

OHIE Component_Name

Planning and Implementation Guide



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Template Directions

This is a template intended to aid in the writing of the OHIE component Planning and Implementation Guides. The components are different and have different impacts and needs; therefore you can and should modify the content to meet your needs.

1.1. Text Colors

Different colors of text are used as follows:

- *Red text denotes directions or content to consider when writing the guide. By the time your draft is ready for review, the red text should all be removed.*
- *Blue text denotes example text. Please remove it or update it. If you update it, change it back to black.*
- *Black text is recommended text.*

1.2. Update Component_Name and Title.

“Component_Name” is a document property tag and “Title” is the property where you put the document title. To set the properties in MSWord:

1. *Click the **File** tab.*
2. *Click **Info** or **Properties** to view the document properties.*
3. *To update “Component_Name”, hover your pointer over “Component_Name” and enter the information or type the component name in the dialog box.*
4. *To update the document title, hover over “Component_Name Planning and Implementation Guide” or type the document name in the dialog box.*
5. *Click the **File** tab again to return to your document. Any changes you made will be saved automatically.*

1.3. Update Table of Contents

After updating the document, you’ll need to update the table of contents. To update the table of contents, click on the table of contents. The words “Update Table” will appear at the top and bottom of the table. Click on it to update the table of contents.

1.4. Cover Icon

Use the OHIE icon for the component on the cover?

Introduction

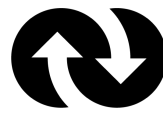
Component_Name Background

In this section, describe the business challenge or problem statement that is addressed by the component. Make sure the business value is clear. Consider noting the benefits of the component.

If there is a website where an example of the component can be demonstrated, include the link.

Purpose and Structure of the Guide

The purpose of this document, Component_Name Planning and Implementation Guide, is to provide guidance for a team or individual responsible for the end-to-end implementation of a Component_Name. The guide is intended to help teams think through the nuances and specific decisions required to implement a Component_Name. It is informed by past experiences and practices, promoted by OHIE and documented from ongoing implementations. (e.g., Rwanda) Because it is based upon implementation experiences the guide is a living document that will be updated. It is intended as a framework that can be adapted to a specific context. It is not intended to detail every aspect of running an information technology project.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
					
Analyze the Current Environment	Establish Leadership and Ownership	Document Specifications and Requirements	Implement Specifications	Create Support Plan	Post-Production Evaluation

This guide is broken into the following steps:

- Step 1: Analyze the Current Environment
- Step 2: Establish Leadership and Ownership
- Step 3: Document Specifications and Requirements
- Step 4: Implement Specifications
- Step 5: Create Support Plan
- Step 6: Post-Production Evaluation

Community Engagement

Include key ways to interact with your OHIE community. If you have specific contact, consider including their email address. Example text may include:

OpenHIE is designed to bring together community processes, broad reaching experience, and a series of re-usable technologies to give countries a framework in which they can start to address their own health information needs. Prior to planning and implementing a Component_Name, we recommend engaging with the OHIE Component_Name Community. The community is composed of technical and implementation stakeholders with experience developing and deploying client registries and master patient lists. The Component_Name Community is happy to discuss the particular details related to your local context and connect you to other relevant resources. Here are some ways to get started:

1. Join the Component_Name Group and introduce yourself. The community is open to anyone who wants to participate. You can find regularly scheduled meetings, meeting minutes and other documentation on the wiki.

Link:

2. Set up an introductory call with the community. We are here to discuss your specific context, answer questions, and walk with you through the implementation process.

Contact:

3. Review an existing OHIE reference implementation of the Component_Name.

Link:

Step 1: Analyze the Environment

In the sub-steps of this section, describe the key areas of the current environment that need to be analyzed.

Consider including the following areas for analysis:

- *Stakeholders – Identify groups that should be considered as possible stakeholders.*
- *Systems*
- *Standards*
- *Constraints – What constraints might need to be noted?*
- *Are there any component specific items that we know need to be researched as the implementation team looks at the component? For example, the CR includes information about understanding patient identifiers because that is key to their implementation.*

1.1 Identify Stakeholders

You may want to suggest the types of stakeholders that are most applicable for the component.

