Supporting Better Health in Kenya through Improved Health Workforce Regulation: Kenya Health Regulatory Human Resource Information System (rHRIS)

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Kenya Health Workforce Project

- The Kenya Health Workforce Project began with pilot funding from CDC's office of Global Health. CDC/PEPFAR began funding in 2006. Project began a new grant cycle in 2012- 2017.

- Implemented by Emory University in collaboration with Ministries of Health, professional councils and boards in Kenya.

- Major goal is to establish electronic health workforce information systems that provide accurate and real-time data for policy, health program planning, and management of Kenya's human resources for health (HRH).

- Kenya is serving as a model in East Central and Southern Africa (ECSA) region for best practices on improvement of HR planning & management to meet the Sustainable Development Goals (SDGs).

- Enhanced South to South collaboration by providing technical assistance to the Health Professionals Council of Zambia and General Nursing Council of Zambia; In partnership with Emory University Project Zambia.

Project Structure
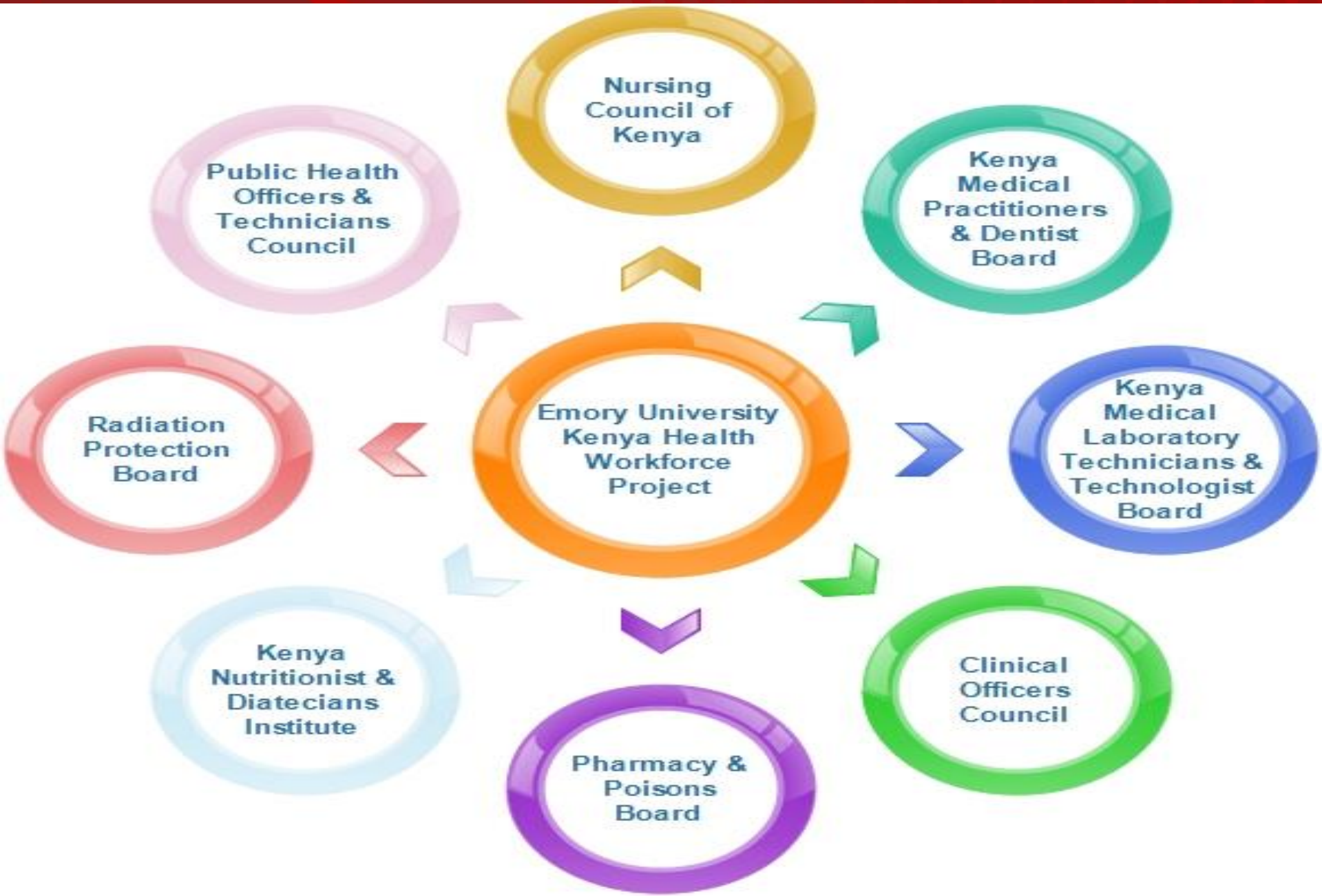
Project Need

- Kenya healthcare workforce's supply and demand data existed in paper forms that were difficult to retrieve and use for HR management.

