

DIGITAL SQUARE RFA #2020-018

Notice E0: Phase 1 Shelf Readiness

TECHNICAL APPLICATION

July 23, 2020

Prepared by: IntraHealth International

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Application Validity: 90 days

Managing the 21st Century Health Workforce: Shelf-Ready iHRIS 5 Global Digital Health Good

Two-Sentence Overview

iHRIS is the premier global digital health good for ministries of health (MOHs) to manage their health workforce. Digital Square can help promote iHRIS 5 upgrades in the 20 countries that have previous versions of iHRIS, and stimulate new countries to adopt iHRIS, with shelf-ready investments in:

- A technology demonstration that shows greater product information and documentation;
- A dashboard integration that enhances the Instant OpenHIE reference design; and
- Automated testing that verifies quality assurance of iHRIS and its components.

High-Level Budget Summary

	Work Package 1 A Highly Functional Technology Demonstration	Work Package 2 Better, Faster Data Visualization Deployment	Work Package 3 Automated Testing Scripts	Total Cost (USD)
Total Project Costs	\$26,529	\$14,003	\$20,695	\$61,227

Executive Summary

iHRIS is the premier open source human resources information system (HRIS) for ministries of health (MOHs) to manage their health workforces. It is a recognized global digital health good with deployments in more than 20 countries that manage over a million health worker records. IntraHealth International has invested in iHRIS since 2005, and we seek new Digital Square support to promote iHRIS 5.0 upgrades and stimulate new deployments with shelf readiness investments in three core work packages:

- Greater product information and documentation delivered via a highly functional technology demonstration that allows prospective users to appreciate the full functionality of iHRIS 5.0.
- Improved Kibana integration in iHRIS, and therefore improved ease of iHRIS installation and deployment, so that it becomes a transparent component of the Instant OpenHIE reference design.
- Automated integration and regression testing so that our software commits to Github are covered by verifiable quality assurance and testing, and iHRIS always functions as promised.

IntraHealth will leverage the global iHRIS Advisory Board, the greater iHRIS Community, and the OpenHIE Community to ensure these developments increase demand for iHRIS and ease of deployment in low- and middle-income countries.

Consortium Team

IntraHealth International is a global health NGO with a 40-year history in developing successful data tools and digital health applications for health workers and managers. We develop solutions that are open source, data-driven, sustainable, and collaborative. As a pioneer in the field of health workforce informatics, we're committed to using technology, information, and analytical approaches to support the people at the center of our health systems.

IntraHealth is the lead developer of iHRIS, the free open source software, that helps countries around the world track and manage their health workforce data to improve access to services. Since 2005, IntraHealth has invested in iHRIS for countries to capture and maintain high-quality information for health workforce planning, management, regulation, and training. iHRIS is an established global digital health good that is used in more than 20 countries to manage over a million health worker records at a potential cost savings of over \$275 million when compared to commercial software.

iHRIS development will be led by the following IntraHealth staff and supported by a full range of health experts, project managers, and back-up software developers:

- [Luke Duncan](#), Digital Health Assistant Director, has over 20 years of experience in software development, including leading the development of iHRIS, the flagship human resources solution for global health, and multiple data interoperability standards and reference designs to connect iHRIS, DHIS2, and OpenMRS.
- [Nobert Mijumbi](#), Regional Health Workforce Technologist, has 10 years of experience in software development, including supporting the customization and configuration of iHRIS and its nationwide deployment in both Uganda and Ethiopia.
- [Dana Acciavatti](#), Digital Health Senior Portfolio Manager, has 19 years of experience strengthening systems that support health workers, including leading project management for IntraHealth's portfolio of digital health projects and iHRIS in particular.

Background

IntraHealth has invested in iHRIS since 2005, and by 2017, the system was at version 4.3. A key to its longevity has been the ability to easily customize it. More recently, users requested support for the increasingly popular FHIR standard. In 2018, IntraHealth started investing in the development of iHRIS 5.0, a complete update of the iHRIS front-end user interface and back-end architecture, including:

- Powerful new dashboards with Kibana visualizations
- Global data interoperability with FHIR standards for health information systems
- Beautiful new interfaces with a fast and responsive mobile design.

