IT in Support of Health Insurance Systems Learning Exchange
JLN Tail Funding Concept Note - for NM and Steering Group review

Introduction

In response to interest from the JLN Country Core Teams, the following proposed activities focus on the use of data and technologies to support health financing and insurance for UHC. With the remaining resources from the Data Foundations, tail funding provided through the JLN Network Manager, and potential support from other donors (GIZ), this learning exchange will foster knowledge sharing between the JLN and the OpenHIE Health Financing Subcommunity.

This learning exchange would build on previous work completed by the Information Technology Initiative to document, develop, and share common requirements for health insurance systems. Country participants will work together to review the previously developed processes and requirements in order to add further detail. This learning exchange will partner with the OpenHIE Health Financing for UHC Subcommunity to deepen the work of both the JLN and OpenHIE. By engaging with the OpenHIE Subcommunity, these requirements can be translated into technology standards in order to strengthen the development of insurance management information systems such as OpenIMIS. This collaboration will bring together government representatives, software engineers, data scientists, and technical facilitators to create a robust network of practitioners. This work is envisioned as a foundation for future work on this topic by a JLN collaborative.

Work will focus on:
- Providing country insight and real-world experience to inform the definition and prioritization of business processes and requirements development
- Defining and prioritizing requirements in 2-3 business processes, including beneficiary enrollment
- Identifying international data and technical standards that can be leveraged (GS1, FHIR)
- Providing guidance to governments on how best to develop or adapt common requirements when scoping a health insurance information system.
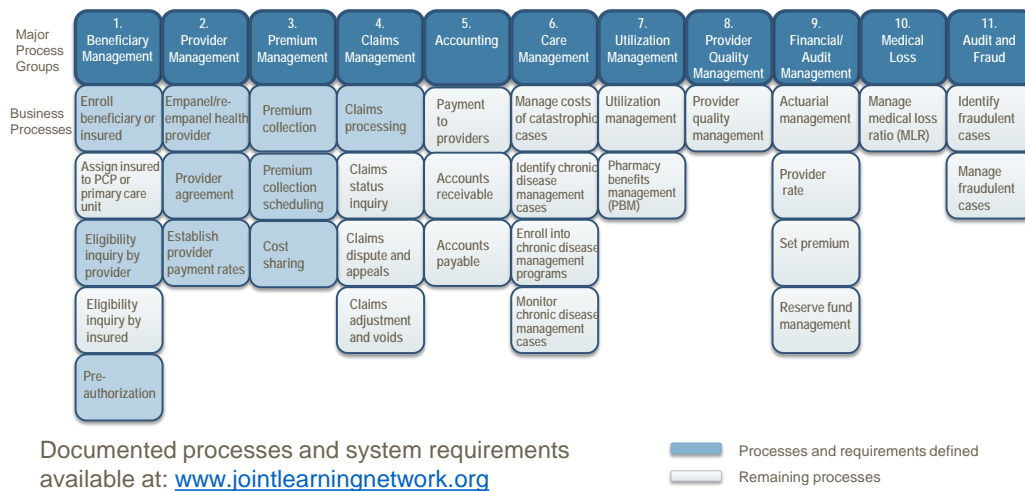
Between 2010 and 2012, the JLN's Information Technology Initiative developed common requirements for national health insurance information systems.[1,2] These common functional requirements are statements that describe what an information system needs to do to support the tasks or activities of a health insurance program. JLN members contributed to *common* requirements—the critical requirements shared across countries—to save countries time and effort, allowing them to focus limited resources on country-specific, in-depth requirements. These common requirements can also be used by software developers to inform the development of generalizable structures and features within their software, ultimately reducing the costs of customization.

The requirements for insurance information systems were developed using the collaborative requirements development methodology (CDRM). This method starts with country and global experts working together to describe the work at a high level in a specific context and then brings together countries to (a) map the work flows for how the work is done today, (b) examine how to streamline that work, and (c) identify what the information system needs to do using common language to explain it.

The JLN publications provide common requirements for ten business processes constituting the key enabling processes required to run a national insurance system. Figure 1 illustrates the business process framework and process areas documented in these documents.

