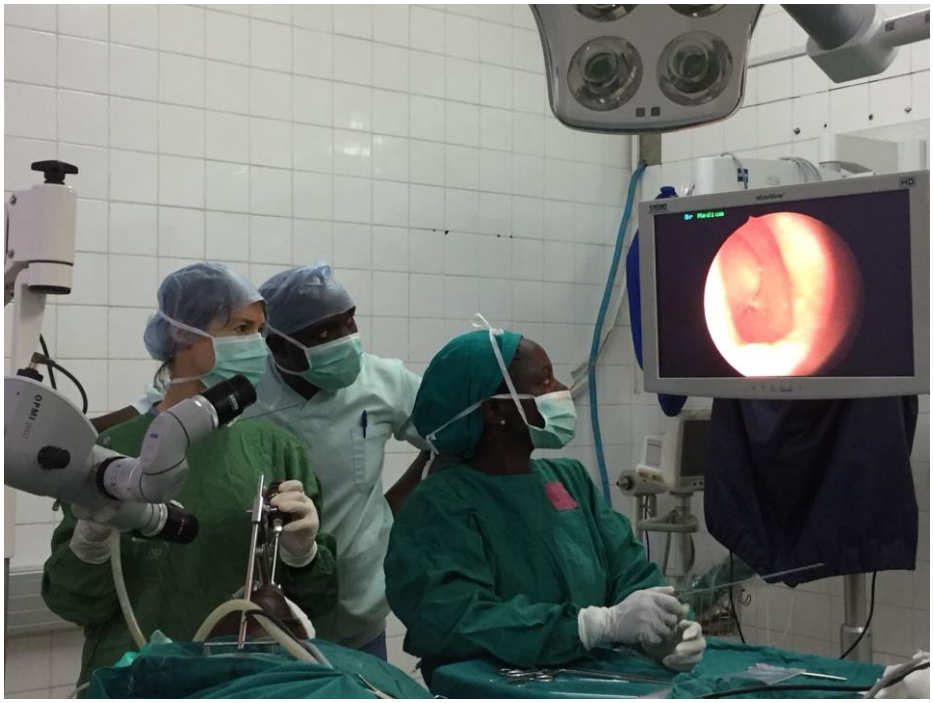
Rwanda legacy of Hope UMURAGE W'IBYIRINGIRO

OPERATION HERNIA

RWANDA LEGACY OF HOPE

OPERATION HERNIA MISSION

MARCH 16-25, 2018



COMBINED REPORT

Authors

1. **Chris Oppong. Consultant Surgeon**
2. **Kate Heathcote. Consultant ENT Surgeon**
3. **Samiul Muquit. Consultant Neurosurgeon**

CHRIS OPPONG
CONSULTANT SURGEON
MEDICAL DIRECTOR, RLOH
CHAIRMAN OPERATION HERNIA

Rwanda legacy of Hope UMURAGE W'IBYIRINGIRO

OPERATION HERNIA

TABLE OF CONTENTS

Rwanda legacy of Hope UMURAGE W'IBYIRINGIRO

OPERATION HERNIA

1. INTRODUCTION

1.1This is a combined report on RWANDA LEGACY OF HOPE / OPERATION HERNIA Mission to Rwanda from March 16-25, 2018. This report will summarise the activities of the 3 specialties in the Team: Hernia Training, ENT and Neurosurgery.

1.2 Detailed Specialty Report

The detailed Specialty reports will be attached to this combined report as Annexes A, B, and C.

1.3 **The RWANDA LEGACY OF HOPE and OP HERNIA Partnership** has served the people of RWANDA in the health sector for 6 years. We are thankful and honoured to be given the privilege to serve the people of RWANDA. We would like to express our sincere gratitude to President Kagame for the welcome we have always received in the country. We would also like to thank Hon Diane Gashumba for her personal support and for the for the unparalleled support that we receive from the Ministry of Health. In the Acknowledgement section I will list all the individuals who have helped us achieve the successes we have recorded.

2. Achievements Over Past 6 Years

The health sector of RLOH has celebrated the following successes since our first visit in 2012.

