


# **BACKGROUND / INTRODUCTION**

- 
- **ZAMBIA IS A LAND LOCKED COUNTRY WITH POP. 10.3 MILLION PEOPLE**
  - **IT HAS LARGE AREA COVERING 752 000 SQUARE KILOMETERS**
  - **ADMINISTRATIVELY IT IS DIVIDED INTO 9 PROVINCES & 72 DISTRICTS**
  - **IT HAS AN ANNUAL GROWTH RATE OF 2.9%**



**MR. TEMBO HAS BEEN SLEEPING UNDER A  
TREE NEAR THE UNIVERSITY TEACHING HOSPITAL  
FOR ONE MONTH TRYING TO SEE A DOCTOR**



**WOMEN CAMPING UNDER A TREE WAITING FOR THEIR PATIENTS TO BE SEEN BY A DOCTOR. SOME HAVE BEEN HERE FOR OVER TWO MONTHS**




**UNIVERSITY TEACHING HOSPITAL –  
SELECTED AS THE MAIN TELEMEDICINE**



**MINISTRY OF HEALTH HQ**

## **BACKGROUND CONT..**

- 
- **LIFE EXPECTANCY OF 40 YRS**
  - **MOST POPULATION IS CLUSTERD ALONG THE LINE OF RAIL –(HIGHLY URBANISED DUE TO ECONOMIC ACTIVITIES**
  - **DISPERSAL OF THE POPULATION WITH HIGH RATES OF URBANISATION HAS MADE IT DIFFICULT TO DELIVER HEALTH CARE SERVICES ACROSS THE COUNTRY**



# **HEALTH REFORMS**

**THE LAST DECADE HAS SEEN MAJOR RE-ORGANISATION UNDER THE HEALTH SERVICES**

**GOVERNMENT COMMITMENT TO THE  
OBJECTIVE OF IMPROVING QUALITY OF LIFE**

**IN 1999 HEALTH REFORMS WERE INTRODUCED  
IN ZAMBIA**

**AIM - WAS TO TRANSFORM THE HEALTH  
SECTOR INTO AN EFFICIENT HEALTH CARE  
SYSTEM THAT GUARANTEED EQUITY OF  
ACCESS TO COST EFFECTIVE HEALTH CARE AS  
CLOSE TO THE FAMILY AS POSSIBLE**

**THIS WAS DONE THROUGH THE DECENTRALIZAION  
PROCESS**

# HEALTH FACILITIES IN ZAMBIA



<b>HEALTH FACILITIES</b>	<b>NUMBER</b>
<b>CENTRAL HOSPITALS</b>	<b>03</b>
<b>GENERALS HOSPITALS</b>	<b>18</b>
<b>DISTRICT HOSPITALS (INCLUDING MISSION HOS.)</b>	<b>72</b>
<b>RURAL HEALTH CENTRES</b>	<b>899</b>
<b>URBAN HEALTH CENTRES</b>	<b>187</b>
<b>HEALTH POSTS</b>	<b>MANY</b>
<b>MILITARY HOSPITAL</b>	<b>01</b>
<b>INDUSTRIAL HOSPITALS</b>	<b>08</b>
<b>PRIVATE HOSPITALS/CLINICS</b>	<b>MANY</b>



# **CONSTRAINTS**

**LIMITED FINANCIAL RESOURCES HAVE  
CONSTRAINED THE GOVT'S EFFORTS  
IN ACHIEVING THE DESIRED OBJECTIVES**

---

**SCARCITY OF SPECILIZED HEALTH STAFF  
HAS MADE DIFFICULT TO EFFECTIVELY  
DELIVER HEALTH CARE SERVICES**

**SKEWED DISTRIBUTION OF HEALTH STAFF**

**HIGH ATTRITION RATE (BRAIN DRAIN)**

**HIGH COST OF REFERRALS**



# **CONSTRAINTS CONT/D**

**LONG DISTANCES TO ACCESS HEALTH CARE**

---

**DIFFICULT TERRAINS CREATE MAJOR  
PROBLEMS FOR AN EQUITABLE  
HEALTH CARE DELIVERY.**



# **TELEMEDICINE PROGRAMME**

**IN VIEW OF THE CHALLENGES ABOVE  
TELEMEDICINE HAS BEEN IDENTIFIED AS  
AN INNOVATION FOR BRIDGING THE  
GAP IN MANY AREAS OF INTERVENTION**

---


**TELEMEDICINE IN SHORT CAN BE DESCRIBED  
AS, “ PRACTICING MEDICINE FROM  
A DISTANCE ”**



## **TELEMEDICINE CONT..**

---

**THIS CAN BE DONE BY LINKING  
EXPERTS AT THE CENTRE OF  
EXCELLENCE WITH DISTANTLY  
LOCATED PATIENTS AND PRIMARY  
HEALTH CARE PROVIDERS/CONSUMERS**