- Regulatory Boards were unable to produce reliable national workforce data in an efficient manner.

- MOH lacked accurate data on the number of professional health workers by age, position, cadre/ qualification, region, rate of attrition etc.

- Kenyan training institutions lacked data on national training & deployment needs with regards to the health professionals they were training.

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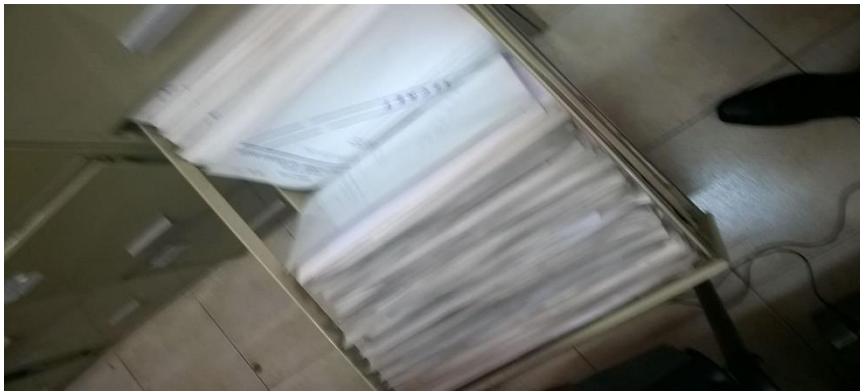
Project Objectives

- Establish electronic health workforce information systems that can provide accurate data for national policy and planning for HRH.

- Increase the capacity of the Kenyan leaders in data driven decision making for HRH management, research, and policy development.

- Provide a system to track training for health professionals to meet deployment needs for quality service delivery.

- Utilize data for program planning especially the roll out of HIV prevention, care and treatment programs.

- Strengthen health professionals regulatory boards/councils for efficient service delivery to clients and public.

rHRIS Overview

- Regulatory Human Resource Information System (rHRIS):

  - A suite of open-source web based tools for the health professional regulatory bodies in Kenya that are customer focused, collaborative, and based on identified business processes.

  - Developed in PHP and running on a MySQL platform.

  - User interface (UI) developed using HTML 5 and JQUERY UI objects.

  - Reports and data export done using excel and PDF tools.

  - Has built-in APIs to connect to custom and third party communication platforms for bulk SMS and emails.

rHRIS Core Functionalities

- Tracks student training.
- Student Internship management.
- Professionals registration examination management.
- Professionals registration.
- Professionals licensure.
- Continuous professional development management and tracking.
- Private practice management.
- Tracks professionals out-migration.
- Professionals specialty skills management.
- Professionals upgrade - in service training.
- Health training institutions and facilities management.
- Inspections and accreditation.
- HRH reporting.
- Health professional online services.

rHRIS Innovative Functionalities

- Bulk Short Messaging Services (SMS) notification.

- Email notification.

- Mobile money integration for mobile payment.

- SMS short code facility verification.

- Quick Response (QR) code certificate authentication.

- Integration with other existing systems.
  - Master Facility List.
  - Continuous Professional Development (CPD) systems e.g. iCPD
  - HRIS systems e.g. iHRIS
  - Financial systems

rHRIS Architecture

Departments

Web Application

Managers

Board/ Council

Website

Gateway

Bank

Users

BOARDS
> Manage applications
> Receives notifications
> Prints reports & statements
> Interacts with gateway

USERS
> Interact with Boards e.g
   send applications
> Make payments
> Receives notifications
> Downloads e.g interim license

GATEWAY
> Receives money on behalf of boards
> Holds money in a virtual account
> Generates statements

