

RHEA PROJECT RWANDA

Health Informatics Standards Infrastructure for Rwanda: Health Care Facility Registry Health Care Professional Registry

Version 1.7



Revisions

Data	Version	Distribution
Oct 3, 2010	1.0	Project Team and MOH Rwanda
Oct 12, 2010	1.1	Project Team and MOH Rwanda
May 30, 2011	1.2	Project Team and MOH Rwanda - final version for MOH approval
July 3, 2011	1.3	Project Team and MOH Rwanda – revision with all comments
July 12, 2011	1.4	Project Team and MOIH Rwanda – second revision will all the comments incorporated
July 13,2011	1.5	Final version for comments before the pilot
July 18,2011	1.6	Final version for comments before the pilot
Aug 16,2011	1.7	Adjustments to the final version to reconcile with the client registry

Summary

1	Introduction	4
2	Objectives	4
3	Methods	4
3.1	Reference Standards.....	4
4	Requirements for the Health Facilities Registry and HC Professional Registry ...	5
4.1	Health Facilities Registry Requirements	5
4.2	Health Care Professional Registry Requirements.....	9
5	Workflow for updating the Rwanda facility and HC professional registry.....	9
5.1	Health Care Professionals Registry (Identification of individual provider).....	10
5.1.1	Data requirements for the HC professional registry.....	10
5.1.2	Use cases for the HC professional registry	16
5.1.3	Interoperability Requirements	16
5.2	Health Facilities Registry (HFR)	16
5.2.1	Health Facilities Registry Data Requirements – (TB_HEALTH_FACILITY).....	17
5.2.2	Interoperability Requirements	22
6	References.....	23
7	Annex 1 – HC Facility and HC Professional Registry Forms (mandatory fields are marked with an *).....	24
8	Annex 2. Rwanda Enterprise architecture framework: Occupation and Education codes for Provider registry.....	32
8.1	Education level	34
9	Annex 3 . Health care facility database – current structure	35
10	Annex 4 - WHO Recommendations for Health Information Systems for Human Resources for Health.....	36

1 Introduction

This document is the second deliverable of the standards infrastructure of the Rwanda Health Enterprise Architecture (RHEA). The provider registry consists of two registries: the HC facility and the HC professional registries.

The unique identification of HC providers (professionals and organizations) is necessary and allows for the identification of where a patient receives care, and of the person who delivers it.

2 Objectives

This document presents the business requirements of Rwanda Provider Registry, the second building block of the Rwanda eHealth Architecture. This is also a deliverable for the RHEA project

3 Methods

The first step was to assess the current Rwanda facility registry revising the data collected and the standards currently in use.

Facility registry - the MOH of Rwanda already has a HC facility registry. The list of all HC facilities in the country is available at the MOH home page [here](#), with unique identifications, called the FOSA number. This document proposes an extension on the current HC facility registry as well as a new registry that will contain all the HC professionals in the country.

HC professional registry - the MOH Ubudehe database was identified as the initial source of data for the HC professional database, since this database has almost 90% of the Rwanda population uniquely identified either with the NID or with another unique number. The paper forms filled at the HC facility inform the NID of each HC professional. This will be used to query the client registry and obtain/update the demographic information. Please refer to the Rwanda Client Registry document.

In parallel, a revision of standards and international recommendations on how to build national registries of HC professionals and providers was also made.

Finally, adaptations for the Rwanda context were proposed.

3.1 Reference Standards

The following reference documents and standards apply to the Rwanda Provider Registry:

- ISO TS 22220 Identification of Subjects of Care – provides the data structures to represent and identify clients of the health system [1]
- ISO TS 27527 Provider Identification – provides the data structures to represent and identify HC facilities and HC professionals [2]
- Report of the First Meeting of the Health Workforce Information Reference Group (HIRG), WHO, Geneva 2010 [3]
- Healthcare workers classification – WHO [4]
- International Standard Classification of Occupations. International Labour Organization [5]

4 Requirements for the Health Facilities Registry and HC Professional Registry

4.1 Health Facilities Registry Requirements

- R#1 – Each facility is identified by a unique national sequential number of 5 digits followed by two control digits (MOD 11)
- R#2 – All facilities currently part of the Access database of the MOH should be imported to the facility registry. The FOSA number is the actual unique number. The control digit has to be calculated and added to the unique number after the initial import;
- R#3 – After the initial load, new facilities will have their unique number automatically generated by the system
- R#4 – Inaugurated dates and planned opening date are fields that should accept partial dates in month/year or only year
- R#5 - Inaugurated dates must be lower or equal the current date
- R#6 – Opening date must be greater than current date
- R#7 – The system will automatically calculate the population of the HC facility catchment area by adding the population of the respective geographical area selected. The tables with the population for each village will be stored in the system by database script. In addition to that, the tables with the hierarchical geographical structure from provinces, district, sector, cell and villages with their names and codes will also be stored directly in the database by script. Based on the villages population the system will add and store the population for the respective cells, sector, district and provinces.
- R#8 – According to its type, each HC facility has a catchment area. The data-entry from must first ask for health posts, then health centers, then district hospitals, then provincial hospitals and finally national referral hospitals. For the pilot the catchment area will be defined as follows:
- For health centers and or Health posts the system should first present a list of sectors to be selected. For each sector selected the system should show the list of villages from the sector, allowing for the selection of one or more villages. The field HC_CATCHMENT_AREA_LEVEL should be = “4” meaning “villages” and this should automatically appear in the data-entry form. The field HC_CATCHMENT_AREA_POPULATION should be the sum of all selected villages population. On the table TB_HC_FACILITY_CATCHMENT_AREA the field HC_CATCHMENT_AREA_CODES should contain the codes of the villages selected.
 - For district hospitals the system should first present a list of districts to be selected. For each district selected the system should show all health centers from the district, allowing for the selection of one or more health centers. The field HC_CATCHMENT_AREA_LEVEL should be = “3” meaning “district” and this should automatically appear in the data-entry form. The field HC_CATCHMENT_AREA_POPULATION should be the sum of all catchment area population of the health centers selected. On the table TB_HC_FACILITY_CATCHMENT_AREA the field HC_CATCHMENT_AREA_CODES should contain the codes of the districts selected.
 - For Provincial Hospitals the system should present the list of provinces for selection. The field HC_CATCHMENT_AREA_LEVEL should be = “2” meaning “provincial” and this should automatically appear in the data-

entry form. The field HC_CATCHMENT_AREA_POPULATION should be the sum of all selected provinces population and should appear automatically in the data-entry form. On the table TB_HC_FACILITY_CATCHMENT_AREA the field HC_CATCHMENT_AREA_CODES should contain the codes of the provinces selected.

