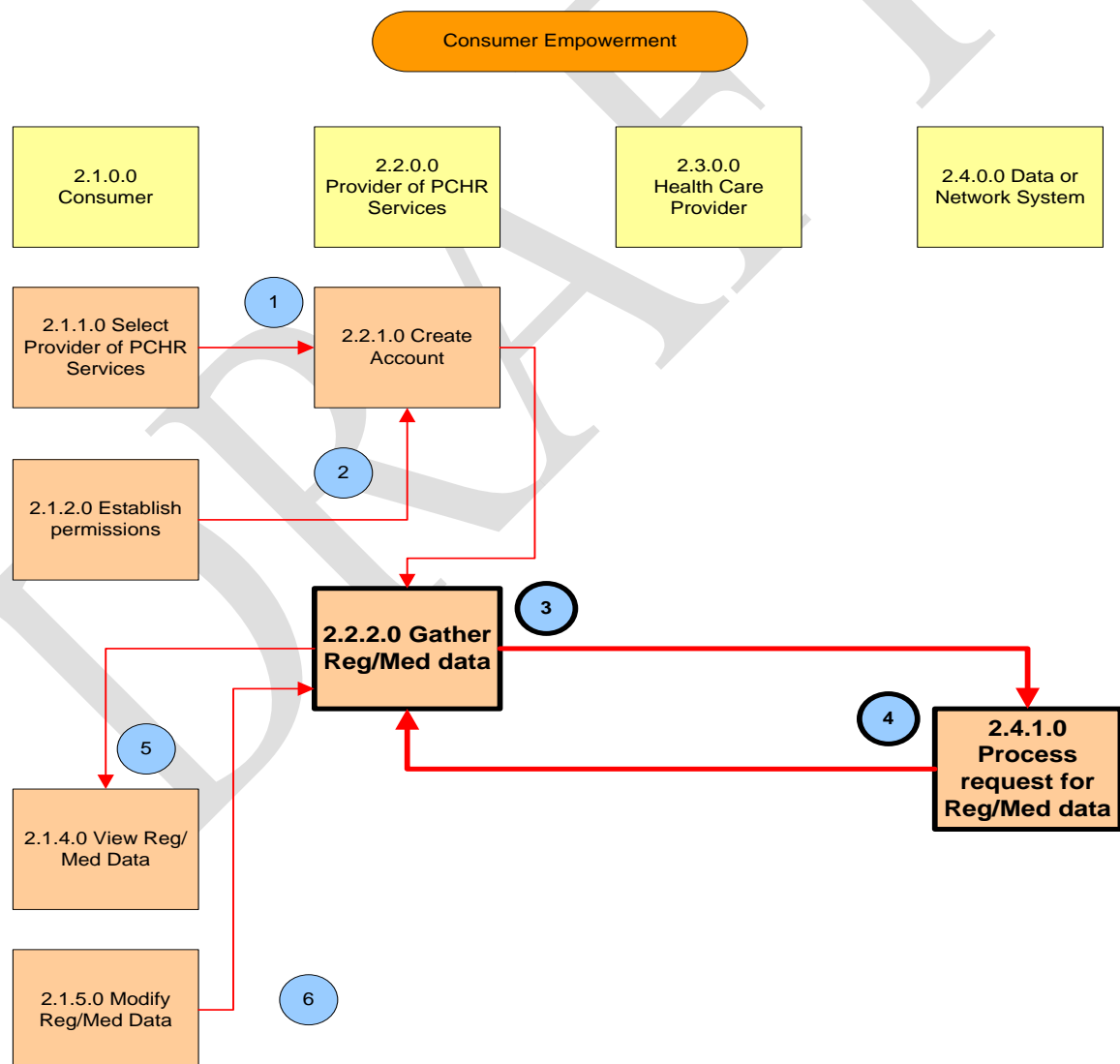
## Priority Information Exchanges:

**Note:** While the use case document uses the term PHR, we have adopted the new standard of PCHR in this document.

- **Scenario 1 Consumer creates PCHR Account which hosts registration summary and medication history**

ONC would like this scenario to focus on retrieving and storing medication history and registration information in the PCHR.

- **Information Exchange #3** Provider of PCHR services requests registration summary & medication history from data or network system.
- **Information Exchange #4** Data or network systems transmit registration summary & medication history data.