**TELE- HEALTH IS A TECHNOLOGY  
THAT IF IMPLEMENTED WITH AN**  

---

**EQUITY FOCUS COULD PROMOTE  
HEALTH EVEN IN UNDERPRIVILEGED  
AND REMOTE SETTINGS**



## **APPOINTMENT OF TELE-HEALTH COMMITTEE**

**IN 2003 THE GOVERNMENT THROUGH MOH APPOINTED MEMBERS FROM VARIOUS INST.TO SET UP THE NATIONAL TELEMEDICINE STEERING COMMITTEE.**

---

**MANDATE – SPEARHEAD THE ESTABLISHMENT OF TELE-HEALTH ACTIVITIES IN THE COUNTRY AND INTEGRATE IT INTO THE GENERAL HEALTH POLICY**

**SINCE THEN THE COMMITTEE HAS HELD SERIES OF MEETING WITH VARIOUS KEY STAKEHOLDERS SUCH AS DOCTORS, RAD. ICT BODIES,TELECOMMUNICATION AGENCIES**

# **SITES**



**THE STARTING POINT WAS THE  
SELECTION OF SIX PILOT SITES  
UNDER A PHASED**

---

**IMPLEMENTATION SYSTEM**

**SITES –**

**MUMBWA, KABWE, CHAINAMA,  
CHIPATA, CHONGWE AND UTH**



# **CRITERIA FOR SITE SELECTION**

√ **AVAILABILITY OF TECHNOLOGY**

---

√ **FAR REACHING AREAS**

√ **HOSPITALS WITH VERY COMPLICATED CASES**

√ **HOSPITALS WITH HIGHER CATCHMENT  
POPULATION - DECONGESTION**



## **ACHIEVEMENTS SO FAR**

**FOUR SITES HAVE BEEN ASSESSED FOR PHYSICAL INSTALLATION OF THE SYSTEM AND SENSITIZATION OF THE STAFF ON THE PROGRAMME HAS BEEN CONDUCTED**

---

**IDENTIFICATION OF PERSONNEL TO BE TRAINED HAS BEEN DONE IN THE FOUR SITES VISITED**

**RECOMMENDATIONS HAVE BEEN MADE TO CONNECT THE FOUR SITES FOR TELE-CONSULTATION ON COMPLICATED CASES AND TELE-RADIOLOGY AND TELE-DERMATOLOGY CASES**



# **STUDY TOUR TO SOUTH AFRICA**

**WITH THE PURPOSE OF SHARING EXPERIENCES  
WITH SOUTH AFRICA ON RECENT DEVELOPMENT  
IN TELEMEDICINE AN EXTENSIVE STUDY TOUR  
WAS MADE IN FEBRUARY 2005**

**VISITS WERE MADE TO THE DEPT. OF HEALTH,  
CENTRAL GOVERNMENT AGENCIES  
LIKE SITA, MRC, TO UNIVERSITIES, LOCAL,  
PROVINCIAL AND TERTIARY HOSPITAL,  
NGOS AND PRIVATE ENTERPRISE**



# **STUDY TOUR CONT..**

---

**ALMOST EVERY INSTITUTION VISITED THE  
COMMITMENT TOWARDS COLLABORATION  
BETWEEN ZAMBIA AND SA WAS SINCERE  
AND FAR REACHING**

**-STRONG PERCEPTION OF NEW PARTNERSHIP**



# **OUTCOMES FROM THE STUDY TOUR**

**SA HAS EMBARKED ON T/M ACTIVITIES WHOSE MAIN TO BRIDGE THE GAP BY PROVIDING HIGH QUALITY SERVICES.**

---

**MRC ENDEAVOURS TO APPLY OF TECHNOLOGY**

**TECHNOLOGY, STANDARDS, PROTOCOLS, ETHICS  
TELE-EDUCATION, CLINICAL SERVICES AND  
SOCIAL SERVICES AND RESEARCH**

**SOUTHERN AFRICA NETWORK WOULD INDEED  
OFFER OPPORTUNITIES FOR EXCHANGE OF  
EXPERTISE BETWEEN COUNTRIES PARTICIPATING  
IN THE NETWORK**



**MR. COLLINS CHINYAMA**

---

**NATIONAL TELEMEDICINE CO-ORDINATOR  
COMPUTER SOCIETY OF ZAMBIA  
( VICE PRESIDENT )**

**[collins@cboh.org.zm](mailto:collins@cboh.org.zm)**

**[collinsch2000@yahoo.com](mailto:collinsch2000@yahoo.com)**

**TEL : +260-1-253179**

**FAX : +260-1-253173**

**CELL : +260-95-751051**

# **E-LEARNING ON RADIOLOGY AT UNIVERSITY TEACHING HOSPITAL**

**( ACHIEVEMENT CONT/D )**

**E-LEARNING PROGRAMME ON RADIOLOGY AT  
UTH LINKED TO FONTYS UNIVERSITY OF  
NETHERLAND.**

**RADIOGRAPHY STUDENTS FROM EVELYN HONE  
ARE ALREADY USING E-LEARNING  
PROGRAMME AT UTH.**

**BONES OF ALL KINDS**

**X-RAYS OF VARIOUS TYPES**



**DEMONSTRATIONS HAVE ALSO BEEN DONE  
AND RECOMMENDATIONS HAVE BEEN MADE  
TO CONNECT THE FOUR SITES FOR  
TELE-CONSULTATION ON COMPLICATED  
CASES AND RADIOLOGY CASES**