2.1. **Hospitals Visited**: We have worked in the following 8 Hospitals: NYAMATA, Remera-Rukoma, GAHINI, Kibogora, Kigeme, Rwamagana, CHUK and now, SHYIRA Hospital on 48 occasions

2.2. **Patient Numbers**: We have offered essential, surgery to over 800 patients.

2.3. **Volunteers:** There have been over 100 volunteer episodes. Volunteers have come from mainly the UK and GERMANY but also from Austria. Each of the volunteers have funded their flights to RWANDA. In the early years they also paid for accommodation and subsistence. Since 2016 the Min of Health has magnanimously sorted out the logistics of our stay in Kigali. We are extremely grateful. We have always been catered for in the districts hospitals.

2.4. **Surgical Specialties**: Our early missions concentrated on Hernia Surgery. We have now expanded our remit to meet the needs of the Rwandan people. Our later missions have therefore included Plastic Surgery, Orthopaedics and ENT Surgery. This year has been ground breaking. For the first time we have a Neurosurgical team. All these specialist teams have worked at CHUK.

2.5. **Provision of Hospital Equipment**: RLOH has provided Rwandan Hospitals with equipment worth over £200.000 (RWF 230 million). The equipment ranges from routine

surgical instruments to theatre tables and air conditioners fitted in theatre. In 2016, one theatre in Rwamagana was equipped as a training centre.

2.6. **Training of Junior doctors**: Training is now a major plank of RLOH mission. It builds capacity for delivery of surgical services. We have trained local doctors in every district hospital we have worked in. In 2016 we had our first specifically organised Hernia Course. This comprised a series of lectures to provide a theoretical basis followed by intensive one to one training in theatre. In 2017, we were invited by CHUCK to train their first-year surgical residents in Hernia Surgery. 13 surgical residents were successfully trained.

We have followed that up with a similar course at SHYIRA Hospital on this mission. It is hoped that we will return in 2019 to CHUK to train the next batch of surgical residents.

3. 2018 MISSIONS

Two missions have been scheduled for this year- March 2018 and September 2018. The former has involved ENT, NEUROSURGICAL and GENERAL SURGICAL TEAMS. The September mission will involve Plastic Surgery and Orthopaedic teams.

4. MARCH 2018 MISSION

The just concluded March 2018 mission comprised 3 teams. CHUK welcomed one ENT Consultant and a Neurosurgical team which included 1 Consultant Neurosurgeon, a consultant Anaesthetist and a Neurosurgical senior Theatre nurse. The third team was a hernia team that went to SHYIRA HOSPITAL. It is our first mission to northern RWANDA. The team comprised 2 consultant Surgeons, a consultant Anaesthetist and a theatre nurse.

5. The Teams

Table 1

	NAME	DESIGNATION	TEAM	VISITS
1	Mr Chris Oppong	Cons Surgeon	HERNIA	2011-2017
2	Mr David Sedgewick	Cons Surgeon	HERNIA	2016, 2017
3	Dr Peter Stoddart	Cons Anaesthetist	HERNIA	2016, 2017
4	Leah Thorpe	Nurse	HERNIA	
5	Mr Samiul Muquit	Cons Neurosurgeon	NEUROSURGERY	2018
6	Dr Lorenzo Dimpel	Cons Anaesthetist	NEUROSURGERY	2016
7	Della Ball	Nurse	NEUROSURGERY	2016, 2017
8	Miss Kate Heathcote	Cons ENT Surgeon	ENT	2018
9	Dr Ella Bennett	Medical Student	Self-Funded Accommodation	

6. Hospital Equipment

Every year RLOH / OP HERNIA donates equipment to the various hospitals we visit. I would like to acknowledge the support we have had from the Ministry of Health with customs clearance. This year's equipment is worth **£8919.71 (RWF 10, 211, 476.54).** This comprised 6 sets of Hernia surgical Instruments, Neurosurgical Instruments, Anaesthetic drugs and Anaesthetic equipment. I have attached the full list as Annex D

7. Accommodation, Food and Transport

The team had excellent accommodation. The team was very well looked after. The food was of top quality and transportation was good. We would like to record our deepest gratitude to **The Government of Rwanda** and to the **Ministry of Health** for the extremely generous hospitality

7. SUMMARY OF SPECIALTY REPORTS

7.1 SHYIRA HERNIA COURSE AT SHYIRA HOSPITAL

I would like to commend the Director General of Shyira Hospital, Dr Theoneste Rubanzabigwi, for organising a successful training course for both the Trainees and the Trainers.