This update, partially made possible by previous Digital Square funding, has increased interest in iHRIS to manage health records from national MOHs, and directly led to new deployments in Ethiopia and Nepal, and anticipated national deployments in Namibia and South Africa:

- Ethiopia: Nationwide deployment of iHRIS by the Ethiopia MOH that will see iHRIS tracking health staff at the woerda level.
- Nepal: Deployment of iHRIS at the Ministry of Health & Population of Nepal (MoHP) to track qualified health staff and their deployments by pulling data directly from the 5 Nepal professional councils into one iHRIS system at a central level.
- Namibia: An anticipated deployment of iHRIS nationwide to manage health staff at the facility level.
- South Africa: A potential deployment of iHRIS by the Department of Health (DoH) to serve as a health worker registry (HWR) for all public health workers, pulling in records from multiple systems.

Digital Health Technologies

iHRIS is free open source software, and a recognized digital health global good, that helps countries around the world track and manage their health workforce data to improve access to services. Countries use it to capture and maintain high-quality information for health workforce planning, management, regulation, and training.

iHRIS is built on a flexible framework that allows MOHs, professional councils, and health service delivery organizations to adapt applications for a wide variety of uses. Developed in collaboration with national stakeholders beginning in 2005, with support from USAID, iHRIS is used in more than 20 countries to

manage over a million health worker records at a potential cost savings of over \$275 million when compared to commercial software.

We offer open access to iHRIS by publishing the software, source code, and other resources at www.ihris.org and by supporting a global community of software developers and information technologists with an online forum and interactive discussions and training sessions. The community raises and resolves technical issues on its own; contributes code to iHRIS; provides tools, guidance, and case studies for the iHRIS Implementation Toolkit; and translates iHRIS applications into other languages.

iHRIS 5.0 is based on the popular and easy-to-use FHIR interoperability standard for health information systems. FHIR allows iHRIS to be connected to existing dashboard platforms, such as DHIS2, PowerBI, Tableau, for integrated real-time reporting. iHRIS 5.0 uses Elasticsearch and Kibana to visualize real-time iHRIS data in a powerful and flexible new dynamic dashboard with advanced analysis and visualizations that can be customized per role and per user.

iHRIS 5.0 also conforms to a variety of international standards for data exchange to ensure that data that might otherwise be siloed are accessible to all parts of a health system. We worked with an international standards organization, Integrating the Healthcare Enterprise, to develop a new global standard for exchanging health worker information. In addition, IntraHealth has collaborated in the Open Health Information Exchange (OpenHIE) initiative, including leading the development of a health worker registry that enables countries to link the various systems (including iHRIS) in their health information architecture.

Use Cases and User Stories

Below are three use cases, with further information provided in Table 1 to summarize the business value-add that is proposed.

Use Case 1: Demo Custom Data Import and Dashboards

An MOH Health Workforce Informatics Officer is planning an implementation of iHRIS. They need to access the demonstration platform at <https://v5-demo.ihris.org/>, import realistic data, and create reports and workforce analytics on training, qualifications, and performance. They will be able to upload realistic sample data, perform bulk imports, and export reporting and dashboard templates for use in their deployments. The implementation process will be more predictable and full-featured.

Use Case 2: Data Visualization Integration

An HR Information Systems Manager must roll-out a large production deployment of iHRIS within a functional HIE. The process involves training users, demonstrating capabilities, and creating a configuration that can be completed on local servers and networks. They are able to use tested, flexible configuration options for deployment on local servers to fit their needs, including test, development, and production environments. They may choose to deploy on Kubernetes clusters.

Use Case 3: Automated Testing Scripts

A Software Developer must integrate a mission-critical system such as payroll with iHRIS. They must be confident they are using a standards-based, interoperable platform that is well-tested. iHRIS has fully open source code and a permissive license, technical documentation, and worked examples for comprehensive customization. The foundation is FHIR and the mCSD profile. They are able to visualize real-time iHRIS data in flexible and dynamic dashboards once linked to their system using Elasticsearch and Kibana with limited customization.