BANK
> Receives transfered money
> Normal routine applies

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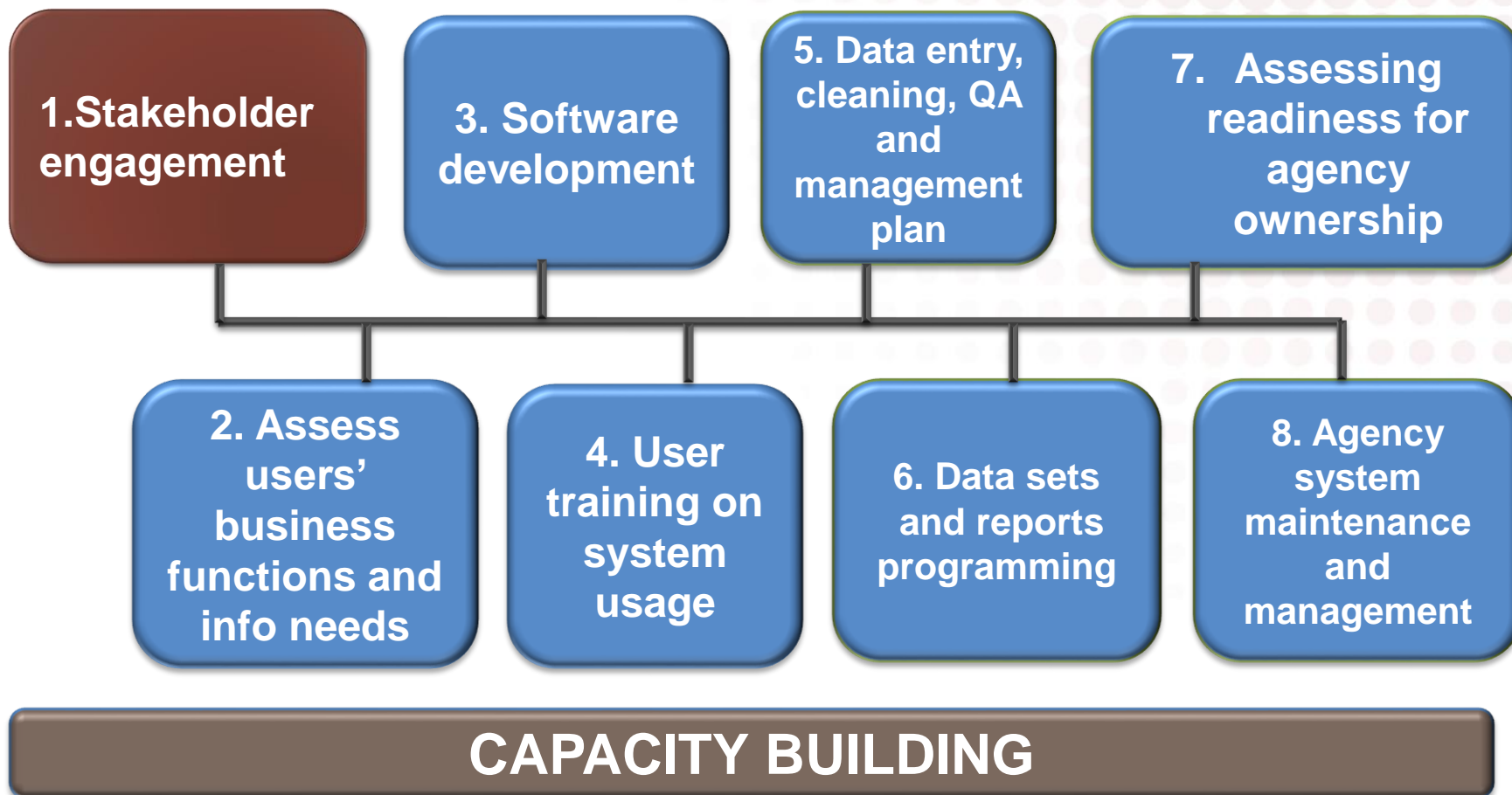NURSING

rHRIS Security Features

- Use of a combination of personal unique identifiers.
- Unique username and strong password enforcement.
- User roles authentication.
- Audit trail.
- User sessions management.
- Data Encryption.

