Learning & Development Information Management System -Training Database:

Functional Requirements Document

USAID's HRH2030/Philippines: Human Resources for Health in 2030 in the Philippines

Contents

Acronyms

BLHSD	Bureau of Local Health Development Office
DOH	Department of Health
DPCB	Disease Prevention and Control Bureau
FPP	Family Planning Program
HHRDB	Health Human Resource Development Bureau
HRH	Human Resources for Health
KMITS	Knowledge Management and Information Technology Service
LDIMS	Learning and Development Information Management System
NTP	National Tuberculosis Program
PHS	Philippine Health Statistics
TIMS	Training Information Management System

Executive Summary

The Functional Requirements Document provides a general overview of the requirements of DOH-HHRDB for the Learning and Development Information Management System. The scope and limitations of the systems development are also provided to set expectations on what will be the deliverable at the end of the project. The benefits and brief description of each functionality are presented to give an idea on the design of the information system.

This document will be the foundation in the database design and development of the program logic flow.

Introduction

The Learning and Development Information Management System (LDIMS) is a framework designed by the Learning and Development Division (LDD) of the Department of Health to support the career development of health workers. The LDIMS framework involves 4 core process: Assess, Design, Deliver and Evaluate. **Assess** will evaluate the health workers' learning needs using a competency-based tool. **Design** will determine the appropriate intervention to address the learning needs based on the gap identified from the Assess phase. **Deliver** will manage and keep track of the delivery of the designed interventions and **Evaluate** will assess the effectiveness of the delivered interventions in bridging the performance and knowledge gap of the health worker.
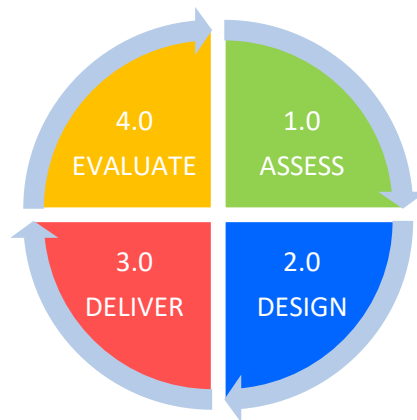

Figure 1 – LDIMS Framework

Scope and Limitations

The original scope proposed by USAID's HRH2030 project is for the implementation of a fully integrated training information system, which is an enhanced version of the Training Information Management System (TIMS) developed for the USAID-funded MindanaoHealth Project. After a series of requirements validation meetings, DOH-HHRDB made clear that the information system envisioned should be aligned with the LDIMS framework and should be able to support the full learning and development cycle. But because of the limited time and resources, it was agreed that an on-line Learning and Development Information Management System (LDIMS) application will be developed **but** will only feature the functionalities related to: (1) monitoring the delivery of the designed interventions, (2) recording and tracking the effectiveness of the interventions in addressing the competency gaps, and (3) interoperability with e-Learning platform and portal for the recording of completed online courses. While the LDIMS database and system will be designed to include the components and attributes related to competency, aside from ensuring alignment with HRH minimum data standards. An LDIMS implementation roadmap will be developed which will serve as a guide on how to expand the functionalities within LDIMS and develop the competency-related components with interface to the Competency Assessment Tool developed by Objective 1 and direct interface with e-Learning LMS platform.

Project Objectives

The primary objective of the project is to develop and implement an online LDIMS application with the following features:

- Registry of health workers both from the public and private facilities
- Registry of LD providers and affiliated training centers
- On-line registration for health workers and LD providers
- References of interventions to competencies
- Maintenance and tracking of interventions
- Maintenance and tracking of health workers' trainings and PTEs
- Post-training evaluation of interventions
- Interface with e-Learning platform to record online trainings
- Centralized repository of health workers and LD providers information
- Defined user levels and access
- Library of standard reference codes
- Interface with NTP and FPP information systems and streamline trainings offered and received

Benefits of LDIMS

- Accessible from anywhere
- Ease of data sharing and collaboration
- Minimizes data redundancy
- Ensures data consistency
- Database is scalable and relational
- User information is encrypted for security
- Ease of database and application maintenance
- Audit trail – tracking of changes made to the database
- Defined user-role-access

Assumptions

Assumptions were made and documented at the start of the project to ensure successful development and implementation of LDIMS.