Table 1: Overview of User Stories and Features

Functional User Roles (As a...)	Responsibilities (I need to...)	Existing Features	Proposed Features
MOH Health Workforce	MoH staff need to access the iHRIS system demonstration	Demonstration site.	Realistic sample data, bulk imports.

Informatics Officer	using realistic sample data to create reports and workforce analytics on training, qualifications, and performance.	Basic sample data for one fictitious country.	Visualize real-time iHRIS data in flexible and dynamic dashboards. Export reporting and dashboard templates for use in other deployments.
HR Information Systems Manager	Demonstrate capability, train users, and create a configuration to deploy to production a HIE and iHRIS.	Basic Instant OpenHIE support. Installation on Linux, and containerization and docker-compose scripts with Docker.	Testable, flexible options for deployment on local servers. Adopt configuration-ready templates for Kubernetes.
Software Developer	Must integrate a mission-critical system like payroll to iHRIS. Be confident they are using a tested, standards-based, interoperable platform that is well-tested.	Open source code, documentation. Open standards are the foundation: FHIR and the mCSD profile.	Add security tests for dependencies, E2E test coverage.

Objectives and Activities

Through the Digital Square E0 opportunity, we seek to invest in three work packages that will increase the level of maturity across the global goods maturity model, and therefore increase the shelf-readiness of iHRIS 5.0 software.

Work Package 1: A Highly Functional Technology Demonstration

Problem: Currently, the live demonstration of iHRIS technology at <https://v5-demo.ihris.org/> is still a nascent deployment. It lacks detailed workflows, sample data, and the ability of MOH staff to run scripted configurations and data sets to understand base use case functionality. The limited functionality results in a sub-optimal user experience that is hindering ministry adoption of iHRIS 5.0, which would bring with it much more functionality than previous iHRIS versions.

Objective: We seek to correct this with greater product information and documentation delivered via a highly functional technology demonstration that allows prospective users to run scripted configurations and data sets to see the full capacity and functionality of iHRIS 5.0 and spur its adoption by LMIC governments.

This includes:

- **Activity 1.1 Detailed Workflows:** Creating the ability of users to move through standard human resources workflows like hiring, assigning, transferring, and retiring health care workers using formal step-by-step processes modeled on processes from select countries.
- **Activity 1.2 Sample Data:** Populating iHRIS with realistic yet fake data to accurately simulate iHRIS functionality and reports without compromising personal data from actual health workers.
- **Activity 1.3 Data Import:** Allowing users to bulk import their own data into iHRIS for testing, where that data is only visible to that user and is automatically deleted on their departure.
- **Activity 1.4 Custom Reports:** Allowing users to create custom reports in the demo to explore either fake data or their custom data in ways that are specific to users' needs.

We will monitor our progress through testing by the iHRIS Advisory Council and evaluate our success with pre- and post-project technology demonstration system reviews from the greater iHRIS Community and the OHIE Community.

Work Package 2: Better, Faster Data Visualization Deployment

Problem: When we were developing iHRIS 5.0, we chose the Elasticsearch and Kibana open source applications to provide cutting-edge search and data visualization functionality. This has proven to be a wise choice for delivering industry-leading visual analysis for any FHIR-compliant data source connected to iHRIS. However, Kibana brings certain software compatibility complexities that can create frustrating errors in certain situations.

Objective: We seek to improve Kibana's integration in iHRIS, and therefore iHRIS' installation and deployment ease, so that it becomes a transparent and error-free tool for all users.

- 2.1. **Activity 2.1 Adding Kibana visualization in Instant OpenHIE for the health workforce:** Kibana was not included in the Instant OpenHIE workstream — it was not a component of iHRIS when that work package was conceptualized — and now needs to be added so that Instant OpenHIE will have a fully-functional iHRIS component. The data and workflows for iHRIS will also be included in Instant OpenHIE.

We will monitor our progress through feedback from the OpenHIE Interlinked Registry community that is participating in Instant OpenHIE development.

Work Package 3: Automated Testing Scripts

Problem: Many global digital health goods suffer from a lack of automated testing of software code. New software code is rarely tested before it's added to larger systems and those systems are rarely tested in consistent ways that can identify errors before they become major issues.