---

**LAN**

- **CISCO AIRONET 350 WIRELESS  
BASE STATION**
- **CISCO WIRELESS CARDS**
- **WEB CAMS**
- **WITH HEAD PHONES**

**NETMEETING SOFTWARE**



# **TELE – HEALTH VISION FOR ZAMBIA**

---

**TRANSMISSION** OF LIVE VIDEO AND VOICE

**TRANSMISSION** OF DATA

**TO HAVE A REALTIME REMOTE  
CONSULTATION SYSTEM WHERE A  
DOCTOR CAN TALK AND SEE THE  
PATIENT.**



## **VISION FOR ZAMBIA CONT..**

---

**TRANSMISSION OF IMAGES AND X-RAYS FROM REMOTE SITES TO THE MAIN CENTRES AS WELL AS AN E-LEARNING SYSTEM WHERE A SPECIALISED LECTURER OFFERS A LECTURE TO SEVERAL STUDENTS LOCATED IN DIFFERENT PLACES**



---

**GENERAL TECHNOLOGIES  
AVAILABLE IN THE WORLD  
THAT CAN BE USED IN ZAMBIA**



# **WIRELESS:-**

- ≈ **WLAN /WIFI (SHORT DISTANCES, EXTENDING WIRED NETWORKS)**
- ≈ **VSAT (MOSTLY FOR REMOTE LOCATIONS BUT VERY COSTLY)**
- ≈ **MICROWAVE (MAINLY FOR BACKHAUL BY OPERATORS)**
- ≈ **LASER (<3KM)**



## **WIRED:-**

- **DSL (LEASED LINES)**
- **DIAL-UP (POTS)**

---
- **LAN (UTP CAT 5/6 etc)**
- **FIBRE (WIRED / LIGHT)**
- **ETHERNET OVER POWER LINES  
(NOT COMMON)**
- **MODEM (STORE AND FORWARD)**



# **TECHNOLOGY RECOMMENDED** **FOR EACH SITE**

---

- » **UTH – MAJOR RECEIVING SITE**
- » **LAN ( 15 points )**
- » **DIGITAL SUBSCRIBER LINE (DSL)**
- » **wi Fi**
- » **DAIL UP - AS BACK UP**



## **CHAINAMA - MAJOR TRAINING CENTRE**

- **SHOULD HAVE A LAN ( 3 POINTS )**
- **DSL**
- **WIFI**
- **DAIL UP - AS BACK UP**

## **MUMBWA – REMOTE SITE**

- **DSL ( DIAL ON DEMAND )**
- **DIAL UP AS BACKUP**



# **KABWE – REMOTE SITE**



**150KM FROM MAIN CENTRE**

- **LAN ( 3 POINTS )**
- **DSL ( DIAL ON DEMAND )**
- **DAIL UP AS BACK UP**



# **CHIPATA – REMOTE SITE**

---

**500KM FROM MAIN CENTRE**

- **LAN 4 POINTS )**
- **DSL ( DIAL ON DEMAND )**
- **DIAL UP AS BACKUP**



# **LUNDADZI – REMOTE SITE**



**650KM FROM MAIN CENTRE**

- **LAN ( THREE POINTS )**
- **DSL ( DIAL ON DEMAND )**
- **DIAL UP - AS BACKUP**



# **EQUIPMENT NEEDED**

---

- **COMPUTERS**
- **SWITCHES ( 2950 )**
- **ROUTERS**
- **LASER COLOUR PRINTERS**
- **X-RAY LASER SCANNERS**
- **DIGITAL STILL CAMERAS**
- **DIGITAL CAMCORDERS**
- **IP CAMERAS**
- **IP PHONES ( VOIP )**



# **INFRASTRUCTURE**

---

- **REHABILITATION**
- **PROCUREMENT OF FURNITURE**



## **FUNDING (Budget)**

---

**THE PROPOSED BUDGET  
IS US\$500, 000 FOR  
ALL THE SIX SITES**



# **CONSTRAINTS**

---

## **Funding**

**Most of the equipment that can be used in our telecom infrastructure is expensive**

## **Training**

**Very few medical personnel have computer competence**

**Too many competing health demands : HIV/AIDS**

**Uneven distribution of telecommunications infrastructure**



## **APPEAL**

**ZAMBIA NEEDS TELEMEDICINE MUCH  
MORE THAN OTHER COUNTRIES BECAUSE  
OF THE NUMEROUS HEALTH CHALLENGES.  
WE APPEAL FOR FUNDING OF THIS NOBLE  
PROJECT. ALL THE FUNDERS ARE NOW  
CONCENTRATING THEIR EFFORTS ON  
HIV/AIDS, TB AND MALARIA.**