Figure 1: JLN Common Insurance Business Process Framework

JLN Common Business Process Framework

Major Process Groups	1. Beneficiary Management	2. Provider Management	3. Premium Management	4. Claims Management	5. Accounting	6. Care Management	7. Utilization Management	8. Provider Quality Management	9. Financial/ Audit Management	10. Medical Loss	11. Audit and Fraud
Business Processes	Enroll beneficiary or insured	Empanel/re-empanel health provider	Premium collection	Claims processing	Payment to providers	Manage costs of catastrophic cases	Utilization management	Provider quality management	Actuarial management	Manage medical loss ratio (MLR)	Identify fraudulent cases
	Assign insured to PCP or primary care unit	Provider agreement	Premium collection scheduling	Claims status inquiry	Accounts receivable	Identify chronic disease management cases	Pharmacy benefits management (PBM)		Provider rate		Manage fraudulent cases
	Eligibility inquiry by provider	Establish provider payment rates	Cost sharing	Claims dispute and appeals	Accounts payable	Enroll into chronic disease management programs			Set premium		
	Eligibility inquiry by insured			Claims adjustment and voids		Monitor chronic disease management cases			Reserve fund management		
	Pre-authorization										

Documented processes and system requirements available at: www.jointlearningnetwork.org

Processes and requirements defined
Remaining processes

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[1] *Determining Common Requirements for National Health Insurance Information Systems.*
http://www.jointlearningnetwork.org/resources/determining-common-requirements-for-national-health-insurance-information-s

[2] *Requirements for National Health Insurance Information Systems.*
http://www.jointlearningnetwork.org/resources/requirements-for-national-health-insurance-information-systems

In 2017, the JLN launched the Data Foundations Collaborative under the IT Initiative—made up of practitioners from ten countries with a goal of sharing experiences, expertise, and challenges related to using health data to improve universal health coverage (UHC). Over the course of 2017 and 2018, the Data Foundations Collaborative conducted a number of virtual and in-person meetings and produced a set of case studies on the application of health information towards the achievement of UHC.[3] The topic of one of these case studies focused on financial management, with additional information about South Korea's health insurance information system.

OpenHIE

The Open Health Information Exchange (OpenHIE) is a global community of practice dedicated to improving the health of underserved through open and collaborative development and support of country-driven, large-scale health information sharing architectures. The OpenHIE Health Financing toward UHC Subcommunity is focused on identifying health care financing data exchange needs and working synergistically with the OpenHIE community to ensure that data exchange processes and requirements meet the needs of the health care financing communities.

Established in early 2018, the Health Financing Subcommunity serves as a collaborative workspace for sharing best practices and novel solutions to health care financing data exchange. Building on the work done by the JLN IT Initiative, members of the Subcommunity are further refining common requirements for insurance information systems and aligning them to global data exchange standards (HL7 FHIR). The resulting technical standard will be freely available for developers working on insurance information systems (for example, OpenIMIS). As a starting point, the Subcommunity has identified three business processes for refinement: beneficiary enrollment, verification, and claims submission.

openIMIS

openIMIS is an open source software for the management of information related to insurance and other public health financing and social protection mechanisms. The openIMIS system links patient, provider, and payer data to strengthen digital processing of health system data. The system is designed to manage any health financing scheme, from enrolling patients to transmitting and processing claims and calculating reimbursements. openIMIS developed from the Insurance Management Information System (IMIS), which was designed by the Swiss Tropical and Public Health Institute (Swiss TPH) and funded by the Swiss Agency for Development and Cooperation (SDC). After successful implementations in Tanzania, Cameroon, and Nepal, where GIZ supported its implementation, SDC and the German Federal Ministry for Economic Cooperation and Development (BMZ) supported the development of an open source solution based on IMIS to make it more broadly available. In 2018, the source code was published on GitHub and the openIMIS community was founded to modernize, maintain and update the software as well as broaden its use cases.

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[3] *Using Health Data to Improve Universal Health Coverage: Three Case Studies*
http://www.jointlearningnetwork.org/resources/using-health-data-case-studies

Proposed Activities

By engaging with the OpenHIE Subcommunity, these requirements can be translated into technology standards in order to strengthen the development of insurance management information systems such as OpenIMIS. This collaboration will bring together government representatives, software engineers, data scientists, and technical facilitators to create a robust network of practitioners.