- For National Referral Hospital the system will assume the total population of Rwanda meaning the sum of all provinces population. The field HC_CATCHMENT_AREA_LEVEL should be = "1" meaning national and this should automatically appear in the data-entry form. The field HC_CATCHMENT_AREA_POPULATION should be the sum of all provinces population and should appear automatically in the data-entry form. On the table TB_HC_FACILITY_CATCHMENT_AREA the field HC_CATCHMENT_AREA_CODES should contain the codes of all provinces in Rwanda.

R#7 – the maintenance of the HC facility registry is done only at the central level directly at the HC facility registry application, based on the information on the paper forms received from the HC facilities across the country. The MOH must establish a minimum frequency for this registry to be updated (trimester? semester? Or whenever a new facility is created). In addition to that, it will be necessary to define the staff who will be responsible for the data entry and quality control of the registry

R#8 – Services provided by the facility should be represented in a hierarchical structure as shown on page 13. Each service has its own classifications/category as the table shows. The category and respective services are:

Category of services		Type of Service Provided	
Code	Description	Code	Classifications
01	Health Promotion and Prevention		
		0101	Ante-natal consultation
		0102	Behavior Change Communication/Health Education
		0103	Community mobilization
		0104	Family Planning
		0105	Post Natal Consultation
		0106	Growth Monitoring/Nutrition Surveillance
		0107	Vaccination
		0108	Psychosocial support

		0109	General Health Promotion Activities
02	Diagnostic Services	0201	Laboratory
		0202	Voluntary Counseling and Testing
		0203	Laboratory
03	Clinical Services	0301	Primary Outpatient Curative Consultation (CPC)
		0302	Hospitalization
		0303	Emergency care
		0304	Dentistry
		0305	General Ophthalmology
		0306	Integrated Management of Childhood Illness
		0307	Management of gender violence
		0308	Mental Health Services
		0309	Physical therapy
		0310	Nutritional Rehabilitation
		0311	Cardiovascular care and treatment
		0312	TB care and treatment
		0313	Care and treatment for persons living with HIV/AIDS
		0314	Diabetes care and treatment
		0315	Other Non Communicable disease (NCD) care and treatment
		0316	Management of dystocic pregnancies
		0317	Post-abortion care
		0318	Deliveries - high risk
		0319	Deliveries – normal

		0320	Newborn care
04	Surgical Services		
		0401	Major surgical interventions
		0402	Minor surgical interventions
05	Organ transplants and Blood transfusions		
		0501	Blood bank
		0502	Organ transplants
06	Pharmacy		
		0601	Pharmacy
07	Prosthetics and Medical devices		
		0701	Prosthetics
		0702	Other medical devices
08	Complementary actions to promote health		
		0801	Hygiene and environmental health
		0802	Medico-Legal documentation
		0803	Pre-marital Consultation
		0804	Vector and Zoonosis control
		0805	Epidemiological Surveillance and Response

R#9 – Each HC facility may have one or more implementing partner organizations, as follows:

6. Implementing Partners Organizations	
Code	Partner Organizations
10	MSH
1	CAAC
11	Non-affilie
5	GF

8	MAP
7	IHI/HCSP
3	EGPAF
9	ICAP/CU
4	FHI
2	CRS
12	PIH/CF
6	GTZ
13	DREW

4.2 Health Care Professional Registry Requirements

R#1 - All HC professionals must have either an NID number or the Health Number.

R#2 – If the HC professional does not have the NID or the Health Number, it will be necessary the client registry will create the unique health number. This new ID should be printed (label or cardboard) and sent to the HC professional at the HC facility where he/she works. (This could be sent even by an e-mail to HC facility manager).

R#3 – All HC professionals responsible for encounters that will be sent to the SHR must be registered in the client/HC professional registry, otherwise the message with the clinical content will be stored in a temporary area. This will generate an event that will dispatch a message to the MOH data manager that will call the HC facility and ask the data necessary to register this HC professional. Only after that the message with the clinical content will be stored in the SHR

R#4 - Anyone accessing the SHR, must be a registered HC professional in the MOH HC professional registry with permission to query and or maintain the SHR.

5 Workflow for updating the Rwanda facility and HC professional registry

The proposed workflow for the Rwanda facility registry is described below.

- **Initial load of the HC facility database** - the actual health care access database that has all HC facilities in Rwanda. This is an Access Database that currently has all the facilities in Rwanda. Structure is detailed in Annex 3. Note that although the director name is part of the current database there is no NID. Maybe the facility registry could import the name without the NID and wait for the next update that will come from the paper form to include the NID. Another alternative would be that the central data manager would make a search in the client registry looking for that person in order to get his/her NID to update the HC facility registry.
- **Including a new HC professional** - when including a new HC professional it will always be necessary to query the client registry to check if that person is already included or not. In

case of any discrepancy we will consider the paper form the most updated information for all demographic data, except the NID number. In cases of mismatch of the NID number this requires a manual intervention and call to the facility to confirm the NID number. If it is confirmed that the client registry is wrong this should be manually informed to the MOH person responsible for the client registry to sort this out. If the HC professional is not on the client registry it will be necessary to first include he/she in the client registry before entering the HC professional data.

- Information from the facility and providers registry will be manually informed in the respective Facility and HC Professional Forms (Annex 1).
- These forms will be sent to all HC facilities in Rwanda, public and private.
- Each facility will fill on the HC facility form and as many HC professional forms as the number of HC professionals currently working in the facility. For the first iteration only the HC professionals involved in the use cases of maternal and child health will be in the registry. All those who do HC delivery and /or enter data or query the system must be registered in the HC professional registry, otherwise they will not have access to the SHR.
- POC applications, such as OpenMRS will be able to query the HC facility and HC professional registries through web services exchanging HI7 v2 messages (to be defined).