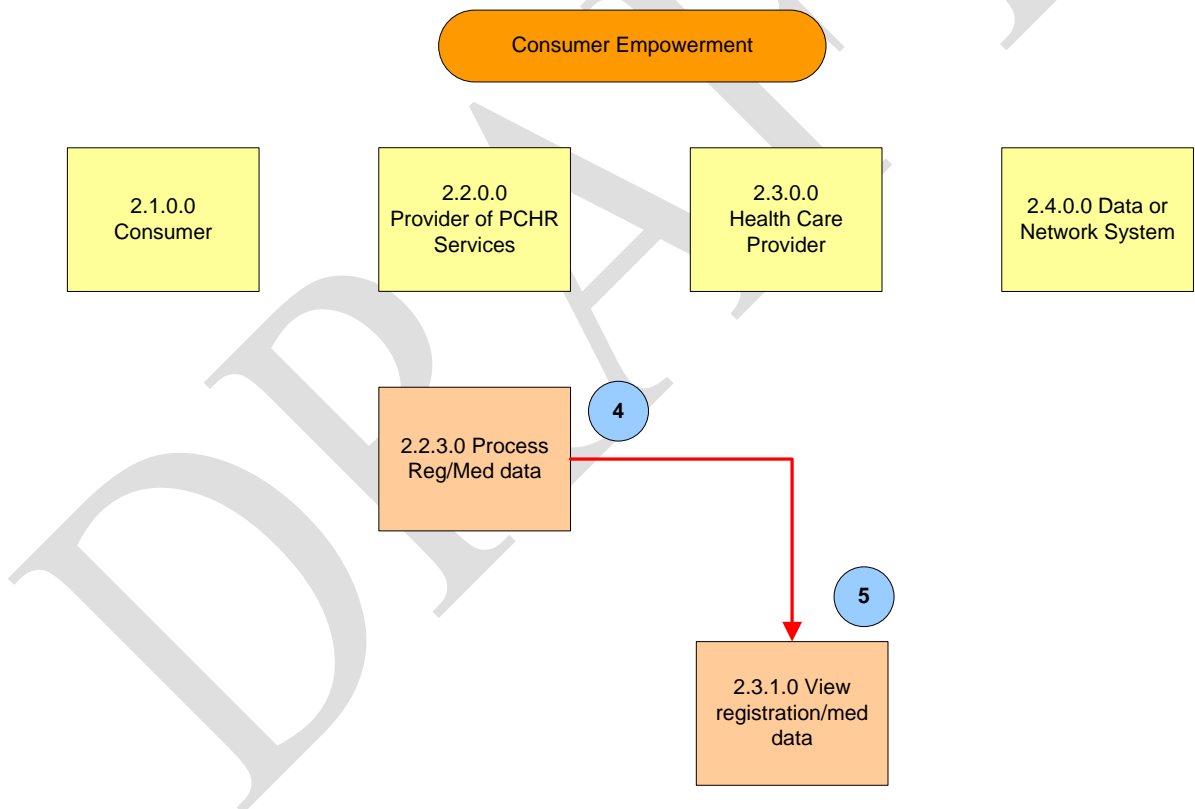




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- **Scenario 2 Consumer visits health care provider and provides registration summary information**
  - **Information Exchange #4** Provider of PCHR services transmits registration summary to health care provider.
  - **Information Exchange #5** Health care provider views registration summary.
- **Scenario 3 Authorized health care provider reviews medication history**
  - **Information Exchange #4** Provider of PCHR services transmits medication history to health care provider based on consumer's preferences and/or relevant laws regarding disclosure of information.
  - **Information Exchange #5** Health care provider views medication history.





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### Requirements:

- **A Consumer shall have the ability to**
  1. Establish a PCHR
  2. Enter registration and medication history data into his/her PCHR
  3. View registration and medication history data contained in his/her PCHR
  4. Modify self-entered data
  5. Annotate clinical data (if allowed by the rules of the affiliated NHIE)
  6. Grant or limit access to the self-entered data within his/her PCHR to others
  7. Grant or limit access to his/her clinical data to others
- **A Provider of PCHR Services shall have functionality to**
  1. Authenticate consumers (and possibly health care providers) in a secure electronic tool
  2. Capture consumers permissions for the access of their registration summary and medication history
  3. Allow consumers to self enter registration and medication data and to modify the entered data
  4. Allow consumers to annotate clinical data (if allowed by the rules of the affiliated NHIE)
  5. Interact with an affiliated NHIE to transmit and request data on a specific consumer and discover locations of consumer data
- **A Data or Network System shall have functionality to**
  1. Uniquely identify consumers
  2. Consume registration summary and medication data transmitted from a PCHR/EHR/EMR
  3. Transmit registration summary and medication data to a PCHR/EHR/EMR
  4. Capture and apply consumers permissions for the access to their registration summary, medication history and clinical data
  5. Send requests for data to, and receive data from, other NHIEs in standard formats specified by the Technical & Security Workgroup and the Core Services Workgroup
  6. Retain an audit trail of persons that accessed a consumer's data
- **A health care provider shall have the ability to request and view**
  1. A consumer's self-entered registration summary and medication history from all available sources through an electronic tool when allowed by the consumer's permissions
  2. Clinical medication history on a consumer from all available sources through an electronic tool when allowed by the consumer's permissions