1. DOH-HHRDB will be the owner of LDIMS
2. LDIMS will be hosted and managed by KMITS, *ldims.doh.gov.ph*
3. USAID's HRH2030 will design and develop the LD Management components of LDIMS and ensure that the LDIMS design is aligned with HRH minimum data standards and is interoperable with e-Learning platform and portal. DOH-HHRDB will develop the other components with the LDIMS implementation roadmap as a guide.
4. End-users of LDIMS will include HHRDB, DPCB, BLHSD, NTP, FPP and PHS Team. All end-users will participate in validating the requirements, prototypes and components
5. NTP and FPP trainings will be used for pilot testing

Systems Development Methodology

LDIMS will be developed in accordance with KMITS' Standards of Systems Development. The phases of the systems development cycle is as follows:

- Planning
- Requirements Gathering
  - Requirements Validation
- Analysis and Design
  - Prototype
  - Functional Specifications
- Development
- Testing
  - System Testing
  - User Acceptance Testing
  - Pilot Testing
- Deployment/System Turnover
- Maintenance

System Architecture

Hardware Architecture

The LDIMS application will be hosted in one of KMITS' servers and will be managed by KMITS. A secured link, that is, *https://www.ldims.doh.gov.ph*, will be provided which will be LDIMS URL.

Software Architecture

LDIMS is a web application and will be developed using [1]MySQL as the back-end tool and [2]PHP for program coding. Design and programming of the interfaces will be in accordance to KMITS' Standards of Systems Development.

System Interface

Aside from the health workers and the LD Providers, LDIMS was designed to interface with the human resource and training information systems of DOH, NTP and FPP and with the NHFR registry to populate and update the LDIMS database (*See Figure 2 – System Interface Diagram*). A brief description of each information system:

ITIS (Integrated Tuberculosis Information System)

The ITIS is the national reporting system of National Tuberculosis Program (NTP), managed and maintained by the DOH Knowledge Management Information Technology Services (KMITS). The system maintains two directories: (1) Facility Directory, which contains all the health facilities within the NTP Network that utilize ITIS for official TB data recording and reporting, and (2) Personnel Directory, which contains all health workers providing TB services within the NTP network.

https://itisdoh.pbsp.org.ph

iClinicSys (Integrated Clinic Information System)

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[1] MySQL is an open-source relational database management system, www://mysql.com
[2] PHP is an open-source programming language. www://php.net

iClinicSys is a software of the DOH designed to support the functions of a clinic (i.e. barangay health station, rural health unit, or other health care facility) that is devoted to providing primary health care services to patients. It provides a systematic way to manage patient records and generates standardized reporting requirements both at the local and national level. The system maintains records of health workers' primary health care service of patients. The system is managed and maintained by KMITS.

https://uhmis.doh.gov.ph/iClinicSys/

FP Family Planning Training Registry

FP Training Registry is a software developed to maintain all trainings related to Family Planning including the Training Providers, Training Institutions, Trainers, Trainings). The system is housed in KMITS.

NHFR (National Health Facility Registry)

The National Health Facility Registry is the official national reference directory or master list of health facilities in the Philippines. This registry provides health professionals, program planners, policy makers, and the public with a core set of valuable information on health facilities. A very important component of this registry is the assignment of a unique code for each health facility. The system is managed and maintained by KMITS.

https://nhfr.doh.gov.ph/

NDHRHIS (National Database for Human Resource for Health Information System)

National Database for Human Resource for Health Information System is a web-based system of DOH designed to facilitate the collection of data on human resources for health from hospitals and other health facilities. NDHRHIS maintains records of health facilities and personnel in each facility. The system is managed and maintained by KMITS.