Development Path for rHRIS

1. Stakeholder engagement

3. Software development

5. Data entry, cleaning, QA and management plan

7. Assessing readiness for agency ownership

2. Assess users' business functions and info needs

4. User training on system usage

6. Data sets and reports programming

8. Agency system maintenance and management

CAPACITY BUILDING

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Use of HRIS Information

HRIS Data Dissemination

- Regulatory boards and councils
  - Standard reports, dashboards, adhoc reports
- Ministry of Health
  - Standard reports
- Public & Clients
  - Website - Online registers
- National, regional & international levels
  - Formal reports
  - Conferences presentations
    - EAC regulatory bodies conference, ECSA ministers conference, ECSA DJCC in Arusha, WHO Global forum (Brazil 2013), ECSACON, National HRH ICC
  - 8 Publications
- Stakeholders e.g. partners, private sector, faith based, training institutions, health facilities
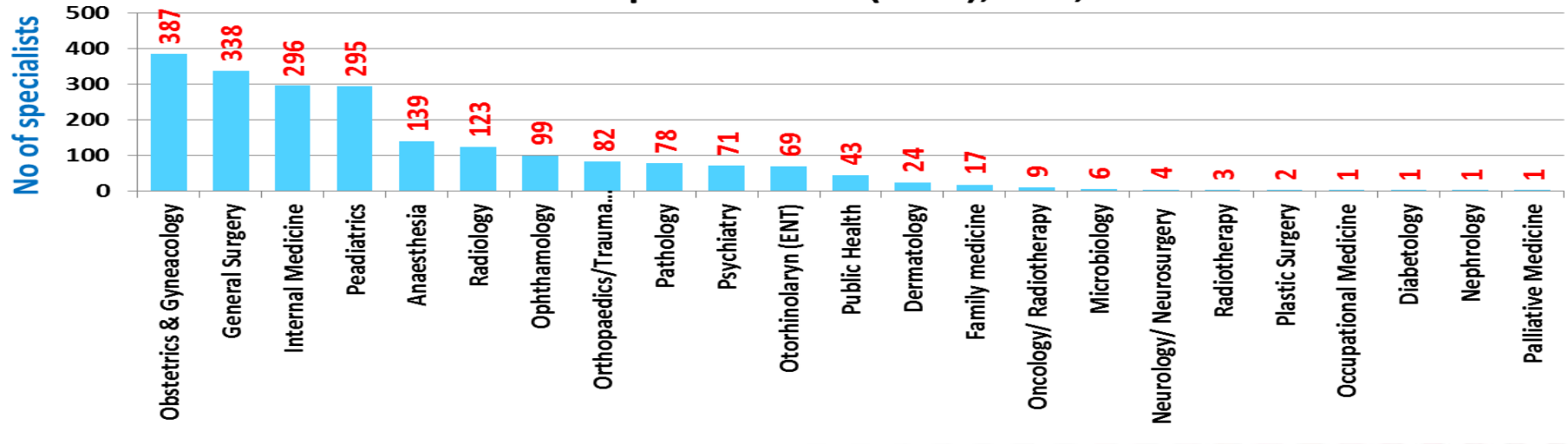- Researchers