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## Use Case Requirements Document

**Use Case Scenario:** Scenario 1: Consumer creates PCHR account which hosts registration summary and medication history from data or network system

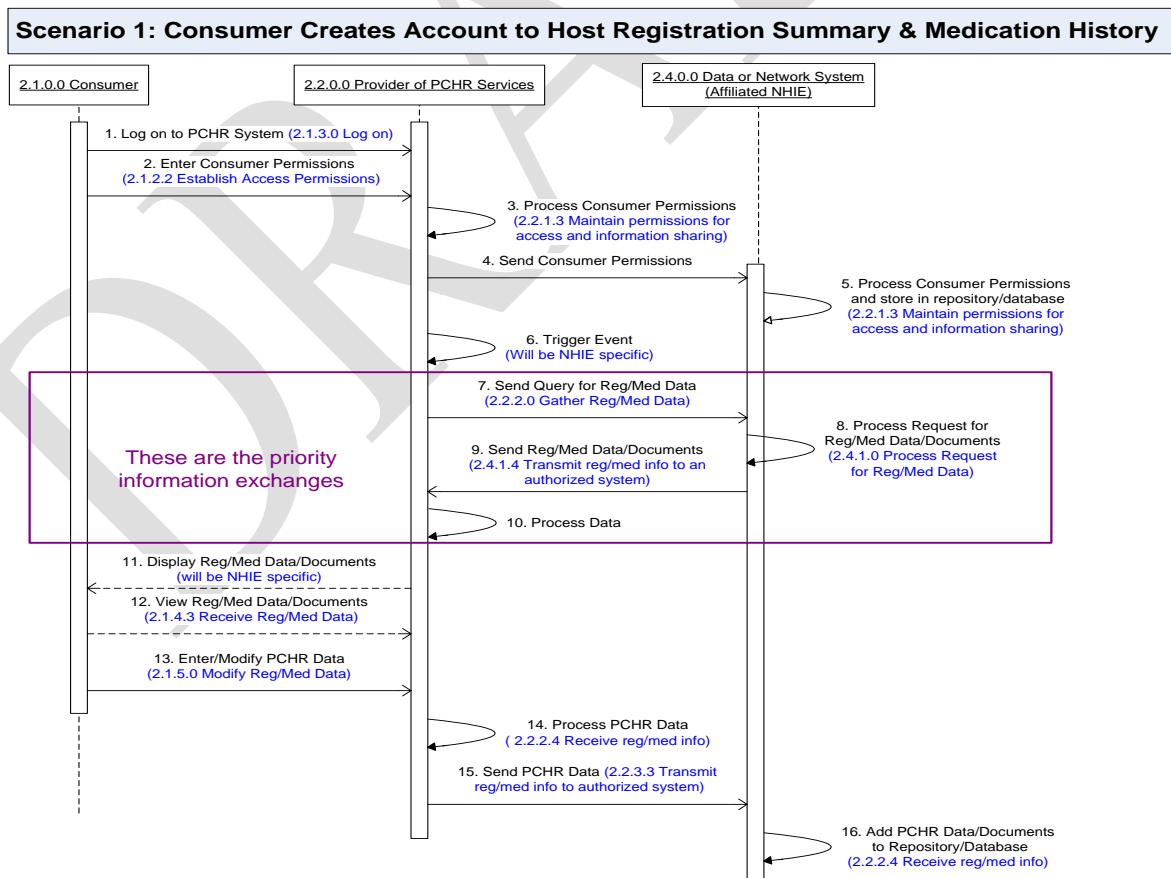
**Information Exchange:** #3 Provider of PCHR services requests registration summary & medication history from data or network system.

**Information Exchange:** #4 Data or network systems transmit registration summary & medication history data.

### 1 Information Exchange Workflow

#### 1.1 Workflow Steps and Description

The workflow shown below is a general representation of how the participants will demonstrate the priority information exchanges for this scenario which contains an intra-NHIE exchange of data. The actual workflow steps/process and preconditions/triggers for these steps can vary by participant/NHIE.