Objective: We seek to invest in end-to-end documented testing strategy and testing framework so that commits to Github are covered by testing and can be verified before they are added to the core iHRIS software and show that core iHRIS software has quality assurance and testing, and always functions as promised.

1. **Activity 3.1 Implement Testing:** Develop written testing strategy and testing framework with automated end-to-end testing scripts using Travis, CircleCI or GitHub Actions on the core iHRIS software
2. **Activity 3.2 Verify Coverage:** Add visual cues on Github to show the current testing status of core code.

We will use the automated testing tool reports and the related Github visual cues to monitor our progress and allow for public evaluation of our success.

Community Feedback

On a bi-monthly basis we will engage with the Advisory Council who will provide high-level perspectives from different types of stakeholder organizations to guide software development and community engagement actions. On a monthly basis, we will interact with the Global Support Community to ensure that our approach satisfies our stakeholders in government, private sector, and civil society.

Next, we will engage with the OpenHIE community through regular meetings of the Architecture & Standards, Devops, those working on Instant OpenHIE, and including our leadership of the Health Worker Registry community. Our interactions will include presentations, demos, and direct feedback solicitation.

Schedule

The following is a high-level work plan.

Activity	Team Location Month	Month					
		1	2	3	4	5	6
Activity 1.1 Detailed Workflows	IntraHealth (USA, Uganda)	X	X				
Activity 1.2 Sample Data	IntraHealth (USA, Uganda)	X	X	X			
Activity 1.3 Data Import	IntraHealth (USA, Uganda)		X	X			
Activity 1.4 Custom Reports	IntraHealth (USA, Uganda)		X	X			
Activity 2.1 Adding Kibana visualization	IntraHealth (USA, Uganda)			X	X		
Activity 3.1 Implement Testing	IntraHealth (USA, Uganda)				X	X	X
Activity 3.2 Verify Coverage	IntraHealth (USA, Uganda)				X	X	X

Deliverables

Through the Digital Square E0 opportunity, we will deliver on three work packages that will increase the shelf-readiness of iHRIS 5.0 software.

Package	Deliverables	Months
1	Highly functional technology demonstration experience that includes: <ul style="list-style-type: none"> 1.1. Detailed workflows of standard human resources work flows 1.2. Sample data populating iHRIS with realistic yet fake data 1.3. Data import ability for users to bulk import their own data into iHRIS for testing 1.4. Custom reports in the demo to explore either fake data or users' custom data 	1-3
2	Improved Kibana integration in iHRIS by: <ul style="list-style-type: none"> 2.1. Adding Kibana visualization in Instant OpenHIE for the health workforce 	3-4
3	Automated testing to verify iHRIS software components with: <ul style="list-style-type: none"> 3.1. Automated end-to-end testing testing scripts on the core iHRIS software 3.2. Visual cues on Github to show the current testing status of core code 	4-6

Global Good Maturity Model Assessment

Linked below is a completed Global Good Maturity Model Self-Assessment.



Assessment link

<https://docs.google.com/spreadsheets/d/1lar2DR1zWZqHrsZED4UQTdcpu7ilgcrAj1msTI6E4so/edit?usp=sharing>

Luke Duncan

Digital Health Assistant Director

SUMMARY OF RELEVANT EXPERIENCE

Luke Duncan has more than 20 years of professional experience in developing software by using open source technology and programming languages such as JavaScript/Node.JS, PHP, Java, Perl, PL/SQL, and JSP. He is an expert in Oracle, My SQL, PostgreSQL, and Informix databases as well as XML, XSL, HTML5, and CSS. He is a member of the Integrating the Health Enterprise (IHE) Information Technology Infrastructure (ITI) committee and has authored profiles using HL7's Fast Healthcare Interoperability Resources (FHIR). He has also worked with Vue.JS, AngularJS, React, Elasticsearch, Kibana, Python, Go, Ruby, and MongoDB. Over the past twelve years, Mr. Duncan led the design and development of the iHRIS suite of software, including its implementation in Uganda, Rwanda, and Tanzania. He also provided technical support to country developers working with iHRIS in customizing the system and maintained public access to all source codes on launchpad.net. Prior to joining IntraHealth, Mr. Duncan was a systems programmer at Infosystems Technology Inc. where he worked with systems and applications administrators to develop and maintain tools to monitor their systems. He also developed and maintained the company's control center website and led the development of tools to help track infected systems.