LMS (e-Learning)

These are the e-Learning modules developed for NTP and FPP and maintained by DOH Academy.
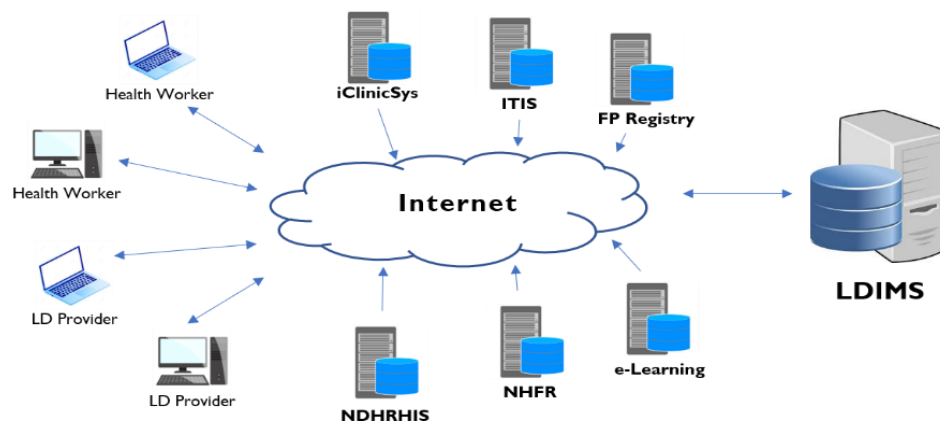

Figure 2 – System Interface Diagram

Functional Requirements

The diagram below presents the complete set of functionalities of LDIMS but only the components, represented by blue boxes , will be developed and will be functional in the 1st release of LDIMS.
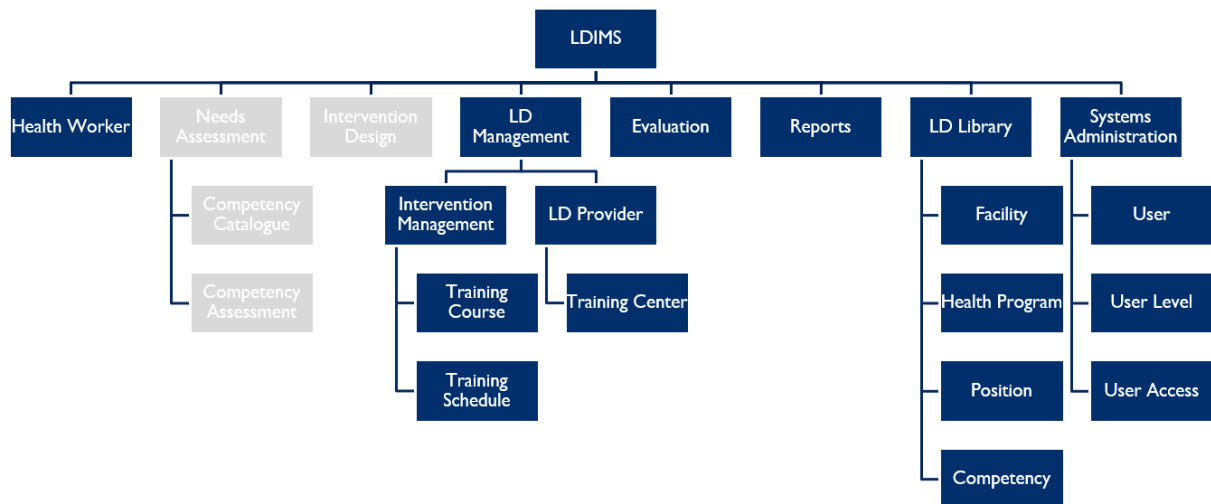

Figure 3 – System Interface Diagram

Health Worker

The Health Worker module will provide the LDIMS Administrator the facility to: (1) view and approve/decline registrations online; (2) add health workers and update registration information of registered health workers; and (3) view history of trainings and competency assessments of health workers.

The registration information captured by LDIMS will provide a snapshot on: (1) the total number of health workers disaggregated by sex, location, cadre, facility, and employment status; and (2) the total number of licensed health workers.

LD Management

The LD Management module will have two sub-modules, Intervention Management and LD Provider.