Work will focus on:

- Providing country insight and real-world experience to inform the definition and prioritization of business processes and requirements development
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Learning Exchange activities will include:

- **A virtual scoping meeting** to bring together participations from the JLN community and the OpenHIE Subcommunity to lay the groundwork for an in-person workshop. Meeting Topic: Introductory meeting to define anticipated outputs, prioritize business processes for potential review, and begin outlining the scope of an in-person workshop.

- JLN Participation in OpenHIE Health Financing towards UHC Subcommunity Call(s) to provide additional opportunities for engagement between the JLN and OpenHIE participants. With JLN support, this Subcommunity will function as a community of practice to facilitate sharing information and experiences through online collaboration tools (e.g. JLN and OpenHIE Websites, wikis, resource sharing platforms, webinars or virtual meetings, and WhatsApp).

- **A three day in-person workshop** (in Nepal) to bring together participants in the learning exchange and technical facilitators to conduct a requirement review activity. This workshop would provide insight into the translation of common requirements into a software product or data exchange standard and come up with best practices governments can utilize when drafting or adopting common requirements. In addition, this workshop will include a demonstration of the openIMIS integration currently being deployed by GIZ in Nepal. This demonstration will allow participants to see a health insurance information system at work and learn more about how these systems can connect with other health information systems.

- **An update or supplement to the existing requirements document** that captures the workshop discussion output.

ADDITIONAL ACTIVITIES

This learning exchange will leverage GIZ funding and be able to carry out activities as follows:

- **Expanded Virtual Engagement** with a second virtual scoping meeting and JLN participation in OpenHIE Health Financing towards UHC Subcommunity call(s). Facilitated by OpenHIE, this scoping meeting will be used to validate and prioritize business processes for requirements development and seek additional input from country representatives.

- An **Expanded Workshop** to include additional technical participants from OpenHIE, OpenIMIS, and other experts. This would allow for more in-depth conversations guided by both country participants and technology experts.

- A new **Knowledge Product** to capture both a set of refined requirements for at least two business process as well as guidance for countries for drafting requirements or adopting common requirements. This knowledge product will help bridge the gap between government stakeholders and technologists during the development or selection of health purchaser information technology systems and solutions. This will include examples of how to evaluate potential software solutions against prioritized requirements.

Deliverable(s)

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Appendix 1: Group Memberships

Below is a list of membership in the JLN Data Foundations Collaborative and OpenHIE Health Financing for UHC Subcommunity as of February 1, 2019.

JLN DATA FOUNDATIONS COLLABORATIVE	OPENHIE HEALTH FINANCING FOR UHC SUBCOMMUNITY
PATH	Clinton Health Access Initiative
Wipro, Inc.	GIZ
Health Insurance Review & Assessment Service, Republic of Korea	Jembi
National Health Insurance Service, Republic of Korea	PATH
Federal Ministry of Health, Sudan	Regenstrief Institute
PhilHealth, Philippines	SILA/AeHIN
National Health Insurance Authority, Ghana	Swiss TPH
National Health Insurance Fund, Sudan	
Ministry of Health, Malaysia	
National Hospital Insurance Fund, Kenya	
Ministry of Health, Kenya	
National Health Insurance Scheme, Nigeria	
Ministry of Health, Indonesia	
Ministry of Health, Philippines	
Seguro Itegral de Salud, Peru	

Appendix 2: Glossary

BUSINESS PROCESS
A set of related work tasks designed to produce a specific desired programmatic (business) result. The process may involve multiple parties internal or external to the organization and frequently cuts across organizational boundaries.

COMMON REQUIREMENT
A statement that describes a requirement shared between different business processes, information system, or health system structures. Common requirements are often fundamental tasks or related to fundamental business processes shared across different contexts. For example, entering a patient name is a task shared by many software use cases, so a common requirement could be developed for this task.

REQUIREMENT
A statement that describes what an information system needs to do to support work tasks or activities of a business process. These statements are used by software developers to ensure software functionality matches the needs of a given business process.

REQUIREMENTS DEFINITION
The purpose of requirements definition is to refine our understanding of the workflow and then to define database outputs needed to support that work. Requirements definition serves to specifically define the functionality to be supported. In addition, the physical constraints are examined, and the specific scope defined.