Ratio of health professionals to population in Kenya; 2015

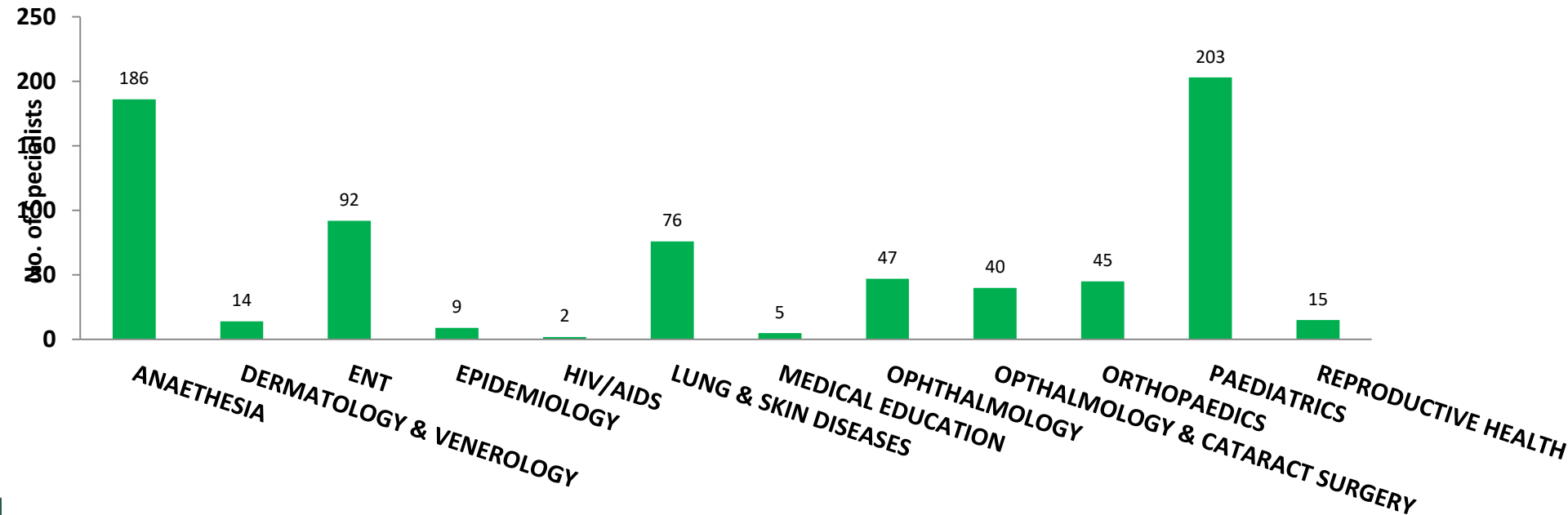|	Annual Training Output	Total # registered	Total # Retained	Ratio per 10,000 pop	Density 1:n pop
Medical Officers	611	9,499	5,660	1.5	1: 6,822
Dentists	52	1,067	603	0.2	1: 64,030
Pharmacists	330	2,420	1,616	0.4	1: 58,060
Pharm Technologists	994	7,132	4,671	1.3	1:9,762
Clinical Officers	1,642	15,347	10,562	2.7	1: 3,711
Lab Technologists	1,236	6,626	5,203	1.3	1: 7,421
Lab Technicians	326	4,445	3,213	0.8	1: 12,013
Nurses and Midwives	6,326	63,113	31,896	8.3	1: 1,210
Total (All cadres retained)			61,757	16	625
Total Active Doctors, Clinical Officers, Nurses/Midwives			48,118	12.5	802
© Recommended WHO ratio				25	

Specialized Skills capacity to meet emerging disease burden

Main areas of specialization (MDs); N=2,090

Specialization	No. of specialists
Obstetrics & Gynaecology	387
General Surgery	338
Internal Medicine	296
Peadiatrics	295
Anaesthesia	139
Radiology	123
Ophthamology	99
Orthopaedics/Trauma...	82
Pathology	78
Psychiatry	71
Otorhinolaryn (ENT)	69
Public Health	43
Dermatology	24
Family medicine	17
Oncology/ Radiotherapy	9
Microbiology	6
Neurology/ Neurosurgery	4
Radiotherapy	3
Plastic Surgery	2
Occupational Medicine	1
Diabetology	1
Nephrology	1
Palliative Medicine	1

Specialized areas for Clinical Officers (N=734)

Area	No. of specialists
ANAETHESIA	186
DERMATOLOGY & VENEROLOGY	14
ENT	92
EPIDEMIOLOGY	9
HIV/AIDS	2
LUNG & SKIN DISEASES	76
MEDICAL EDUCATION	5
OPHTHALMOLOGY	47
OPTHALMOLOGY & CATARACT SURGERY	40
ORTHOPAEDICS	45
PAEDIATRICS	203
REPRODUCTIVE HEALTH	15

Sustainability & Maintenance

- Performed gap analysis to identify priority areas for improvement.
- Developed sustainability and maintenance plan to prepare the agencies for transition.
- Mentorship for new agencies.
- Capacity building .
  - Data for decision making.
  - Data management.
  - IT & Server Management.
  - Software maintenance – programming.
- Established Joint Technical Advisory Committee & Joint Regulatory Collaborative to share synergies.
  - Shared cloud-host cost.