## NHIN Trial Implementations Use Case Requirements Document

Step	Workflow Description	Functional Capabilities CSC=Core Service Capability IS=Interface Specification	Actors Involved
1	Log on to PCHR system	CSC: User and Subject Identity Management Services	Consumer PCHR Services Provider
2	Enter Consumer Permissions	The consumer will enter (level of granularity TBD) his/her permissions for access to his/her self-entered and clinical data (participant/NHIE specific). The PCHR services provider will consume the data and transmit it to its affiliated NHIE which will also consume the data.  IS: Consumer permissions (TBD)	Consumer PCHR Services Provider
3	Process Consumer Permissions		PCHR Services Provider
4	Send Consumer Permissions		PCHR Services Provider Data/Network system (Affiliated NHIE)
5	Process Consumer Permissions and store in repository/database		Data/Network system (Affiliated NHIE)
6	Trigger Event		Consumer or health care provider PCHR Services Provider Data/Network system (Affiliated NHIE)
7	Send Query for Reg/Med Data	Based on a trigger event, the PCHR Services provider will query its affiliated NHIE for data on a consumer. The NHIE will respond and transmit the available data.	PCHR Services Provider
8	Process Request for Reg/Med Data		Data/Network system (Affiliated NHIE)
9	Send Reg/Med Data/Documents		Data/Network system (Affiliated NHIE) PCHR Services Provider
10	Process Data/Documents		PCHR Services Provider
11	Display Reg/Med Data/Documents	This will be participant/NHIE specific as some NHIEs may not allow the consumer to view data that is not self-entered.  This could be self-entered reg/med data, or when allowed by an NHIE, other reg/med data or clinical data.	PCHR Services Provider Consumer
12	View Reg/Med Data/Documents		Consumer
13	Enter/Modify PCHR Data	The consumer will enter registration and medication data into his/her PCHR and the PCHR services provider will consume the data and transmit it to its affiliated NHIE which will also consume the data.	Consumer PCHR Services Provider
14	Process PCHR Data		PCHR Services Provider
15	Send PCHR Data		PCHR Services Provider
16	Add PCHR Data/Documents to repository/database		Data/Network system (Affiliated NHIE)



# NHIN Trial Implementations Use Case Requirements Document

## 1.2 Use Case References (e.g. Events/Actions)

The following events and actions are described in the use case for these priority information exchanges.

Code	Description	Comments
2.2.2.0	<b>Event:</b> Gather registration and/or medication data	The collection of registration and medication data presumes the ability to locate the appropriate information. Depending on the relationship of the various perspectives, a locator service may be included in one of the perspectives or be provisioned by an entity with the ability to search across systems.
2.2.2.1	<b>Action:</b> Receive consumer request	
2.2.2.2	<b>Action:</b> Confirm consumer identity	
2.2.2.3	<b>Action:</b> Transmit request for registration/medication data to data or network system	The PCHR Vendor requests registration and medication data from Data or network systems in accordance with consumer's permissions for data access.
2.2.2.4	<b>Action:</b> Receive registration/medication data	The provider of PCHR services will receive information via secure data transmission.
2.2.2.5	<b>Action:</b> Acknowledge receipt of registration / medication data	Send acknowledgment that integrity authenticity and completeness of data are found.
2.2.2.6	<b>Action:</b> Log interaction	
2.4.1.0	<b>Event:</b> Process request for registration and/or medication data	Consumers may request that information from their health care providers be transmitted to their PCHR accounts.
2.4.1.1	<b>Action:</b> Receive and validate the query request	
2.4.1.2	<b>Action:</b> Authenticate and verify the authorization of the requestor	Establish data requestor's identify and authorization.
2.4.1.3	<b>Action:</b> Authorize release of registration and medication data	
2.4.1.4	<b>Action:</b> Transmit registration and medication data to an authorized system	The data are transmitted to the PCHR under the consumer's authority/request.
2.4.1.5	<b>Action:</b> Log interaction	There is an audit trail or access log for each entity that sends data to the PCHR.

## 1.3 Key Assumptions

- A. This scenario focuses on intra-NHIE data exchange only.
- B. This scenario assumes the developing presence of electronic systems such as PCHRs, EHRs/EMRs and other local or web-based solutions.
- C. The infrastructure defined by the Technical & Security and the Core Services Workgroups is in place and has been tested and demonstrated prior to the testing and demonstration of this scenario. These workgroups will determine whether the interface specifications are sufficient for this scenario.
- D. An established network and policy infrastructure exists to enable consistent, appropriate, and accurate information exchange across PCHRs, EHRs/EMRs and NHIEs. This includes, but is not limited to methods to:
  - Identify and authenticate users
  - Enforce data access authorization policies
  - Correctly match consumers across systems



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- E. Security and privacy policies, procedures and practices are commonly implemented to support acceptable levels of consumer privacy and security.
- F. Appropriate standards protocols; consumer identification methodology; consent; privacy and security procedures; coding, vocabulary and normalization standards have been agreed to by all relevant participants.
- G. Legal and governance issues regarding data access authorizations, data ownership, and data use are in effect.
- H. Any clinical data that may be viewable by the consumer through the PCHR is controlled by the policies of the affiliated NHIE.
- I. Data transfer between the PCHR and the NHIE can be triggered either by a consumer request or a care delivery event for that consumer depending on the rules of the NHIE.
- J. NHIEs may store and transmit data in either document form or in discrete data format (transmitted using a standard message format).
- K. Consumer permissions will include a level of granularity that will be determined through the issue resolution process.