6 doctors were selected for training. 2 withdrew. 4 doctors were enlisted for the training programme which consisted of the ff:-

1.Lectures on relevant aspects of Hernia Surgery (1 Day)

2.Intensive 5-day hands on practical training in theatre.

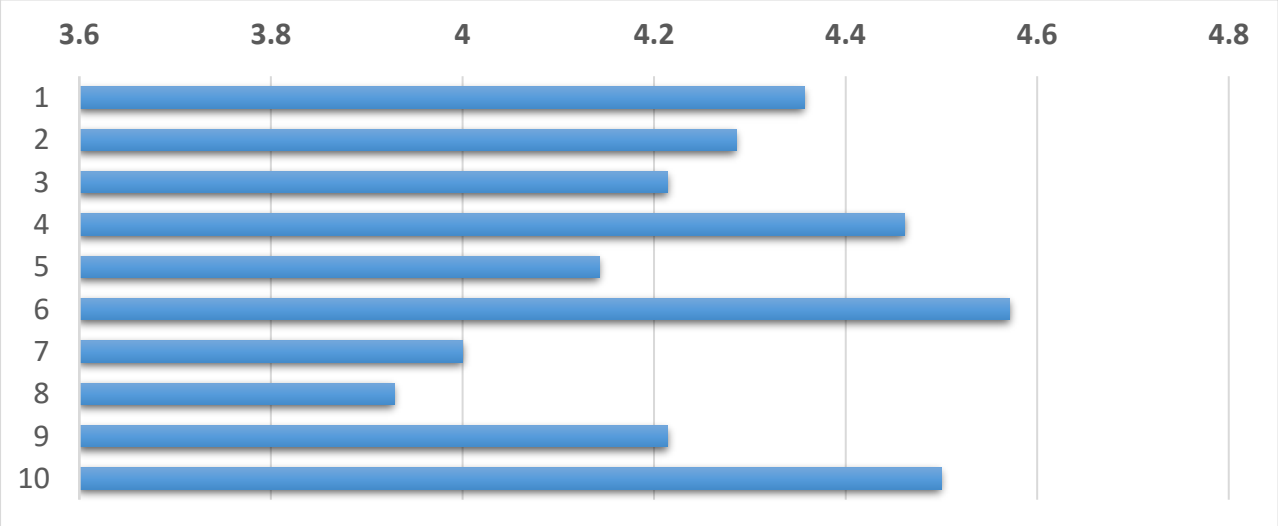
The published OPERATION HERNIA TRAINING FORMAT was used for the hands-on theatre training. This has been used at CHUK in 2017 and has been used on two COSECSA Training courses. At the end of the course the competency of the 4 trainees were assessed by the Trainers using the Competency Assessment tools used by the Royal Colleges in the UK

8.0 Feedback from lectures

Feedback from the lectures was very good as shown in Fig 1.

Scores ranged from 76% to 91%

Fig 1



9. RESULTS: ASSESSMENT OF KNOWLEDGE OF HERNIA SURGERY

An assessment of the knowledge of the trainees on the various aspects of hernia surgery was carried out before and after the lectures. Overall scores improved from 4 to 8 Assessment of knowledge of specific hernia surgery topics also produced similar significant improvement.