Challenges

- Inadequate capacity of regulatory bodies managers in data use
- Inadequate capacity in data management and system maintenance
- Lack of ICT officers in some regulatory bodies to maintain & sustain the state-of-the-art IT infrastructure and database systems
- Inadequate capacity to support infrastructure and internet costs in the decentralization of regulatory functions
- Lack of ownership and buy-in by some agencies
- High turnover in critical leadership positions e.g. CEO and chair of boards
- Inadequate funds to cater for new demands on dissemination of various documents for each board/council
- Corporate governance issues impacting negatively on project implementation

Lessons Learned

- Important to align and streamline boards/councils organization structure and functions from the onset.

- Capacity building at all levels of system development is essential for system maintenance and sustainability.

- Establishing a collaboration e.g. JRC leads to improved commitment to ownership of the rHRIS and reduction of implementation cost.

- Involvement of the MOH from the onset ensures alignment of the initiative to government policy and enhances buy-in.

- Having a collaboration of development partners e.g. Joint Partners Initiative (JPI) leads to better cooperation and harmonization to avoid overlaps.

- Involvement of regulatory agencies to participate in regional best practices fora has encouraged data use at both national and regional levels.

- Important to develop a detailed plan for transitioning from project to agency ownership and management, adequately fund implementation plan, and evaluate progress.

Future Focus

- Interoperability.

  - a shared information platform for all boards and councils for integration and interoperability.

- Joint online portals and services.

  - Data and reports warehouse for public, MOH and practitioners.

- Adopting cutting edge ICT innovations.

  - Short code USSD SMS functionality for verification of valid and bona fide practitioners and health institutions.

  - Barcoding and smart card functionality on retention cards for added security.

Impact of rHRIS to Kenya Health Regulatory Authorities

rHRIS System Impact

- System has improved efficiency on regulatory functions through
  - strengthening regulatory functions in area of inspection, preliminary investigations and case settlement, training and practice.
  - enhancing revenue collection through improved compliance.
  - reducing processing time (3months to instant for licenses).
  - moving towards paperless future is now a reality.
  - Increasing compliance on registration and license renewal based on CPD points.

rHRIS System Impact

- Online services and enhanced communication
    - Accessibility to regulatory services has been improved. Practitioners can now access services from where ever they are.

    - Agency websites have also been revamped to include downloadable forms and online registers for practitioners and the public to utilize

    - Use of an online services portal is further enhancing compliance by improving accessibility to professionals and providing for online transactions .

    - Use of mobile & online payments enhanced accountability by facilitating transparency in revenue collection.

rHRIS System Impact

- Decentralization & Influence on policy

  - Informed decentralization process to county levels

  - Through the use of training data informed scale up strategies of health workforce e.g. introduction of new training programs

  - Enabled production of the National Nursing Report on Nursing Status in Kenya and currently a joint National Report

rHRIS System Impact

- Security & Compliance
  - System enforced checks has enhanced the detection of fraudulent applications during recruitment of health professionals through online registers

  - Tracking registration enables regulatory bodies to identify non-registered practitioners and health institutions for follow-up

  - Has enhanced compliance with the e-GOVT policy through development of IT, data protection/security policies and cloud hosting

rHRIS System Impact

- Business Process Analysis assisted in:
  - Streamlining of processes and functions,
    - Student indexing, internship tracking and accreditation, registration, retention/renewal, preliminary investigation & CPD
  - identified need for additional secretariat staff and realignment of processes.
  - Strategic planning i.e. develop strategic plans and ISO certifications.

- Has led to improved ICT Infrastructure for the agencies:
  - desktops, battery packs, laptops, internet, official mail setup.

- Resulted in inter-agency collaboration and enhanced synergy through:
  - Joint Regulatory Collaborative – for sharing best practices, mentorship, solving regulatory challenges and data sharing
  - Joint Technical Advisory Collaborative (JTAC) – who develop innovative initiative to be implemented in the rHRIS and ensure implementation of JRC directives at their respective agencies
  - Data Clerks - who have greatly assisted in legacy data cleaning and data migration leading to improved data quality management

rHRIS System Impact

- HRH Reports:
  - up to date and current reports for Board, MOH and research, improved decision making.
  - Data shared include - training capacity, active practitioner registers, licensed health institutions registers, preliminary investigations case summaries.

- Dissemination fora:
  - EAC regulatory bodies conference, ECSA ministers conference, ECSA DJCC in Arusha, WHO Global forum (Brazil 2013), ECSACON (Nairobi 2016), AMCOA (Malawi 2016) & IAMRA (Melbourne 2016).

Thank You

Obrigado

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