## 2 Information Exchange Requirements

### 2.1 Triggers

- The consumer is notified that a PCHR is available for his/her use and is provided with the initial information to log on to the system for the first time.

### 2.2 Data Content Requirements

- Registration summary and medication history data requirements are defined and established between the provider of PCHR services and the affiliated NHIE. It is expected, but not required, that at a minimum the required six modules of the Summary Patient Record as defined by the Core Services Workgroup are the data that will be transmitted.

### 2.3 Other unique requirements

- None.





## NHIN Trial Implementations Use Case Requirements Document

**Use Case Scenario:** Scenario 2: Consumer visits health care provider and provides registration summary information

**Information Exchange:** #4 Provider of PCHR services transmits registration summary to health care provider.

**Information Exchange:** #5 Health care provider views registration summary.

**Use Case Scenario:** Scenario 3: Authorized health care provider reviews medication history

**Information Exchange:** #4 Provider of PCHR services transmits medication history to health care provider based on consumer's preferences and/or relevant laws regarding disclosure of information.

**Information Exchange:** #5 Health care provider views medication history.

### 1 Information Exchange Workflow

#### 1.1 Workflow Steps and Description

The workflows shown below are a general representation of how participants will demonstrate the priority information exchanges for these scenarios and contains an inter-NHIE exchange of data. The actual workflows steps/processes and the preconditions/triggers for these steps will vary by participant/NHIE.

Flow A shows the information exchange when applicable consumer permissions are in effect. Flow B shows the information exchange when the consumer has not granted access to his/her data.

The workflows are based on a consumer arriving and registering for a scheduled encounter with a health care provider. The provider then accesses an EHR/EMR or clinician portal to view registration and medication history on the consumer.

