

## HEALTH INFRASTRUCTURE MANAGEMENT AND MAINTENANCE

### 1<sup>st</sup> East African Regional Scientific Conference and Exhibition

#### Case Study:

#### STATE OF EQUIPMENT MAINTENANCE IN HEALTH FACILITIES IN UGANDA

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## Presentation Outline

1. Introduction to Concept of Health Infrastructure Management and Maintenance in Uganda
2. Components of Health Infrastructure
3. Policy on Health Infrastructure Management and Maintenance
4. HSSP II Objectives and Health Infrastructure Management
5. Roles of the Centre and Hospital Manager
6. Health Infrastructure Maintenance Strategy
7. Case Study: Equipment Maintenance

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## Health Infrastructure Management & Maintenance

- Health Infrastructure Management refers to the optimal use and operation of physical infrastructure and equipment to provide quality healthcare and health services
- Maintenance on the other hand is a management function that aims at prolonging the operational time and life of health infrastructure

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## Components of Health Infrastructure

- Buildings (Medical & Non medical)
- Equipment (Medical and Hospital plants)
- Communication/ICT - Radios & Networks
- Ambulatory Services and Transportation facilities

Think of BECA when planning for health infrastructure management

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## Overall Policy on Health Infrastructure Management and Maintenance

- Provide appropriate, efficient and functional health infrastructure for quality Health Services delivery
- Provide an effective and efficient Maintenance Programme for all health infrastructure
- Develop adequate capacity to Manage and Maintain health infrastructure

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## HSSP II Objectives for Health Infrastructure Management

- Rehabilitate and Remodel existing Health Infrastructure
- Strengthen management of health infrastructure
- Establish a system for Supervision, Monitoring and Evaluation of health infrastructure
- Establish a more appropriate and efficient health infrastructure maintenance system

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### Role of the Hospital Manager in Health Infrastructure Management

- Maintain an up to date Asset Register of all Health Infrastructure under his/her control – use HMIS Forms 101 and 102
- Plan for effective and efficient operation and maintenance of Health Infrastructure (supplies, spares, etc)

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### Role of the Hospital Manager – Contd...

- Supervise, monitor and evaluate performance of Health Infrastructure – use HMIS Form 011 (for equipment)
- Develop in-house capacity to manage and maintain health infrastructure – User Training and training hospital based technicians
- Plan for Disposal of old and obsolete Health Infrastructure

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### Role of the Centre in Health Infrastructure Management

- Develop Standards and Guidelines
- Provide advice, technical support supervision, monitoring and evaluation
- Mobilise resources for developing capacity to manage and maintain health infrastructure
- Coordinate capacity building and training

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### Overall Strategy for Health Infrastructure Maintenance

#### Three Levels:

1. **1<sup>st</sup> Line Maintenance –by the users**
2. **2<sup>nd</sup> Line Maintenance – In-house capacity using hospital based technicians & regional workshop**
3. **3<sup>rd</sup> Line Maintenance – out sourcing (from private companies, manufacturers' representatives)**

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### Overall Strategy – Contd...

- A) Physical Health infrastructure (Buildings, Utilities, etc)
- Routine Maintenance – use in-house capacity (i.e. technicians) & out source from private companies
  - Rehabilitation/Renovation – out source
  - Note: The **HID/MoH** is available for technical support & Advice

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### Overall Strategy – Contd...

- B) Medical Equipment (Medical and Hospital plants)
- Routine Maintenance – use in-house capacity & regional workshop
  - Break down Repairs - use in-house capacity, regional workshop & out source if necessary
- Note: Sophisticated equipment – out source from Manufacturer's representative on recommendation of Regional Workshop

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## Medical Equipment Maintenance in Uganda

Case Study carried out by the  
JICA funded IHIMP:  
October 2006 – January 2007

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## Overall Strategy for Routine Medical Equipment Maintenance in Uganda

- Routine Maintenance of Medical Equipment is carried out by Regional Medical Equipment Maintenance Workshops (RWs).
- Eight (8) Workshops currently in place:
  - Central Workshop, Wabigalo – also Referral workshop
  - Mbale Regional Workshop
  - Kabale Regional Workshop
  - Fort Portal Regional Workshop
  - Hoima Regional Workshop
  - Gulu Regional Workshop
  - Soroti Regional Workshop
  - Arua Regional Workshop

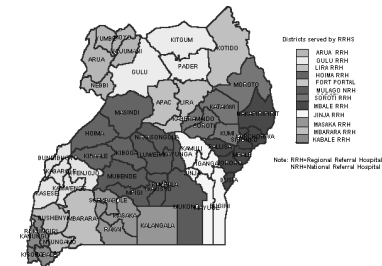
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## Set up and Management of RWs

- All (except Wabigalo workshop) are located in RRHs and are part of the Hospital.
- Managed through a Regional Workshop Management Committee constituted of:
  - Medical Superintendents
  - Hospital Administrators/PNO
  - DHOs, Heads of HSDs
  - Regional User Trainer (Medical Equipment)
  - LCV Secretary Health, CAO.