5.1 Health Care Professionals Registry (Identification of individual provider)

The Health Care Professionals Registry will encompass all the health workers in Rwanda. It is a specialization of the Client Registry with additional information specific to the health worker. The classification of health workers adopted follows the WHO recommendation mapping occupation categories into five broad groupings: health professionals, health associate professionals, personal care workers in health services, health management and support personnel, and other health service providers not elsewhere classified. The incorporation of all these categories in the national HRH database should be an incremental and interactive process, as described below. The full implementation of all the functionalities for managing, allocating, monitoring and evaluating HRH is out of the scope of the registry but this should be the national database that the country HRH system will use, update and maintain. Therefore, there will be no duplications of databases for HRH. The full functionalities of the country HRH system will be described later in a separate document also part of the Rwanda eHealth Architecture.

5.1.1 Data requirements for the HC professional registry

Element	Description	Length/ TYPE	Status (R = required and O =Optional)	Behavior
TB_PERSON (From the client registry)				
NID_NUMBER	Rwanda NID	16	R	This is the national unique identifier number (NID) as provided by the national NID database..
DOCUMENTS_NID_NUMBER_FK	Link to the table documents with the NID details		R	
MOH_NUMBER	Unique health number	16	R	One these two (NID or Health number must be informed).

DOCUMENTS_MOH_NUMBER_FK	Link to the table documents that describe the MOH identifier details	R		
MUTUAL_HEALTH_INSURANCE_NUMBER	Mutual health insurance number		O	
DOCUMENTS_MUTUAL_NUMBER_FK	Link to the table documents that describe the Mutual Health Insurance details		O	
DOCUMENTS_RAMANUMBER_FK	Link to the table documents with the Rama Health Insurance details			
SOCIAL_SECURITY_NUMBER	Client Social security number			
DOCUMENTS_SOCIAL_SECURITY_FK	Link to the table documents with the Social Security details			
LAST_NAME	Last Name of the client	30	R	
OTHER_NAMES	Other names of the client	50	R	
FATHER_NAME	Full name of the father	80	R	
MOTHER_NAME	Full name of the mother	80	R	
DATE_OF_BIRTH	Date of birth	8	R	
ESTIMATED_AGE	Estimated age of the client	Integer	R	
TEMPORAL_UNITS_FOR_ESTIMATED_AGE_FK	Link to the temporal units for estimated age, based on the calculation made (from the patient-banner standard)	1	R	For the HC professional registry those are the domains from the TB_TEMPORAL_UNITS_AGE that may apply: 6= " < 18 years, display year and month => 17y 6m 7= " >= 18 years, display years => 18y"

MARITAL_STATUS_FK	Link to the specific code at TB_MARITAL_STATUS	1	R	TB_MARITAL_STATUS 1= single 2 =married 3 = widow/widower 4 = divorced 5 = cohabitation
GENDER_FK	Link to the specific code at TB_GENDER	1	R	TB_GENDER 1= male 2= female 3=undetermined (this field does not appear on the paper form but is part of the domain at the client registry) 4=not known
COUNTRY_PLACE_OF_BIRTH_CODE_FK	Link to the country code where the client was born at TB_COUNTRIES	STRING (2)	R	TB_COUNTRIES ISO country codes (see Annex)
DISTRICT_OF_BIRTH_CODE_FK	link to the district code where the client was born on TB_DISTRICTS	STRING	O	
PASSPORT_NUMBER	Passport number in case of foreigners	STRING (10)	O	If foreigner the passport number is mandatory
COUNTRY_CODE_OF_ISSUANCE_FK	link to the ISO Country code where the client passport was issued, on TB_COUNTRIES	STRING (2)	O	If foreigner, field is required. (ISO country codes)
DATE_PASSPORT_ISSUED	Date passport was issued	DATE	O	If foreigner, field is required
PASSPORT_EXPIRATION_DATE	Date passport expires	DATE	O	If foreigner, field is required

TB_ADDRESS (*)				
PROVINCE_CODE_FK	Link to the province code where the client lives, on TB_PROVINCES	STRING (1)	R	TB_PROVINCES 1 = Kigali 2 = North 3 = East 4= South 5 = West
DISTRICT_CODE_	Link to the district code where the	STRING	R	On the data entry screen, only the district names from the respective

FK	client lives on TB_DISTRICTS			province should appear for selection.
SECTOR_CODE_FK	Link to the Sector code where the client lives on TB_SECTORS	STRING	R	On the data entry screen, only the sector names from the respective province/district should appear for selection.
CELL_CODE_FK	Link to the Cell code where the client lives on TB_CELLS	STRING	R	On the data entry screen, only the cell names from the respective province/district/sector should appear for selection.
VILLAGE_CODE_FK	Link to the Village code where the client lives on TB_VILLAGES	STRING	R	On the data entry screen, only the village names from the respective province/district/sector/cells should appear for selection.
POST_OFFICE_BOX	Post Office Box of the client address	STRING	O	
CELULAR_TELEPHONE_	Client cell phone	STRING (12)	O	
BUSINESS_TELEPHONE	Client Business Telephone	STRING (12)	O	
EMAIL		STRING (30)	O	
STREET_NAME	Street name where the client lives	STRING (50)	O	
STREET_NUMBER	Street number where the client lives	STRING (10)	O	
COMPLEMENT	Complement of the street number like apt number	STRING (30)	O	
POSTAL_CODE	Postal code of the address where the client lives		O	
COUNTRY_CODE	Country where the person lives	STRING (2)	O	Use ISO 3166 Country codes
LATITUDE	(degrees, minutes..)	STRING(5)	O	
LONGITUDE	(degrees, minutes..)	STRING(5)	O	

(*) TB_ADDRESS is a separate table that holds all addresses no matter if from an individual or organization. A foreign-key will establish the relationship between either the individual or the organization with the address. Historical data about the addresses will be stored in the database