INTERNATIONAL EXPERIENCE Botswana, Democratic Republic of the Congo, Ethiopia, Ghana, Guatemala, India, Kenya, Namibia, Nigeria, Pakistan, Rwanda, Senegal, Swaziland, Tanzania/Zanzibar, Uganda

PROFESSIONAL EXPERIENCE

Assistant Director, Digital Health, IntraHealth International

May 2017 - Present

Chapel Hill, North Carolina

Manages a team of developers to support iHRIS and other software products. Works with Integrating the Health Enterprise (IHE) on international standards supporting our work: mCSD, CSD, and mACM. Designs and develops the iHRIS software using open source technologies, including iHRIS Manage, iHRIS Qualify, iHRIS Train, and iHRIS Plan. Interacts with iHRIS users and department representatives to ensure product development meets stated functional requirements, system design, standards, and data integrity. Builds web-driven software using Node.JS, MongoDB, PHP, MySQL, and Apache. Supports in country developers working with the iHRIS suite of software with customizations and maintenance. Maintains public access to all source code on launchpad.net or GitHub.

Senior Systems Developer, IntraHealth International

January 2006 – May 2017

Chapel Hill, North Carolina

Designed and developed the iHRIS software using open source technologies including iHRIS Manage, iHRIS Qualify, and iHRIS Plan. Interacted with iHRIS users and department representatives to ensure product development meets stated functional requirements, system

design, standards, and data integrity. Implemented and installed HRIS software in Uganda, Rwanda, and Tanzania. Built web-driven software using PHP, MySQL, and Apache. Managed software contributions from a team of developers based on feature requests from technical leaders and in country requests. Supported in country developers working with the iHRIS suite of software with customizations and maintenance. Maintained public access to all source code on launchpad.net.

Systems Programmer, Infosystems Technology Inc.,

2001 –2005

Chapel Hill, North Carolina

Maintained and developed the Control Center website and tools: <http://control-center.unc.edu/>, Cujo, and Service Monitor. Worked with systems and applications administrators to develop and maintain tools to monitor their systems, recognize recurring problems in the monitoring infrastructure, and initiate corrective action. Worked with departmental representatives to resolve, implement, and sign-off approved user requests. Worked with Control Center administrators to build tools for monitoring the campus network and systems and maintain documentation of Control Center policies and procedures. Worked with other groups on campus such as OASIS, Telecom, and the IT Response Center to develop and maintain custom tools.

Chief Technologist, Catalogue.com

1997 –2000

Chapel Hill, North Carolina

Developed and maintained e-commerce and dynamic web sites using Perl, ASP, PHP, and Server-Side JavaScript with an Informix database back end. Developed and maintained administrative web applications to manage dynamic web sites. Assisted with system administration duties. Managed team of developers working with Java and JSP. Identified potential threats and vulnerabilities, assessed the risks of these to the organization, and implemented appropriate corrective or preventative action.

Lead Programmer, Ventana Communications Group

1994 –1997

Research Triangle Park, North Carolina

Provided the underlying system platform programming support on which applications are developed and deployed. Developed and maintained website for informational purposes and an online sales catalogue. Managed rewrite of e-commerce site using Netscape Enterprise server and Server-Side JavaScript. Investigated, designed, and implemented new features for the Oracle database server environment, develop OM Policies and other monitoring components, and assist monitoring specialists in the application support areas in doing the same. Responsible for system administration and backups of Solaris servers and applications. Converted published books to HTML for reading from CD and having online updates.