Intervention Management

This sub-module will provide the facility to manage the designed interventions. The LDIMS Administrator will have the capability to create and update Training Courses, Training Schedules and register training participants. It will be in this module where the information from the e-Learning platform will be uploaded.

For the upload of the e-Learning platform data, the online training course will have to be created in LDIMS before the upload.

LD Provider

The LD Provider will provide the LDIMS Administrator the facility to: (1) view and approve/decline registrations online; (2) add LD Providers and update the registration information; and (3) add and update accredited training centers of the LD Providers.

Evaluation

This module will keep track of the evaluations participated by the health workers. There will be 3 levels of evaluation – Level 1 will record the result of the evaluation of the training, Level 2 will record the result of the final exam and Level 3 is for the post-training evaluation. The evaluations will be linked to the health worker and training schedule attended.

Reports

The Reports module will provide the facility to print pre-defined reports.

LD Library

The LD Library will be for the maintenance of information referenced in the LDIMS modules that includes health facilities, health programs, positions and competencies. This will be accessible only by the LD Administrator.

Systems Administration

The Systems Administration module will be for the Systems Administrator to set-up users, access type and the values referenced in the codes of LDIMS. This module will only be accessible to the LDIMS Systems Administrator, which is assumed to be KMITS.

Proposed Data Flow

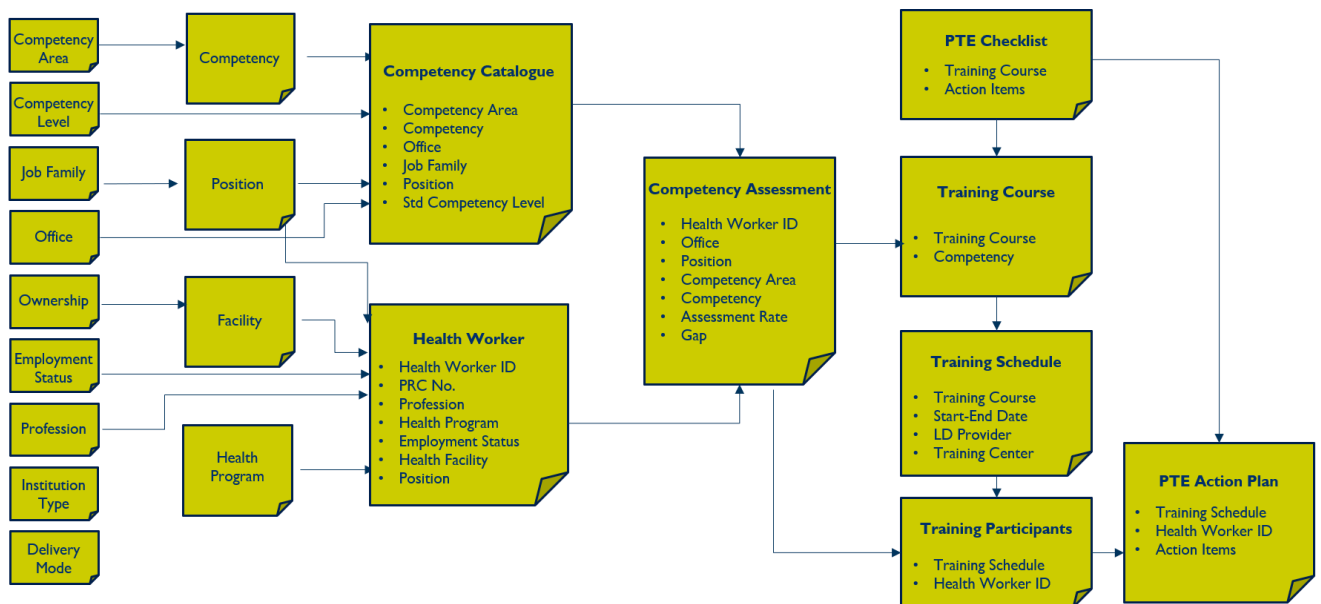The proposed data flow is the envisioned flow of information within LDIMS.

Figure 4 – LDIMS Data Flow