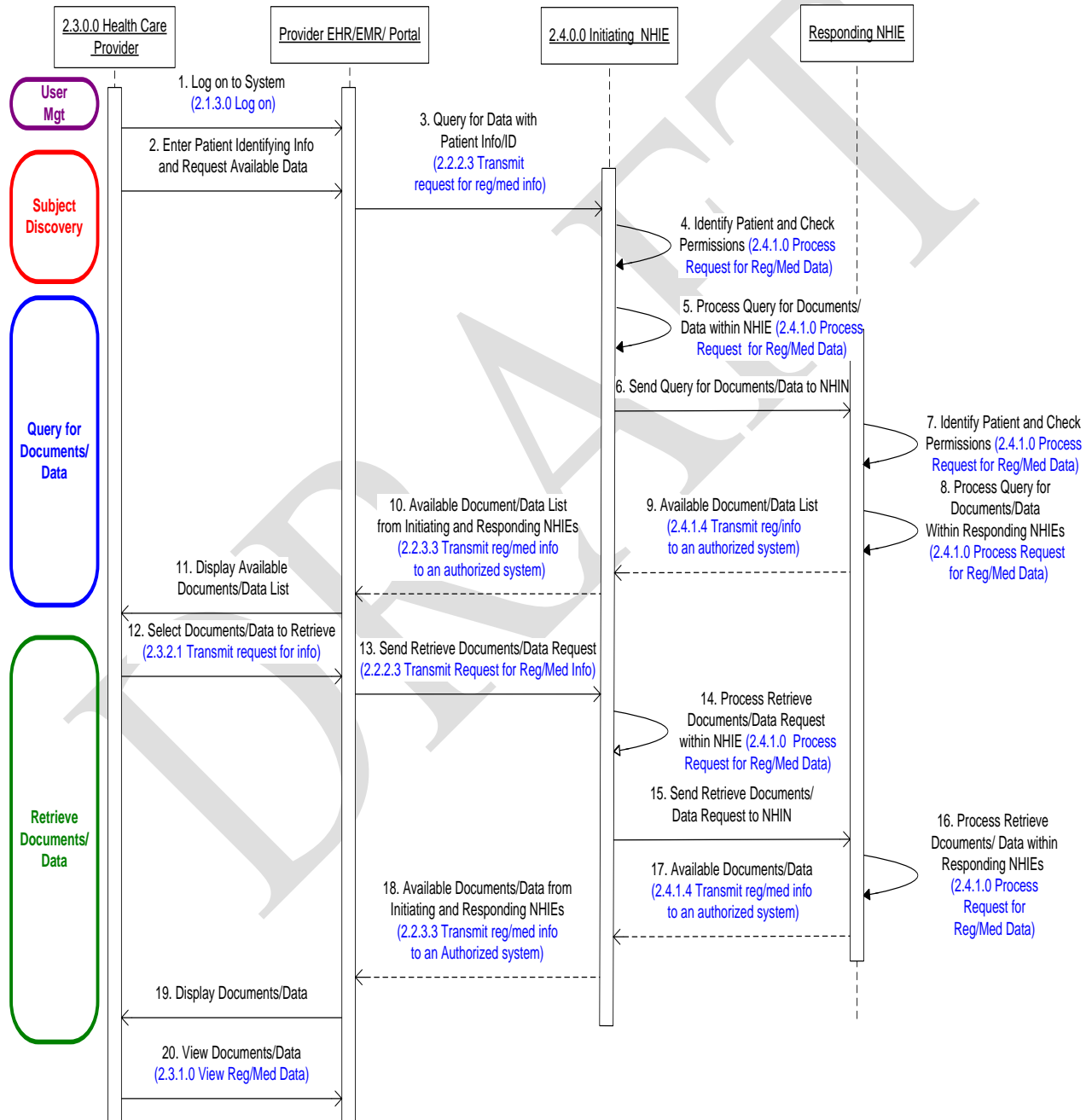


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## Use Case Requirements Document

**Scenarios 2 Consumer Visits Provider and Provides Registration Summary Information & 3 Provider Reviews Medication History**

Flow A: Consumer has set permissions to allow access to data





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Step	Workflow Description	Functional Capabilities CSC=Core Service Capability IS=Interface Specification	Actors Involved
1	Log on to System	CSC: User and Subject Identity Management Services	Health Care Provider EHR/EMR/Portal
2	Enter Patient Identifying Info and Request Available Data	CSC: Data Services: Subject-data matching capabilities	Health Care Provider EHR/EMR/Portal
3	Query for Data with Patient Info/ID	IS: Subject Discovery	EHR/EMR/Portal Initiating NHIE
4	Identify Patient and Check Permissions	The health care provider will enter information to identify the patient. The EHR/EMR/portal will query its affiliated NHIE to locate the patient. The Initiating NHIE will locate the patient within its master patient index and check consumer permissions.	Initiating NHIE
5	Process Query within Initiating NHIE	CSC: Data Services: Summary patient record exchange	Initiating NHIE
6	Send Query for Documents/Data	IS: Query for Documents	Initiating NHIE Responding NHIEs
7	Identify Patient and Check Permissions	If the consumer permission is set to allow sharing of data, the NHIE will query its own registry for documents/data.	Responding NHIEs
8	Process Query for Documents/Data within Responding NHIE		Responding NHIEs
9	Transmit Available Documents/Data List	The initiating NHIE will send a query for documents/data to the NHIN. The responding NHIEs will check for the patient within their own registries, check consumer permissions and if permission has been granted, send a list of available documents/data to the initiating NHIE. The initiating NHIE will transmit a combined list to the requestor.	Responding NHIEs Initiating NHIE
10	Transmit Combined Available Documents/Data List		Initiating NHIE EHR/EMR/Portal
11	Displays available Documents/Data list		EHR/EMR/Portal Health Care Provider
12	Select Documents/Data to retrieve	CSC: Data Services: Summary patient record exchange	Health Care Provider EHR/EMR/Portal
13	Send Retrieve Documents/Data request	IS: Retrieve Documents	EHR/EMR/Portal Initiating NHIE
14	Process Retrieve Documents/Data within Initiating NHIE	The health care provider will select documents/data to review. The NHIE will then send a	Initiating NHIE
15	Send Retrieve Documents/Data Request to NHIN		Initiating NHIE Responding NHIEs