Fig 2

Overall Assessment of knowledge of hernia repair

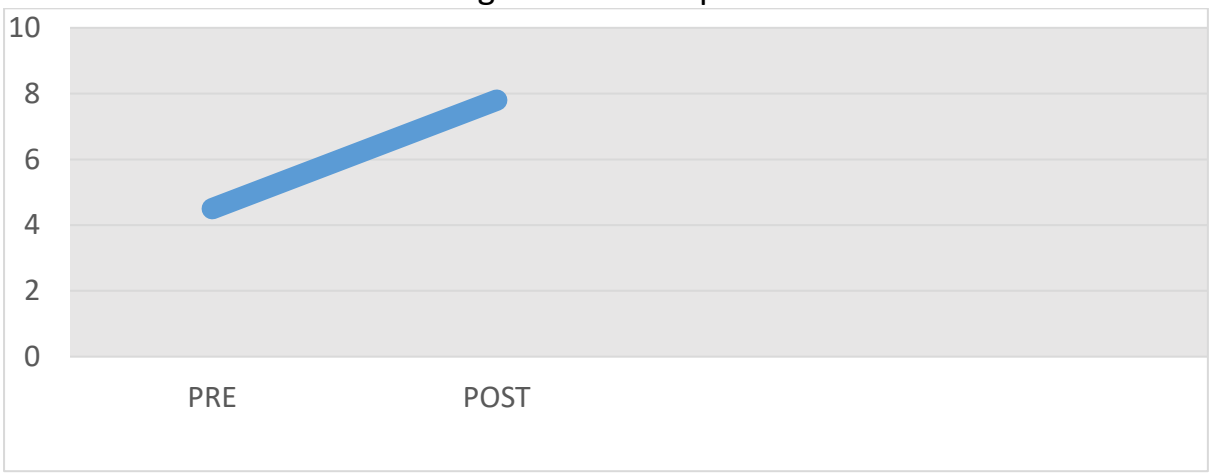


Fig 3: Knowledge of Individual Aspects of hernia Surgery Pre and Post Course
This shows the detail of the responses

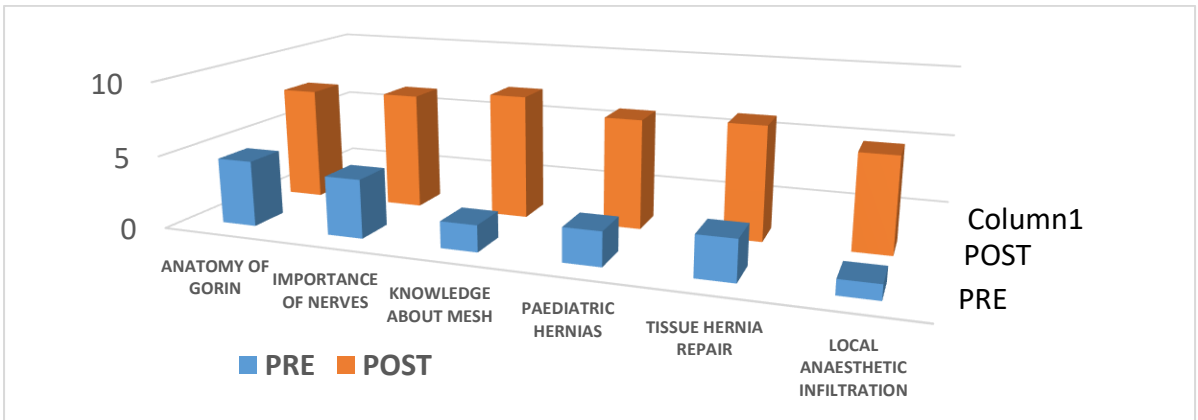
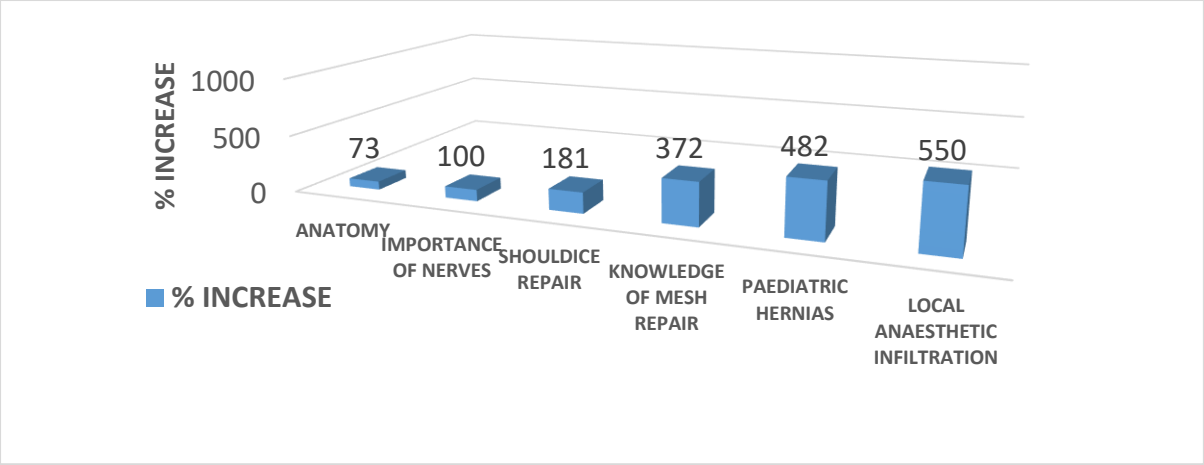