Potential questions to ask:

- *Who are the interested parties? Is the national health ministry interested?*
- *Why are you interested in implementing a Component_Name?*
- *Are there different/varying motivations among interested parties?*
- *Are there advocacy groups that can help?*
- *How will you know if you have succeeded?*
- *What are the challenges or barriers to successful implementation?*

1.2 Identify Systems

What systems will need to interact with your component? What systems generate data supported by your component? What systems are impacted by your component?

1.3 Identify Applicable Standards

If data standards, message standards or other standards are applicable to your component, provide guidance on identifying the standards that may be used in the current environment or may be applicable to the component. Include examples of standards that may apply.

Example: Philippines National Health Data Dictionary

Example: ISO (International Standards Organization)/IEC 5218 for Gender

Example: ISO/TS 22220:2011 Identification of Subjects of Healthcare

Example: ISO 21091:2013: Health informatics -- Directory services for healthcare providers, subjects of care and other entities.

1.5. Identify Constraints

Identifying the high-level system constraints will help implementers understand the factors that need to be addressed in order to design a system that fits the unique context. Identify known constraints such as:

- Data Capacity
- Data Quality
- Network Capacity and Reliability - Are there constraints on the network reliability or capacity? Are secure connections between organizations already established?
- Power Constraints- Are there any constraints on electricity or power? If so, what are they?
- Data Privacy Laws and Regulations– Are there any local or regional data privacy laws that apply to the patient's demographic data?
- Other healthcare software laws or regulations – Are there applicable guidelines for managing healthcare records or for validating healthcare software?

Based upon the country's unique context, there may be additional constraints that need to be documented.

1.5. Component Specific Constraints

Provide guidance on any component specific constraints that may apply.

Step 2: Establish Leadership and Ownership

In this section, describe the types of leadership and ownership that need to be established. SLG stands for stakeholder leadership group. SLG is the term that is used by several of the guides.

2.1 Establish Leadership

Example text:

Stakeholder leadership is essential for supporting the successful implementation of a Component_Name. Effective leaders should be identified and join together to form a stakeholder leadership group (SLG) for the development and implementation of a Component_Name. The group should have shared ownership of the Component_Name and be committed to the outcomes.

Once established, the SLG should be the authority under which the Component_Name operates and includes responsibilities such as:

- Defining project scope
- Vetting and prioritizing key use cases and user stories for the Component_Name
- Ensure agreement on the data specifications used in the Component_Name

SLGs should be involved throughout the implementation of a Component_Name, not just at the beginning. As new business cases arise, the group should strategically plan scale up and implementation in-line with national and international standards. The composition of the SLG should be dynamic with new members joining the group in support of new business cases.

2.2 Establish Owners and SMEs

Example text:

It is recommended that the following types of roles be filled for the Component_Name. In some cases, it may be impossible to find a single individual with the knowledge described. In these cases, it is recommended that this knowledge be developed through training or other means. In the case of the subject matter experts (SMEs), the knowledge may be spread across several individuals. As the project progresses, the level of different SME participation may vary because of their diverse knowledge and expertise.

Role	Description Examples
Content Owner	• Has knowledge of the contents of the data. • Knows applicable data privacy, security and data management regulations and practices. • Has knowledge of the data sources and consumers. • Has knowledge of applicable data standards. • Has knowledge of justifications for data access or data transfer (includes individual or interfacing system access). • Approves data sources, data access and data transfer.

	• Ensures access is removed when no longer needed. • Ensures privacy requirements are met. • Ensures there is a contingency plan in place for operating should the system be unavailable due to a disaster or unplanned outage.
Component_Name Software Custodian (Transactions and Content Management software)	• Have knowledge and understanding of good practices for developing, implementing, managing and retiring systems. • Have knowledge of software quality practices and any applicable regulations for managing electronic records. • Have knowledge of applicable data privacy, security and management regulations and practices. • Works with the Content Owner to design and implement appropriate software privacy controls.
Infrastructure Owner	• Has knowledge of system quality practices and any applicable regulations for managing electronic records. • Has knowledge of applicable data privacy, security and management regulations and practices. • Has knowledge of good practices for applicable network and hardware operation and management. • Works with the Content Owner to design and implement appropriate hardware and network privacy controls. • Work with Component_Name Software Owners and Content Owners to establish appropriate system back-up and recovery plans.
Subject Matter Experts (SMEs)	•

2.3 Define Project Scope

Example text:

An iterative project development approach is strongly recommended. When using an iterative project development process, implementation teams should designate an initial scope for a project. While the vision may be to have all patients in the country or region listed in the patient registry, this may not be practical or necessary for the first implementation of the registry.