SELECT PUBLICATIONS

Abdoulaye Diedhiou, Kate E Gilroy, Carie Muntifering Cox, Luke Duncan, Djimadoum Koumtingue, Sara Pacqué-Margolis, Alfredo Fort, Dykki Settle and Rebecca Bailey. Successful mLearning Pilot in Senegal: Delivering Family Planning Refresher Training Using Interactive Voice Response and SMS, *Global Health: Science and Practice*, 2015

- Duncan L. Official Netscape Server-Side JavaScript for Database Applications, Ventana Communications Group, 1997.
- Duncan L, Alan Wyke. The Perl 5 Programmer's Reference, Ventana Communications Group, 1997.
- Duncan L, Sean Michaels. Official Netscape Technologies Developer's Guide: All Platforms Ventana Communications Group, 1997.
- Duncan L, Sean Michaels. Official Netscape ONE Book: Create Integrated, Platform-Independent Web Applications. Ventana Communications Group, 1997.
- Duncan L, Gareth Branwyn, Sean Carton, Tom Lichy, Shannon Turlington, et al. Internet Roadside Attractions: Sites, Sounds, and Scenes along the Information Superhighway. Ventana Communications Group, 1995.

Nobert Mijumbi

Regional Health Workforce Technologist

SUMMARY OF RELEVANT EXPERIENCE

Nobert Mijumbi is an accomplished Ugandan technologist with 9 years of experience in the design, development and implementation of various software applications and web systems in a variety of languages including, but not limited to, PHP, Java, JavaScript, and Node.js. He also has a thorough knowledge of database administration in MySQL, PostgreSQL and MongoDB. Mr. Mijumbi has supported and led software projects across East and Southern Africa. In addition to developing and supporting core modules for the Integrated Human Resources Information Systems (iHRIS) software, he is experienced in coding, customizing and managing a range of open source software including OpenInfoMan, RapidPro, DHIS2 and bespoke software for different organizations. He has also provided mentorship and formal training to increase in-country capacity to manage and customized systems.

EDUCATION **Bachelor of Science**, Computer Science, Makerere University, Kampala, Uganda, 2010

INTERNATIONAL EXPERIENCE Botswana, Kenya, Namibia, Tanzania, Tajikistan

PROFESSIONAL EXPERIENCE

Regional Health Workforce Technologist, IntraHealth International

September 2016 - Present Kampala, Uganda

Develops new modules and customizes implementations for suite of Integrated Human Resources Information Systems (iHRIS) software products. Increases in-country capacity to maintain and customize systems through mentorship and formal training. Supports and leads projects in Uganda, Kenya, Tanzania, Namibia, and Botswana under multiple programs. Trains and mentors local developers and implementers in multiple countries in customizing and managing different software, including iHRIS, OpenInfoMan, RapidPro, and DHIS2.

Informatics Developer, IntraHealth International

September 2014 – September 2016 Kampala, Uganda

Led in-country information systems development, customization, installation, and server administration for the USAID-funded Strengthening Human Resources for Health Project. Supported software applications and systems including iHRIS, OpenInfoMan, and DHIS2. Managed the training of university interns.

HRIS Developer, IntraHealth International

July 2011 – September 2014 Kampala, Uganda

Spearheaded customization of iHRIS in Uganda on behalf of the USAID-funded Uganda Capacity Program, including collecting new user requirements and customizing them to the iHRIS Manage and iHRIS Qualify packages. Customized iHRIS to manage different in-service and

pre-service training programs for Ugandan Ministry of Health and Ministry of Education and Sports. Developed iHRIS Train module alongside IntraHealth's senior software developer for the USAID-funded CapacityPlus Project, which is used in many countries. Supported the development of the Computer-Aided Shortlisting System to increase speed and efficiency in shortlisting and hiring health workers, used country-wide to hire almost 5,000 new health workers from a pool of 35,000 applicants in just two months.

Consultant Programmer, IntraHealth International

September 2010 – April 2011 Kampala, Uganda

Supported the development of the open source iHRIS Retain package—a web-based tool for costing workforce retention interventions based on WHO recommendations—using the Linux, Apache, MySQL, PHP (LAMP) architecture on behalf of the USAID-funded CapacityPlus Project.

Industrial Trainee, Better Data Limited

June 2009 – August 2009 Kampala, Uganda

Maintained student registration system, mail system, online classified ads system, online job application system, and online shopping system. Honed skills in HTML.