TB_HC_PROFESSIONAL-QUALIFICATION				
EDUCATION_LEVEL	HC professional education level	STRING (1)	R	0 = Pre-primary education 1 = Primary education or first stage of basic education 2 = Lower secondary or second stage of basic education 3 = (Upper) secondary education 4 = Post-secondary non-tertiary education 5 = First stage of tertiary education 6 = Second stage of tertiary education
PROFESSIONAL_REGISTRATION_BODY_CODE	HC professional registration body code	STRING (1)	R	1 = Physicians 2 = Nurses 3 = Not applicable
PROFESSIONAL_REGISTRATION_NUMBER	HC professional registration number	STRING (10)	O	If there is a professional registration body code = 1 or 2 then this field is mandatory
PROFESSIONAL_REGISTRATION_START_DATE	Date the professional registration was issued	DATE	O	If there is a professional registration body code = 1 or 2 then this field is mandatory
PROFESSIONAL_REGISTRATION_STATUS	Informs the status of the professional registration	STRING (2)	O	If there is a professional registration body code = 1 or 2 then this field is mandatory 1 = Active / full registration 2 = Limited registration 3 = Student registration 4 = Suspended registration 5 = Terminated registration 6 = Nullified 7 = Pending 8 = Inactive registration
PROFESSIONAL_REGISTRATION_END_DATE	Date professional registration ended	DATE	O	If there is a professional registration body code = 1 or 2 then this field is

				mandatory
--	--	--	--	-----------

TB_HC_CURRENT EMPLOYMENT(*)				
HC_PROFESSIONAL_FK	Holds the key to the HC professional table to establish the relationship among them	STRING (15)	R	
OCCUPATION_GROUP_CODE	Informs the professional occupation group code for this employment	STRING (10)	R	Please see Annex 2
OCCUPATION_CODE	Informs the professional occupation code for this employment	STRING (10)	R	Please see Annex 2
NUMBER_HOURS_WORKED_WEEK	Informs the number of hours per week the HC professional works in this employment	INTEGER	O	

(*) Separate table in an 1 to n relationship from the HC professional table to this one.

TB_HC_PROFESSIONAL_SIGNATURES			
HOC_PROFESSIONAL_ID	STRING (15)	R	Holds the key to the HC professional table to establish the relationship among them
NID_FORM_SUBMITTER	STRING(16)	R	
DATE_FORM_COMPLETED	DATE	R	
NID_PERSON_APPROVED_FORM	STRING(16)	R	
DATE_FORM_APPROVED	DATE	R	

5.1.2 Use cases for the HC professional registry

At the central level, SHR application, the following use cases are implemented:

- Maintain HC professional registry – include, query and update
- Query HC professionals registry – print report of HC professionals from one or more HC facilities

5.1.3 Interoperability Requirements

External systems will be able to interoperate with the MOH Health Worker Registry through the following web services, using the HIX:

- **Query Health Care Professional Registry** - to query the HC professional registry and obtain all the information on one HC professional. The query response will show the demographic data as in the client registry response plus the extensions regarding credentials and current work places. If the professional works in more than one facility each work relation (facility and specific occupation) will be part of the response. A history of previous positions is also part of the registry. The query should allow for the POCs to query the HC professional registry using any of this fields as filters:

- Name of HC professional (last name / name) or full name
- NID
- Health Number
- Mutual Number
- Rama Number
- Social Security Number
- Gender
- DOB
- Country of birth
- HC Professional Address (province / district / sector / cell / village)
- Cell phone
- HC Professional Qualifications
 - Education level
 - Registration Body
 - Registration Number
 - Registration Status
- Current Employment
 - Occupation Group
 - Occupation Code
 - Type of Contract
 - Number of Hours per Week

The query results should also allow for a printed version.

5.2 Health Facilities Registry (HFR)

The Facilities Registry holds all HC facilities as well as administrative health units identified by a unique national number. There is a relationship between the individual provider registry and the facility registry. This is a 1 to n relationship, meaning that one individual provider can work in one

or more facilities with different roles in each. The registry will be updated in a two-step way, always with validation from the central level. The HFR design took into account the work currently being done in the definition of the National Asset Management Information System.

5.2.1 Health Facilities Registry Data Requirements – (TB_HEALTH_FACILITY)

Element	Description	Length/ TYPE	Status (R = required and O =Optional)	Behavior
Identification structure				
HC_FACILITY_ _NUMBER	Number of the HC facility	STRING (10)	R	This is the national unique identifier number for all HC facilities.
HC_FACILITY_NA ME	The name of the HC facility	STRING (80)	R	
HC_FACILITY_CO DE	The code of the HC Facility	STRING (3)	R	1 = National Referral Hospital (HNR) 2 = Provincial Referral Hospital (PH) 3 = District Hospital (HD) 4 = Health Center (CS) 5 = Health Post (PS) 6 = Dispensary (DISP) 7 = Community Dispensary (FOSACOM) 5.2.1.1.1 8= Prison Clinic (PRIS) 9 = Medical Clinic (CLIN) 10 = Military Hospital (HM) 11 = District Pharmacy (DP) 12= Blood Bank (BB) 13 = Other (*)
HC_FACILITY_STA TUS_CODE	The status of the HC facility	STRING (2)	R	1 = Active : 2 = Planned 3 = Closed
HC_FACILITY_OPE NING_DATE_PLAN NED	The probable opening date	DATE	O	Required if status is = Planned Should accept partial dates in month/year and or only year
HC_FACILITY_CAT EGORY_CODE	The category of the HC facility	STRING (2)	R	1 = Public 2 = Agrée 3 = Private 4 = Community owned 5 = Parastatal (Military, Police, Prison, State run dispensaries)

HC_FACILITY_DATE_INAUGURATED	The date the HC was inaugurated	DATE	R	Should accept partial dates in month/year and or only year
HC_FACILITY_DIRECTOR_NAME	The Name of the HC facility director	STRING (80)	R	
HC_FACILITY_DIRECTOR_NID	The NID of the HC facility director	STRING (10)	R	
HC_FACILITY_DIRECTOR_EMAIL	The eMail of the HC facility director	STRING (20)	O	
PRIMARY_REFERRAL_FACILITY_FOSSA_NUMBER	The HC facility number of the primary referral facility	STRING (10)	R	