One of the main objectives for a SLG is to determine the scope of use cases and user stories that will be supported by the CR. An important step in this process is defining the patients that will be kept in the registry. This decision should be based upon the user stories that need to be supported. For example, you may need to determine which point-of-service providers or national ID systems will interact with the Component_Name in the initial implementation. Or, you may determine that only the women of child bearing age will be included. Each country will need to set the scope based upon the HIE strategy, goals and priorities for the project.

Step 3: Document Specifications and Requirements

Identify the specifications that need to be documented. Consider user stories, data specifications, workflows, privacy and other specifications that need to be identified. Include examples where possible.

Example text:

A Component_Name should be responsive to users' needs and the local context. User stories and data specifications are two ways to describe: "What will the Component_Name achieve and How should it operate?" A primary objective of this guide is to promote and facilitate a country driven and user requirements based process. The ideal solution will be responsive to users' needs and their context. To complete Step 3 an in-country meeting of stakeholders is highly recommended and can expedite the process.

3.1 Document User Stories

Provide typical examples of user stories applicable to your component.

User Stories are a mechanism to gather user requirements and/or core requirements describing the desired system functionality. They are a short and simple description of a how a particular user needs to interact with the system. They tell who, what and why the person is interacting with the system.

Example User Story – Other Clinic Visits

A pregnant woman will enter the clinic for her first appointment. The healthcare worker will collect the patient's name and demographic information. The worker wants to see if the woman has had visits at other clinics so the worker enters in the demographic information and asks for data from other institutions. The system will determine if the patient has visited other point-of-care facilities and return the references to those visits.

Resource: [INVEST in Good Stories, and SMART Tasks](#)

Resource: [Examples of Rwanda User Stories for RHIE](#) - This is an example of user stories that were written for Rwanda. In this example, the user stories are for the broader Health Care Information Exchange and not just the CR.

3.2 Document Data Specifications

If applicable, provide guidance for documenting data standards. Example text:

A data specification document is a technical tool describing the master client list data elements or the information to be managed in the Component_Name. This is a similar concept to a data dictionary where the contents and format of data elements in the system

are documented. It is recommended that a stakeholder meeting be used along with the tools below an in-country meeting to expedite the process of documenting a data specification.

Tanzania Example: [TZ Data Specification](#) See section 2.3 where geographic zones for a building's location are outlined. This type of information may also be used to designate an individual's residence. The document also contains examples of how postal codes, phone numbers and email addresses are defined.

Rwanda Example: [RW Registry Specifications](#)

See page 10, TB_Person and page 18, TB_Address, for examples of how names and demographic information are described.

Job aids: [Facility Registry Data Specification Guide](#); [Draft WHO MFL Guide](#)

3.4 Document Data Privacy Impact and Requirements

If your component can be impacted by privacy, describe typical impacts.

Resource: [Guidelines on Protecting the Confidentiality and Security of HIV Information](#) - While aimed at HIV patient data, this resource can be used to help understand privacy, confidentiality and security concerns for patient information.

3.5 Document Workflows

List applicable workflows and links to the OHIE documentation for those workflows.

The following are the Component_Name workflows that are currently defined by the OpenHIE Component_Name Community. These workflows include the detailed standards based message protocols that are used to interact with point-of-care systems.

OHIE Component_Name Workflows:

- Register Patient Workflow
<https://wiki.ohie.org/display/documents/Register+patient+workflow>

These workflows and perhaps additional workflows may be required to support your country's user stories. Document and prioritize the required workflows that are required with each point-of-care system.