Dana Acciavatti

Senior Portfolio Manager, Digital Health

SUMMARY OF RELEVANT EXPERIENCE

Dana Acciavatti has 18 years of experience strengthening systems that support health workers globally and currently manages IntraHealth's portfolio of digital health activities and provides leadership across the Digital Health team. Ms. Acciavatti played a strategic role in the development of the iHRIS Foundation, and she leads community engagement efforts to ensure user input into the future development of the software and to support the growth of the global iHRIS community. She has guided country implementations of iHRIS at national and district levels and managed the core development of other digital health products such as the Facility Match solution, a facility reconciliation tool. She led the project team implementing a digital registry of community health workers in Uganda, resulting in the first comprehensive view of the community health workforce and services they are providing in that country. Ms. Acciavatti brings a unique combination of technical expertise and superior project management skills and provides strong leadership in program design, contract management, implementation, and reporting for digital health interventions.

EDUCATION	Bachelor of Arts , Women's Studies, Communications, University of North Carolina, Chapel Hill, NC, USA, 2000
INTERNATIONAL EXPERIENCE	Barbados, Dominican Republic, Ethiopia, Ghana, Kenya, Malawi, Nigeria, Peru, Rwanda, South Africa, Switzerland, Tanzania, Uganda

PROFESSIONAL EXPERIENCE

Senior Portfolio Manager, Digital Health, IntraHealth International

November 2015 – Present *Chapel Hill, NC, USA*

Responsible for managing IntraHealth's portfolio of digital health projects and activities. Provides leadership and guidance to the digital health team, including strategic growth and business development. Implemented a digital registry for community health workers in Uganda for workforce planning, management, and decision-making. Developed the iHRIS Foundation to manage continued growth of the global iHRIS community and open-source software suite. Establishes and maintains project plans, budgets, and tracking systems.

Program Manager, CapacityPlus, IntraHealth International

September 2009 – November 2015 *Chapel Hill, NC, USA*

Senior member of the CapacityPlus program management team responsible for overall project operations and assigned field support programs. Managed and provided technical oversight to Human Resources for Health (HRH) programs globally and at the country level. Provided portfolio management support to Informatics Team. Independently led OVC funded field activities in Malawi and Nigeria (budgets of \$900,000 and \$1,538,231) focused on building the capacity of the social service workforce, including HRIS strengthening. Conducted a situational analysis of training programs for para-social workers in Nigeria, Tanzania, and Ethiopia.

Coordinated a mapping of the child protection systems in six states in Nigeria. Served on the Project Leadership Team, engaging in high level problem solving and strategic direction. Managed project start-up and close-out, including opening and closing field offices.

Program Manager, The Capacity Project, IntraHealth International

December 2007 – September 2009 Chapel Hill, NC, USA

Provided management oversight for the global, \$250 million USAID Capacity Project activities, including monitoring staffing plans, budgets, and timelines to achieve project results.

Responsible for the project's five-year \$26.6 million core funded portfolio across more than 25 countries and eight partner organizations. As a member of the Project Leadership Team, provided input and guidance in problem-solving, strategies for responding to the donor, and budget decisions. Supervised 5 operations staff and ensured deliverables were met and that individual components were on track. Ensured IntraHealth compliance with USAID deliverables and planned expenditures.

Program Officer, IntraHealth International

December 2005 – December 2007 Chapel Hill, NC, USA

Developed and monitored program budgets. Trained staff in programmatic, organizational, and donor financial requirements and monitored program activities for compliance. Managed procurement and developed and monitored sub awards. Organized and oversaw management of large domestic and international conferences. Coordinated logistics for large-scale project meetings and events. Supervised staff and developed project management and operations systems and processes.

Program Associate, IntraHealth International

October 2004 – December 2005 Chapel Hill, NC, USA

Developed and revised budgets for Capacity Project technical activities, coordinated budgets from multiple partners, monitored and tracked expenditures, and advised on spending. Supervised project operations staff. Managed subcontracts and subgrants and ensured compliance with organizational and USAID policies and procedures. Coordinated logistics for large scale project events, staff meetings, and international workshops. Prepared, edited, and disseminated project reports and documents, including subcontracts, subagreements, purchase orders, and memoranda of understanding. Assisted with project start-up activities, including setting up management systems and templates. Assisted leadership team with information collection, data entry and analysis, and follow up.

Office Manager, IntraHealth International

June 2001 – October 2004 Chapel Hill, NC, USA

Developed operating procedures and systems for office services unit, supervised staff.