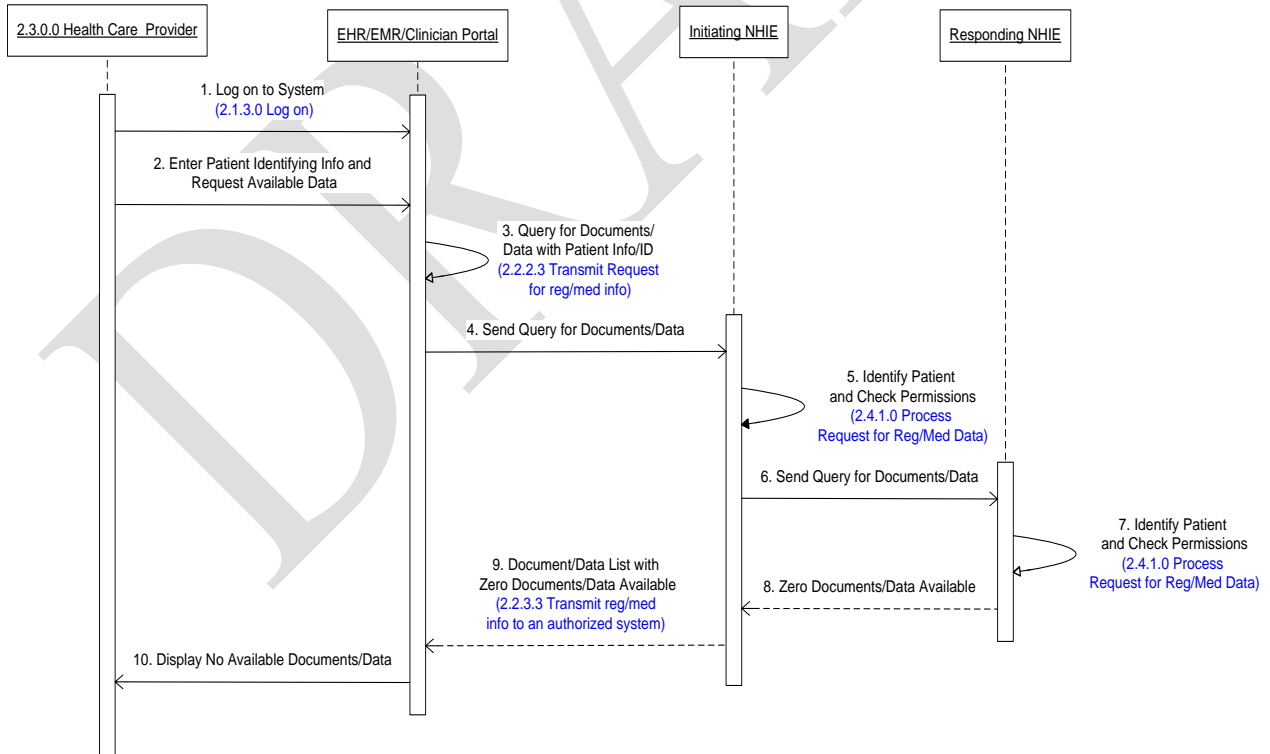


## NHIN Trial Implementations Use Case Requirements Document

Step	Workflow Description	Functional Capabilities CSC=Core Service Capability IS=Interface Specification	Actors Involved
16	Process Retrieve Documents/Data within Responding NHIE	request to retrieve documents/data to the responding NHIEs that have consented documents/data for the patient and retrieve documents/data from its own repository/database. The NHIE will then display the metadata for the consented documents/data to the clinician who can then select to view the documents/data.	Responding NHIEs
17	Transmit Available Documents/Data		Responding NHIEs Initiating NHIE
18	Transmit Combined Available Documents/Data		Initiating NHIE EHR/EMR/Portal
19	Display Documents/Data		EHR/EMR/Portal Health Care Provider
20	View Documents/Data		Health Care Provider

**Scenarios 2 Consumer Visits Provider and Provides Registration Summary Information & 3 Provider Reviews Medication History**

Flow B: Consumer has set permissions to **NOT** allow access to data





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## Use Case Requirements Document

Step	Workflow Description	Functional Capabilities CSC=Core Service Capability IS=Interface Specification	Actors Involved
1	Log on to System	CSC: User and Subject Identity Management Services	Health Care Provider EHR/EMR/Portal
2	Enter Patient Identifying Info and Request Available Data	CSC: Data Services: Subject-data matching capabilities IS: Subject Discovery	Health Care Provider EHR/EMR/Portal
3	Query for Documents/Data with Patient Info/ID	The health care provider will enter information to identify the consumer. The EHR/EMR/portal will query its affiliated NHIE to locate the consumer. The Initiating NHIE will locate the consumer within its master patient index and check consumer permissions.	EHR/EMR/Portal
4	Send Query for Documents/Data	CSC: Data Services: Summary patient record exchange	EHR/EMR/Portal Initiating NHIE
5	Identify Patient and Check Permissions	IS: Query for Documents	Initiating NHIE
6	Send Query for Documents/Data	The NHIE will query its repository/database if the consumer permission is set to not allow sharing of data, will send a query for documents/data to the NHIN. The responding NHIEs will check for the patient within their own registries, check consumer permissions and if permission has not been granted, send a no documents/data available response to the initiating NHIE. The initiating NHIE will transmit a combined no documents/data available response to the requestor.	Initiating NHIE Responding NHIEs
7	Identify Patient and Check Permissions		Responding NHIEs
8	Return Zero Documents/Data Available		Responding NHIEs Initiating NHIE
9	Return Zero Documents/Data Available		Initiating NHIE EHR/EMR/Portal
10	Display No Available Documents/ Data		EHR/EMR/Portal Health Care Provider