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Map showing districts served by the Referral Hospitals in Uganda



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## RWs set up – Contd...

- Headed by a Workshop Manager who reports to the Medical Superintendent/Hospital Administrator
- All work plans and budgets for the RWs are prepared by the RW Manager and approved by the RWMC.
- RWs operate a Mobile workshop with a vehicle.
- RWs carry out work in hospitals, HCIVs and DHO's offices for equipment from HCIIIs & IIIs.

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## Financing of RW Activities

- Regional Workshops do not have specific vote or budget line in the RRH budget
- All activities of the RW are funded from Annual Contributions from the RRH, GHs and HSDs served by the RW.
- Annual amounts to be contributed per level are:

RRH	-	UGX 6.5 Million
GH	-	UGX 5.5 Million
HSD	-	UGX 1.0 Million

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## Findings

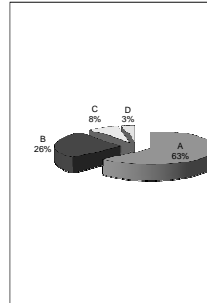
- Only about 43% of available equipment was in good working condition compared to 63% in 2002
- Up to 35% of equipment needed repair/ maintenance
- About 5% of available equipment was not in use although it was in good working condition
- About 22% of available equipment were either very old or broken down and required replacement

**Inventory Data from 10 RHHs and 39 GHs**

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## Equipment Condition in Hospitals

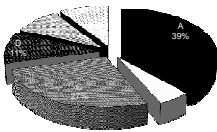
2002



A:	Good Condition
B:	Needs maintenance
C:	Needs replacement
D:	Unknown

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## Equipment Condition in Oct 2006



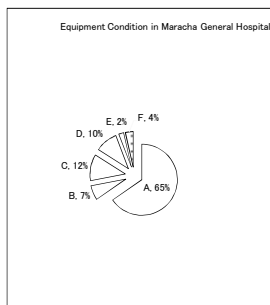
A:	Good and in use
B:	Good but not in use
C:	In use but needs repair
D:	In use but needs replacement
E:	Out of order but repairable
F:	Out of order & needs replacement

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## Equipment Condition in Central Region (Oct. 2006)

Hospital	Equipment Condition					
	A	B	C	D	E	F
Jinja	28%	10%	21%	17%	11%	13%
Kamuli	40%	50%	3%	1%	5%	1%
Kayunga	40%	1%	24%	13%	14%	8%
Masaka	50%	6%	25%	7%	6%	6%
Mityana	16%	8%	29%	20%	15%	12%
Gombe	33%	2%	34%	12%	12%	7%
Mubende	27%	12%	40%	10%	7%	4%
Kawolo	34%	3%	15%	24%	6%	15%
Nakasek	38%	3%	20%	21%	7%	11%
Rakai	32%	2%	26%	22%	12%	6%
Kalisizo	54%	3%	21%	10%	6%	6%

## Equipment Condition in one of the PNFP hospitals (Oct 2006)



- Maracha and Nyapea GHs had comparable data analysis
- Both hospitals have their own technician but often use Arua RW technicians to carry out repairs that cannot be handled by their hospital based technician.

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## Study Conclusions and Recommendations

- There has been decline in routine medical equipment maintenance since 2002 due to poor funding of the RWs
- Method of contributions to the RW by hospitals and HSDs is not sustainable because it is cumbersome to collect the money and its availability is not guaranteed.
- RWs should be funded directly with a specific vote/budget line within the RRH Budget.

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## Challenges

- Local Capacity to maintain medical equipment still needs to be improved
- Operation and Maintenance Budgets are very small at all levels especially HCs
- Inventory taking should be enhanced and data collected should be the basis for planning for O&M costs
- Health sector planners have not yet appreciated the linkage between quality of health care and equipment operational condition – should be part of league table performance indicators.

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## Conclusion

- Health Infrastructure Management needs to take its proper position in the planning process to ensure quality health care and delivery of health services
- Equipment Maintenance is a key Managerial responsibility for Facility Managers which should not be neglected.

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I thank you for  
your attention

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