TB_ADDRESS (*)				
PROVINCE_CODE_FK	Link to the province code where the client lives, on TB_PROVINCES	STRING (1)	R	TB_PROVINCES 1 = Kigali 2 = North 3 = East 4 = South 5 = West
DISTRICT_CODE_FK	Link to the district code where the client lives on TB_DISTRICTS	STRING	R	On the data entry screen, only the district names from the respective province should appear for selection.
SECTOR_CODE_FK	Link to the Sector code where the client lives on TB_SECTORS	STRING	R	On the data entry screen, only the sector names from the respective province/district should appear for selection.
CELL_CODE_FK	Link to the Cell code where the client lives on TB_CELLS	STRING	R	On the data entry screen, only the cell names from the respective province/district/sector should appear for selection.
VILLAGE_CODE_FK	Link to the Village code where the client lives on TB_VILLAGES	STRING	R	On the data entry screen, only the village names from the respective province/district/sector/cells should appear for selection.
POST_OFFICE_BOX	Post Office Box of the client address	STRING	O	
CELULAR_TELEPHONE	Client cell phone	STRING (12)	O	
BUSINESS_TELEPHONE	Client Business Telephone	STRING (12)	O	

EMAIL		STRING (30)	O	
STREET_NAME	Street name where the client lives	STRING (50)	O	
STREET_NUMBER	Street number where the client lives	STRING (10)	O	
COMPLEMENT	Complement of the street number like apt number	STRING (30)	O	
POSTAL_CODE	Postal code of the address where the client lives		O	
COUNTRY_CODE	Country where the person lives	STRING (2)	O	Use ISO 3166 Country codes
LATITUDE	(degrees, minutes..)	STRING(5)	O	
LONGITUDE	(degrees, minutes..)	STRING(5)	O	
TARGET_POPULATION	The target population of this facility		R	
YEAR_POPULATION_ESTIMATE	The year of the population estimate	YEAR	R	

TB_HC_FACILITY_CATCHMENT_AREA_POPULATION

HC_FACILITY_NUMBER_ID	ID of the facility	STRING(10)	R	
HC_CATCHMENT_AREA_LEVEL	The level by which the catchment area was calculated	STRING (1)	R for all HC facilities type 1,2,3,4, or 5.	1 = National 2 = Province 3 = District 4 = Villages
HC_FACILITY_CATCHMENT_AREA_POPULATION	The code of the village that is part of the catchment area of this HC facility	STRING (10)	R	

TB_HC_FACILITY_CATCHMENT_AREA

HC_FACILITY_NUMBER_ID	ID of the facility	STRING(10)	R	
HC_CATCHMENT_AREA_CODES	The codes of the regions used to calculate the population	STRING (4)	R for all HC facilities type 1,2,3,4, or 5.	

TB_HC_FACILITY_INFRASTRUCTURE

HC_FACILITY_NUMBER_ROOMS	The number of rooms at the HC facility	INTEGER	R	
HC_FACILITY_NUMBER_PT_BEDS	The number of patient beds at the HC facility	INTEGER	R	
HC_FACILITY_NUMBER_AMBULANCES	The number of functional ambulances at the HC facility	INTEGER	R	
HC_FACILITY_NUMBER_CARS	The number of functional cars at the HC facility	INTEGER	R	
HC_FACILITY_NUMBER_MOTORCYCLES	The number of functional motorcycles at the HC facility	INTEGER	R	
HC_FACILITY_ELECTRICITY_SOURCE_CODE	The main electricity source for the HC facility	STRING(2)	R	1 = National Grid 2 = Generator 3 = Solar panels 4 = No electricity
HC_FACILITY_GENERATOR_KVA	The generator KVA	REAL	O	Required if electricity source is = Generator
HC_FACILITY_WATER_SOURCE_CODE	The main water source for the HC facility	STRING(2)	R	1 = National piped water supply 2 = Local piped water supply 3 = Protected well 4 = Open well 5 = Surface water (river, lake, etc.) 6 = Rain water reservoir 7 = Water Truck 8 = No regular water source

HC_FACILITY_NUMBER_REFRIGERATORS	The number of functional refrigerators or freezers	INTEGER	R	
HC_FACILITY_COMPUTERS_NUMBERS	The number of functioning computers of the HC facility	INTEGER	R	
HC_FACILITY_INTERNET_CONNECTION_PRIMARY_CODE	The HC facility primary Internet connection	STRING (2)	R	1 = Cell Modem 2 = Fixed Line (ADSL, fiber) 3 = Satellite (VSAT) 4 = Wireless (WINMAX) 5 = No Internet connection
HC_FACILITY_INTERNET_CONNECTION_SECONDARY_CODE	The HC facility secondary Internet connection	STRING (2)	R	1 = Cell Modem 2 = Fixed Line (ADSL, fiber) 3 = Satellite (VSAT) 4 = Wireless (WINMAX) 5 = No Internet connection

TB_HC_FACILITIES_SERVICES OFFERED (one record for each service provided)				
HC_FACILITY_NUMBER_ID	The ID of the HC facility	STRING(10)	R	
CATEGORY_SERVICE_CODE	The HC service provided category_code	STRING(03)	R	
SERVICE_PROVIDED_CODED	Service provided code	STRING(04)	R	

TB_HC_FACILITY_PARTNER_ORGANIZATIONS (one record for each partner organization)				
HC_FACILITY_NUMBER_ID	The ID of the HC facility	STRING(10)	R	
PARTNER_ORGANIZATION_CODE	The partner organization code	STRING(3)	O	

TB_HC_FACILITY_SIGNATURES				
HOC_PROFESSIONAL_ID	STRING (15)	R		Holds the key to the HC professional table to establish the relationship among them

NID_FORM_SUBMITTER	STRING(16)	R	
DATE_FORM_COMPLETED	DATE	R	
NID_PERSON_APPROVED_FORM	STRING(16)	R	
DATE_FORM_APPROVED	DATE	R	

5.2.2 Interoperability Requirements

External systems will be able to interoperate with the MOH Facilities Registry through the following web services, using the HIX:

- Query Health Facility – to query Health Care Facilities by any of the filters below:
 - HC Facility number
 - HC facility name
 - Type of HC facility
 - HC facility status
 - HC facility category
 - HC facility date inaugurated (should be able to query before, or after partial dates)
 - HC facility director name
 - HC facility director NID
 - HC facility partner organizations (need to structure this field)
 - HC facility referral villages
 - HC facility latitude or longitude
 - HC address (province, District, Sector, Village, Cell)
 - HC facility number of rooms (less or greater than should also be allowed)
 - HC facility number of patient beds (less or greater than should also be allowed)
 - HC facility number of ambulances (less or greater than should also be allowed)
 - HC facility number of cars (less or greater than should also be allowed)
 - HC facility number of motorcycles (less or greater than should also be allowed)
 - HC facility electricity source
 - HC facility water source
 - HC facility number of freezers (less or greater than should also be allowed)
 - HC facility number of computers ((less or greater than should also be allowed)
 - HC facility type of Internet connection
 - HC facility telephone number (cell and or fixed)

The query results should also allow for a printed version.

6 References

- [1] ISOTC 215. ISO TS 22220:2009 Identification of Subjects of Care.
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=40782
(accessed October 5,2010)
- [2] ISO TC 215. ISO TS 27527:2010 Provider Identification.
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=44216
(accessed October 5,2010)
- [3] WHO. Report of the First Meeting of the Health Workforce Information Reference Group (HIRG). WHO/HSS/HRH/HIG/2010.1. Geneva 2010.
http://whqlibdoc.who.int/hq/2010/WHO_HSS_HRH_HIG_2010.1_eng.pdf Acesso em 20 Ago 2010
- [4] WHO. Classificação de Profissionais de Saúde -
http://www.who.int/hrh/statistics/workforce_statistics/en/index.html Acesso em 20 Jul 2010
- [5] International Standard Classification of Occupations. International Labour Organization.
<http://www.ilo.org/public/english/bureau/stat/isco/index.htm>, Acesso 11 Jan 2009

7 Annex 1 – HC Facility and HC Professional Registry Forms (mandatory fields are marked with an *)

1. Identification			
Health Facility Name* :		Facility ID*: (HMIS unit only) (mandatory for updates, blank for new facilities)	
Type of health care facility*:	<input type="checkbox"/> National Referral Hospital (HNR) <input type="checkbox"/> Provincial Referral Hospital (PH) <input type="checkbox"/> District Hospital (HD) <input type="checkbox"/> Health Center (CS) <input type="checkbox"/> Health Post (PS) <input type="checkbox"/> Dispensary (DISP) <input type="checkbox"/> Community Dispensary (FOSACOM)	<input type="checkbox"/> Prison Clinic (PRIS) <input type="checkbox"/> Medical Clinic (CLIN) <input type="checkbox"/> Military Hospital (HM) <input type="checkbox"/> District Pharmacy (DP) <input type="checkbox"/> Mutuelle/CBHI section (MU) <input type="checkbox"/> Blood Bank (BB) <input type="checkbox"/> Other, Specify : .	
Status*:	<input type="checkbox"/> Active : <input type="checkbox"/> Planned, specify probable opening date : <input type="checkbox"/> Closed :		
Category*:	<input type="checkbox"/> Public <input type="checkbox"/> Agrée <input type="checkbox"/> Private <input type="checkbox"/> Community owned <input type="checkbox"/> Parastatal (Military, Police, Prison, State run dispensaries)		
Date inaugurated*: (at least year must be informed)	DAY:	MONTH:	YEAR:
Name of titulaire/director* :		NID #*	
eMail of titulaire/director:		Cell phone #*	
Name of health facility that provides supervision and receives HMIS reports*		ID of the health facility that provides supervision and receives HMIS reports	
Implementing partner organizations:	(List partners organizations in section 6)		
2. Geographic Coordinates			
Province*:		Street:	
District*:		Number	
Sector*:		Complement	
Cell*:		PO box:	
Village*:			
Latitude*:		Longitude*:	Catchment area population section 7)*:
Target Population*:		Year target population*:	

3. Infrastructure				
Number of rooms (clinical and administrative) :			Number of Patient beds:	
Transport available : (and functional)	# of ambulances		Principal Water Source:	<input type="checkbox"/> National piped water supply <input type="checkbox"/> Local piped water supply <input type="checkbox"/> Protected well <input type="checkbox"/> Open well <input type="checkbox"/> Surface water (river, lake, etc.) <input type="checkbox"/> Rain water reservoir <input type="checkbox"/> Water Truck <input type="checkbox"/> No regular water source
	# of cars			
	# of motorcycles			
Principal Electricity Source :	<input type="checkbox"/> National Grid <input type="checkbox"/> Generator, specify KVA : <input type="checkbox"/> Solar panels <input type="checkbox"/> No electricity			
Cold chain:	# of functional refrigerators/freezers:		Computers :	# functioning
4. Communications				
Communication : (belonging to the HC facility)	<input type="checkbox"/> Fixed Telephone	N°	Primary Internet Connection:	<input type="checkbox"/> Cell Modem <input type="checkbox"/> Fixed Line (ADSL, fibre) <input type="checkbox"/> Satellite (VSAT) <input type="checkbox"/> Wireless (WIMAX, etc.) <input type="checkbox"/> No internet connection
	<input type="checkbox"/> Mobile Telephone	N°		
Secondary Internet Connection:			<input type="checkbox"/> Cell Modem <input type="checkbox"/> Fixed Line (ADSL, fibre) <input type="checkbox"/> Satellite (VSAT) <input type="checkbox"/> Wireless (WIMAX, etc.) <input type="checkbox"/> No internet connection	