Rwanda Example: [Connecting OpenMRS to the Component Name](#)

Step 4: Implement Specifications

4.1 Determine Resources and Project Plan

Example text:

The resource plan and project plans need to address the following types of activities:

- Selecting, procuring, installing and configuring software and hardware.
- Point-of-Care systems, insurance systems and / or national registry systems that will interact with the Component_Name may need to be enhanced to communicate with the CR through the Interoperability Layer of the architecture.
- Configuration and testing with interfacing point-of-care systems, insurance systems and / or national registry systems that are within the scope of the project.
- Documentation of the technical solution and information required to support the solution.
- Testing to prove that the system operates as desired.
- Development of policies and procedures required to support the systems and business processes.

Along with the typical technical expertise required to develop and implement a technology solution, the registry requires technical knowledge of healthcare transactions standards such as IHE [PIX/PDQ](#).

4.2 Select Software

If applicable, provide information and links to software associated with the component. Use information from Step 3 to help evaluate software solutions.

4.3 Determine Hardware Needs

The software needs, the high-level system constraints and the architecture will drive hardware needs.

4.5 Software Validation and Testing

Describe testing that is applicable to the component. Consider workflow (Integration testing, performance testing and anything else that is specific to your component. Example Text:

There are many components required to validate and test software that is used to manage healthcare records. Some ministries of health like the United States FDA have specific guidance documents that need to be followed to ensure that healthcare software has been appropriately validated and tested and that electronic records requirements are being met. The purpose of this section is not to detail good software validation practices, but to *highlight* specific testing considerations for the Component_Name.

Example: [Rwanda Client Registry Implementation](#)

Step 5: Create Support Plan

Example text:

After scaling the Component_Name and initiating the core integrations, it should be expected that requirements and requests for the registry will evolve over time. For this reason, ongoing support and continued iterative support strategies should remain in place. This can be organized by the roles of the technical support and implementation teams to triage requests for data, system enhancements, integrations, operations support or general troubleshooting among users. Common types of ongoing support are described below.

5.1 Operations Support

Operations support is intended to maintain the logistics and infrastructure required for the patient registry. The content owner, infrastructure owner and software owners +++will need to support the system. This support includes: monitoring error logs, maintaining a server, ensuring security protocols, carry out backups, and software and hardware updates as needed.

5.2 Developer Support

Developer support is important to facilitate any future adaptations of the Component_Name. For instance it may be desirable to create a specialized curation, workflow, or other application that would work in coordination with the registry in a service oriented fashion. Developer support will also include the identification, documentation and resolution of any enhancement requests or bugs.

5.3 Integration Support

Ongoing support will be required to triage requests for integration, issues, and application programmer interfaces (API) enhancements to support other systems interested to provide and consume Component_Name data. New systems that want to consume an API may also require some technical assistance to create an end node in their application to facilitate integration.

5.4 Data Support

Ongoing support will also require assistance for issues related to data collection, curation, analysis and utilization. While the Component_Name is designed to fulfill user requirements there will be ongoing requirements to provide training, troubleshooting and respond to data access requests by users. Other aspects of data support include data collection, entry, permissions, bulk imports, data flows, curation, and data quality.

5.5 Help Desk Support

Help desk support may not be required initially, but as more users and organizations start using the Component_Name it may become important to identify, document, triage and direct response to types of requests from the varied types of users.

5.6 Capacity development and Training

To appropriately provide the supports mentioned above, there will need to be training to build the capacity of support personnel to enable them to perform basic administration of the Component_Name, data and quality improvements outlined in the support plan.

Step 6 Post-Production Evaluation

Example text:

Post production, it is important to capture lessons learned. One helpful exercise is to have the team make two lists. The team should document what went well and should be done that way again as well as the things that can be done better next time. This exercise is important as this process is meant to be iterative.

Once the system is running and stabilized, the process can begin again with an expanded scope. New interfaces, user stories or workflows may need to be added.

Job Aid – Analyze the Current Environment

Identify Stakeholders and Systems (Steps X.X and X.X)

Stakeholders are people, groups and organizations that have an interest, or stake in the Component_Name or the Component_Name project. Make a list of stakeholders, their organizations and motivations. It is best to include detailed names or roles where you know them. Examples of stakeholders and their motivations might include:

Stakeholders may include:

Motivations and challenges may include:

Example Stakeholder List:

Stakeholder Name and/ or Role	Organization	Motivations and Challenges	System
		•	
		•	