### 1.2 Use Case References (e.g. Events/Actions)

The following events and actions are described in the use case for these priority information exchanges. We will demonstrate all the actions shown below.

Code	Description	Comments
2.2.3.0	<b>Event: Process request for registration and/or medication data</b>	Data will be processed based on consumer's permissions for data access.
2.2.3.1	<b>Action:</b> Receive and validate the query request	
2.2.3.2	<b>Action:</b> Authenticate and verify the authorization of the requestor	Establish data requestor's identification and authorization.
2.2.3.3	<b>Action:</b> Transmit registration and medication data to an authorized system	The data are transmitted to the PCHR under the consumer's authority/request.
2.2.3.4	<b>Action:</b> Log interaction	There is an audit trail or access log for each entity that sends data to the PCHR.



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Code	Description	Comments
2.3.1.0	<b>Event: View registration and/or medication data</b>	
2.3.1.1	<b>Action:</b> Submit authentication information to PCHR	Establish health care provider's identify and authorization. The PCHR system will confirm the health care provider's rights to access the consumer's PCHR account and their data. Authentication information may be controlled by numerous rule sets. For example, access parameters could be set to allow continuous access by the health care provider, access could be token or password based, or if the PCHR is resident in a portable device in the possession of the consumer, accessing the device by a compatible system could allow access to the data.
2.3.1.2	<b>Action:</b> Receive registration and medication data	Once the system verifies the health care provider's identity and authorization, data are transmitted to the health care provider.

### 1.3 Key Assumptions

- A. Scenario 1 will be demonstrated first so the consumer has established the PCHR account and set permissions for the health care provider to access and review his/her data.
- B. These scenarios assume the developing presence of electronic systems such as EHRs/EMRs and other local or web-based solutions.
- C. The infrastructure defined by the Technical & Security and the Core Services Workgroups is in place and has been tested and demonstrated prior to the testing and demonstration of this scenario. These workgroups will determine whether the interface specifications are sufficient for these scenarios.
- D. An established network and policy infrastructure exists to enable consistent, appropriate, and accurate information exchange across PCHRs, clinician systems and NHIes. This includes, but is not limited to methods to:
  - Identify and authenticate users
  - Enforce data access authorization policies
  - Correctly match patients across systems
- E. Security and privacy policies, procedures and practices are commonly implemented to support acceptable levels of consumer privacy and security.
- F. Appropriate standards protocols; consumer identification methodology; consent; privacy and security procedures; coding, vocabulary and normalization standards have been agreed to by all relevant participants.
- G. Legal and governance issues regarding data access authorizations, data ownership, and data use are in effect.
- H. NHIes may store and transmit data in either document form or in discrete data form (transmitted using a standard message format).
- I. Consumer permissions will include a level of granularity that will be determined through the issue resolution process.



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## 2 Information Exchange Requirements

### 2.1 Triggers

- For Flow A:
  - The consumer is an existing patient of the health care provider, has granted data access permissions, and has arrived and registered for a scheduled encounter.
  - The health care provider accesses an EHR/EMR/clinician portal.
  - After a consumer has been identified and permissions verified, a query for documents/data function will be triggered within the NHIE and sent to the NHIN
  - After the health care provider selects documents/data to view a retrieve documents/data function will be triggered within the NHIE and sent to the NHIN
- For Flow B:
  - The consumer is an existing patient of the health care provider, but has not granted data access permissions, and has scheduled a visit
  - The health care provider accesses an EHR/EMR/clinician portal.

### 2.2 Data Content Requirements

- The data that will be exchanged must conform to the requirements of the Summary Patient Record as defined by the Core Services Workgroup and must at a minimum contain the six required modules.
- Adhere to the following standards as applicable:
  - HITSP ISO3
  - HITSP C32 Summary Documents Using CCD
  - HITSP T23 Patient Demographics
  - HITSP TP22 Patient ID Cross Referencing
  - HITSP TP13 Manage Sharing of Document
  - Consumer permissions TBD

### 2.3 Other unique requirements

- HITSP and IHE compliant EHR/EMR/Portal.