5. Services offered (check all services that are offered)				
03	Clinical services		06	Pharmacy
0301	<input type="checkbox"/>	Primary Outpatient Curative Consultation (CPC)	0601	<input type="checkbox"/> Pharmacy
0302	<input type="checkbox"/>	Hospitalization	07	Prosthetics and Medical devices
0303	<input type="checkbox"/>	Emergency care	0701	<input type="checkbox"/> Prosthetics
0304	<input type="checkbox"/>	Dentistry	0702	<input type="checkbox"/> Other medical devices
0305	<input type="checkbox"/>	General Ophthalmology	08	Complementary actions to promote health
0306	<input type="checkbox"/>	Integrated Management of Childhood Illness	0801	<input type="checkbox"/> Hygiene and environmental health
0307	<input type="checkbox"/>	Management of gender violence	0802	<input type="checkbox"/> Medico-Legal documentation
0308	<input type="checkbox"/>	Mental Health Services	0803	<input type="checkbox"/> Pre-marital Consultation
0309	<input type="checkbox"/>	Physical therapy	0804	<input type="checkbox"/> Vector and Zoonosis control
0310	<input type="checkbox"/>	Nutritional Rehabilitation	0805	<input type="checkbox"/> Epidemiological Surveillance and Response
0311	<input type="checkbox"/>	Cardiovascular care and treatment	02	Diagnostic services
0312	<input type="checkbox"/>	TB care and treatment	0201	<input type="checkbox"/> Laboratory
0313	<input type="checkbox"/>	Care and treatment for persons living with HIV/AIDS	0202	<input type="checkbox"/> Voluntary Counseling and Testing
0314	<input type="checkbox"/>	Diabetes care and treatment	0203	<input type="checkbox"/> Ultrasound
0315	<input type="checkbox"/>	Other Non Communicable disease (NCD) care and treatment	0204	<input type="checkbox"/> Medical Imagery (x-ray)
0316	<input type="checkbox"/>	Management of dystocic pregnancies	01	Health promotion and prevention
0317	<input type="checkbox"/>	Post-abortion care	0101	<input type="checkbox"/> Ante-natal consultation
0318	<input type="checkbox"/>	Deliveries - high risk	0102	<input type="checkbox"/> Behavior Change Communication/Health Education
0319	<input type="checkbox"/>	Deliveries – normal	0103	<input type="checkbox"/> Community mobilization
0320	<input type="checkbox"/>	Newborn care	0104	<input type="checkbox"/> Family Planning
04	Surgical services		0105	<input type="checkbox"/> Post Natal Consultation
0401	<input type="checkbox"/>	Major surgical interventions	0106	<input type="checkbox"/> Growth Monitoring/Nutrition Surveillance
0402	<input type="checkbox"/>	Minor surgical interventions	0107	<input type="checkbox"/> Vaccination
05	Organ transplants and Blood transfusions		0108	<input type="checkbox"/> Psychosocial support
0501	<input type="checkbox"/>	Blood bank	0109	<input type="checkbox"/> General Health Promotion Activities

0502	<input type="checkbox"/>	Organ transplants			
-------------	--------------------------	-------------------	--	--	--

6. Implementing Partners Organizations (check all that apply)		
Code	Partner Organizations	
10	MSH	<input type="checkbox"/>
1	CAAC	<input type="checkbox"/>
11	Non-affilie	<input type="checkbox"/>
5	GF	<input type="checkbox"/>
8	MAP	<input type="checkbox"/>
7	IHI/HCSP	<input type="checkbox"/>
3	EGPAF	<input type="checkbox"/>
9	ICAP/CU	<input type="checkbox"/>
4	FHI	<input type="checkbox"/>
2	CRS	<input type="checkbox"/>
12	PIH/CF	<input type="checkbox"/>
6	GTZ	<input type="checkbox"/>
13	DREW	<input type="checkbox"/>

7A. List of villages in health facility catchment area (Health Centers, Health Posts only)			
Code ¹	Village Name	Code	Village Name

¹ Select 10 digit code from MiniLoc village code list

7B. List of health centers that refer to this districtal hospital			
Code ²	Health Center Name	Code	Health Center Name

7C. List of provinces that refer to this provincial hospital	
Code ³	Province

² Select 10 digit code from MiniLoc village code list

³ Select 10 digit code from MiniLoc village code list

4. Signatures and Approvals

Prepared by:		NID	
Date of submission:			
Approved by:		NID	
Date of approval:			

Rwanda Health Facility Employee Registration Form

(Version 1.7)

(one form per HC professional)

Health Facility Name :	Health Facility ID: (HMIS unit only)
------------------------	--------------------------------------

1. HC Professional Identification	
NID:	Health Number:
Last Name*:	Other Names*:
Drivers License:	Mutual Number:
Full name of the father:	Full name of the mother:
Date of birth DD/MM/YYYY: DD: MM: YYYY:	Estimated age (if date of birth is not available) <number> years
Gender: () masculine () feminine	Marital Status: () single () married () widow/widower () divorced () cohabitation
Country of birth: () Rwanda () Other Please fill foreigner information below	District of Birth:
2. Foreigner Information	
Country of Birth (see codes below) :	Country passport was issued (see codes below):
Date passport was issued: DD/MM/YYYY	Passport expiration date: (DD/MM/YYYY)

3. HC Professional Address	
Province: () Kigali () North () East () South () West	Client Business Telephone :
District where the client lives:	Street name where the client lives:
Sector where the client lives:	Street number where the client lives:
Cell where the client lives:	Complement of the street number like apt number :
Village where the client lives:	Postal code of the address where the client lives:
Post Office Box of the client address:	Country where the person lives: (please use two letter codes from list below ISO 1366 country codes)
Client cell phone:	

3. HC Professional Qualifications		
Education Level: <input type="checkbox"/> Level 0 - Pre-primary education <input type="checkbox"/> Level 1 - Primary education or first stage of basic education <input type="checkbox"/> Level 2 - Lower secondary or second stage of basic education <input type="checkbox"/> Level 3 - (Upper) secondary education <input type="checkbox"/> Level 4 - Post-secondary non-tertiary education <input type="checkbox"/> Level 5 - First stage of tertiary education <input type="checkbox"/> Level 6 - Second stage of tertiary education	Professional Registration Body: <input type="checkbox"/> Physicians <input type="checkbox"/> Nurses <input type="checkbox"/> Not applicable	
Professional Registration Number:	Registration Start Date: DD/MM/YYYY	
Registration status: <input type="checkbox"/> Active / full registration <input type="checkbox"/> Limited registration <input type="checkbox"/> Student registration <input type="checkbox"/> Suspended registration <input type="checkbox"/> Terminated registration <input type="checkbox"/> Nullified <input type="checkbox"/> Pending <input type="checkbox"/> Inactive registration	Registration End Date: DD/MM/YYYY	
4. Current Employment (all different contracts in this facility should be informed – codes on Annex 2.		
Occupation group:	Occupation code:	Number of hours per week:
Occupation group:	Occupation code:	Number of hours per week:
Occupation group:	Occupation code:	Number of hours per week:
Occupation group:	Occupation code:	Number of hours per week:

4. Signatures and Approvals	
Prepared by (name):	NID:
Date of submission: (dd/mm/yyyy)	
Approved by (name):	NID:
Date of approval: (dd/mm/yyyy)	

8 Annex 2. Rwanda Enterprise architecture framework: Occupation and Education codes for Provider registry

Occupation Groups Code	Occupation Groups	Occupations Code	Occupations Description
001	Health Professionals	2211	Generalist medical practioners
		2212	Specialist medical practitioners
		2212.1	Doctors in obstetric and gynaecological specialties
		2212.2	Doctors in paediatrics
		2212.3	Doctors in psychiatric specialties
		2212.4	Doctors in the medical group of specialties
		2212.5	Doctors in the surgical group of specialties
		2212.6	Doctors in specialties not elsewhere classified
		2221	Nursing professionals
		2222	Midwifery professionals
		2230	Traditional and complementary medicine professionals
		2240	Paramedical practitioners
		2261	Dentists
		2262	Pharmacists
		2263	Environmental and occupational health and hygiene professionals
		2264	Physiotherapists
		2265	Dieticians and nutritionists
		2266	Audiologists and speech therapists
		2267	Optometrists and ophthalmic opticians
2269	Health professionals not classified elsewhere		
002	Health Associate Professionals	3141	Life science technicians
		3211	Medical imaging and therapeutic equipment technicians
		3212	Medical and pathology laboratory technicians

		3213	Pharmaceutical technicians and assistants
		3214	Medical and dental prosthetic technicians
		3221	Nursing associate professionals
		3222	Midwifery associate professionals
		3230	Traditional and complementary medicine associate professionals
		3251	Dental assistants and therapists
		3252	Medical records and health information technicians
		3253	Community health workers
		3254	Dispensing opticians
		3255	Physiotherapy technicians and assistants
		3256	Medical assistants
		3257	Environmental and occupational health inspectors and associates
		3258	Ambulance workers
		3259	Health associate professionals not classified elsewhere
003	Health Management and Support Personnel	1342	Health service managers
		2131	Health management personnel not elsewhere classified
		2133	Life science professionals (including bacteriologists, pharmacologists and related)
		2635	Social work and counselling professionals
		2635.1	Non-health professionals not elsewhere classified
		3141	Life science technicians
		3344	Medical secretaries
		3344.1	Non-health technicians and Associate professionals not elsewhere classified
		3344.2	Clerical support workers
		3344.3	Service and sales workers
		3344.4	Trades workers
		3344.5	Plant and machine operators and assemblers

		3344.6	Elementary occupations
		3344.7	Armed forces occupations
		3344.8	Data Manager/Statistician
		3344.9	Other health management and support personnel
		5321	Health care assistants
		5322	Home-based personal care workers
		5329	Personal care workers in health services not classified elsewhere

8.1 Education level

EdLevelCD	Education Level
01	Level 0 - Pre-primary education
02	Level 1 - Primary education or first stage of basic education
03	Level 2 - Lower secondary or second stage of basic education
04	Level 3 - (Upper) secondary education
05	Level 4 - Post-secondary non-tertiary education
06	Level 5 - First stage of tertiary education
07	Level 6 - Second stage of tertiary education

9 Annex 3 . Health care facility database – current structure

Name: _____

Address: _____

Province: _____

District: _____

Sector: _____

Nom du Chef : (name of director) _____

Email du Chef: (email of director) _____

Date PBF : (????) not sure what that is. _____

Reseau: (????) not sure what that is. _____

Reseau PBF Communautaire: (????) not sure what that is. _____

Nom du chef de Comite de Sante : (don't have this in our form) _____

Type FOSA: _____

Code: (which code is this?) _____

Latitude: _____

Longitude: _____

Date Created : (which date is this? The date the form was filled?) _____

Date Modified: _____

Population Cible: (target population) _____

Annee Population Cible: (year target population) _____

Phase PBF: (???) _____

Code FOSA:; _____

10 Annex 4 - WHO Recommendations for Health Information Systems for Human Resources for Health

WHO recognizes the importance and key factor that a county Human Resources for Health system represents to organize health care. By having proper information on who is your human resource it is possible to do better allocation, control and evaluation. In March 2010, the World Health Organization's Department of Human Resources for Health, the Global Health Workforce Alliance and the Health Metrics Network, who have called for the establishment of a Health Workforce Information Reference Group (HIRG). A technical meeting was organized in Montreaux Switzerland and the final recommendations from this meeting were:

- a) *"Country HRH information systems should be a sub-component of the national health information system.
It is important to look at HRH data with different lenses depending upon the source – administrative records, facility-based data and population based data – and to be transparent about the coverage, definitions and limitations for each.*
- b) *Baseline data on the current HRH situation need to be identified and validated among key stakeholders to be useful and accepted for decision-making and to strengthen the existing HRH information system.*
- c) *Consistent assessment and validation is required of the status and results of the HRH information system; an independent technical body could take on this role.*
- d) *Agreed standards and protocols are necessary for disseminating, sharing and using different types of data sources within the overall HRH information system.*
- e) *Harmonization and alignment of HRH classifications and definitions with other frameworks and classifications for social and economic data and statistics is important; this includes international standard classifications for occupation, education and industry statistics (and their national equivalents).*
- f) *Harmonization and alignment of HRH indicators and information with other population an development monitoring and evaluation frameworks is important.*
- g) *Capacity building of health system personnel in collection, management, analysis, interpretation and use of HRH data and information is required at every level of the system.*
- h) *Routine administrative data should use unique identifiers that correspond to individual health workers within the overall information system.*
- i) *While many existing data sources can be used for monitoring the health labour and educational system in countries, they may occasionally need to be supplemented with ad hoc surveys and complementary research."*[3]