PAST PERFORMANCE INFORMATION

1. Award Number: 202410468, Support for Capacity Building to Manage Nepal Health Workforce Registry and HR MIS using iHRIS
2. Agency or Entity Providing the Funding: WHO
3. Description of the Program: IntraHealth International conducted a WHO-funded contract in Nepal to build the functionality of an existing iHRIS implementation in Nepal for use by five health professional councils, ensuring interoperability among systems, and included integration of WHO's National Health Workforce Accounts indicators into iHRIS. IntraHealth first conducted a review of the HR information systems in use by the professional councils and outlined functional system specifications, interoperability needs, and NHWA indicators and user needs. Based on identified needs, IntraHealth then worked with local developers through in-country co-creation workshops to customize iHRIS as a fully functioning central health worker registry that links and contains data from the five health professional councils into a synchronized data repository. The effort customized the iHRIS open source software and standards-based interoperability technologies to align it with global best practice for data synchronization and delivery of information for NHWA indicators. IntraHealth also provided necessary training to ensure local capacity for ongoing system support and maintenance.
4. Period of Performance: October 22 – December 31, 2019
5. Dollar Value: \$44,300
6. Type of Award: Contract
7. Contact Information, Including Name, Job Title, and Contact Information Paban Ghimire, National Professional Officer, WHO Nepal, pghimire@who.int

1. Award Number: AID-617-LA-14-00001, Strengthening Human Resources for Health
2. Agency or Entity Providing the Funding: USAID
<p>3. Description of the Program: IntraHealth led the USAID-funded Strengthening Human Resources for Health (SHRH) Activity in Uganda to strengthen the capacities of ministries, local governments, health professional councils (HPCs), private not-for-profit facilities (PNFPs), and health training institutions (HTIs) to better plan and manage the health workforce. This included an emphasis on health information systems and data use, which built on our Uganda Capacity Program’s (2009-14) work to develop and implement an HRIS and health worker registry initially with the MOH, which today contains data on some 50,000 health workers in 134 districts. IntraHealth helped the Ugandan MOH and four health professional councils create this system within a suite of open-source solutions as part of a transition within their HR records from paper-based systems to computerized databases. The MOH has taken ownership of iHRIS under SHRH and is using its data to make informed decisions regarding staffing. By August 2017, management of iHRIS was transitioned to local leaders in 112 districts and 33 national level entities.</p> <p>To further encourage a data use culture at the facility level, IntraHealth developed a biometrics time and attendance tracking module in iHRIS rolled it out in 112 districts, which allows health workers to plan facility-level duty rosters, link them to biometric attendance monitoring, and confirm with the MOH that health workers should receive their monthly salary. Health worker usage of iHRIS dramatically increased once salary was proactively connected to development of duty rosters and effective time keeping. The increased, accurate data allowed district health managers to analyze health worker attendance and hold those with unexcused absences accountable, reducing waste and increasing both productivity and budget available for salaries and other expenses. Unapproved absences dropped from 50% in 2015 to 11.9% in 2017 across 4,500 pilot facilities and there was a statistically significant correlation to increased health outcomes in the same clinics. In another example, the Allied Health Professional Council uses iHRIS to track which of their more than 40,000 registered professionals are current with annual license fees. Their use of iHRIS generates over 1 billion Ugandan shillings per year in dues for the Council. SHRH also builds on previous efforts under the Uganda Capacity Program to support the MOH to use the health worker registry in concert with WHO’s Workload Indicators of Staffing Need (WISN) assessment method to better understand its health workforce numbers and distribution. The Government of Uganda used the data gained to identify staffing gaps and allocated \$20 million to recruit 7,200 new health workers in high-volume sites.</p>
4. Period of Performance: September 2014 to December 2019
5. Dollar Value: \$26, 419, 084
6. Type of Award: Cooperative agreement
<p>7. Contact Information, Including Name, Job Title, and Contact Information Garoma Kena, AOR, U.S. Mission Compound-South Wing, Plot 1577 Ggaba Road, PO Box 7856, Kampala Uganda; Tel: +256 414 306 001; Email: gkena@usaid.gov;</p>