Fig 4
Percentage Improvement in Knowledge of Hernia Surgery



10. ASSESSMENT OF SURGICAL COMPETENCE OF TRAINEES BY TRAINERS

At the end of the 5 days of training, the competence of the trainees was assessed. The assessment tools developed and employed by the UK Royal Surgical Colleges were adopted for this training programme. The 4 trainees were assessed as follows: -

Table 2: Trainers Assessment of Surgical Competence

LEVEL	COMPETENCE	Small hernias	Large Hernias
Level 1	Unable to Perform procedure	0	0
Level 2	Able to Perform Aspects of the procedure	0	1
Level 3	Able to Perform Procedure with Supervision	1	2
Level 4	Able to Perform with minimal supervision / Occasional Help	2	1
Level 5	Able to perform independently	1	0

10.1. COMMENT ON TRAINEES' COMPETENCE

1. At the end of the programme, all trainees were able to perform mesh hernias repair of small hernias with various degrees of supervision. One trainee was judged able to perform hernia repair without supervision. ***This is a major achievement because the majority had no personal experience of Hernia Surgery***

11. OPERATIONS PERFORMED AT SHYIRA HOSPITAL
Total Number of Cases: **32**
Total Number of Children: 15 **(47%)**

Table 4 Operations Performed

OPERATION	NO OF CASES
INGUINAL HERNIA REPAIR	15
UMBLICAL HERNIA REPAIR	2
HYDROCOELE OPERATION	13
MISCELLANEOUS OPERATIONS	2
TOTAL	**32**

12 AWARD OF TRAINING CERTIFICATE OF PARTICIPATION

Certificates were awarded to the Trainees at a closing ceremony.

13. SUCCESSES

1.Training in Hernia Surgery: 4 doctors in district hospitals have been trained by experienced Consultant surgeon Trainees to a high standard of competency. The majority had no personal experience of hernia surgery as already documented. When they are well established will reduce the number of referrals of groin hernias to CHUK

2. **Training in Basic Surgical Skills**: Knot tying

3. **Service to Patients**: 32 patients including 15 children have has surgical operations for which they would have been referred to CHUK for surgery

4. **Good Feedback:** Very good feedback from Trainees regarding Hernia Lectures and Theatre Training.

5. **Improvement in Theatre Safety**: The UK theatre nurse, Leah Thorne, introduced theatre staff, to
5.1. Time and Theatre management
5.2. Theatre safety measures, which were adopted by theatre staff: -
WHO Safety Protocol
Instrument Counting.
Handling of Sharps

14. CHALLENGES

1.**Breakdown of Autoclave.**
The theatre autoclave broke down during the training week. This undoubtedly hampered the training of doctors. The industry of the theatre lead nurse enabled us to use a mini autoclave for the rest of the week

2. **Availability of Nurses**
There are inadequate numbers of nurses on the wards, particularly, at night. This affects the safety of patient in the postoperative period. This was worsened when ward nurses were drafted to support theatre staff for the Training Programme.

15. RECOMMENDATIONS FROM HERNIA TEAM AT SHYIRA HOSPITAL

1. Further Training
Further training will improve competence levels. It is therefore proposed that a subsequent course be organised for the trainees. Operation Hernia has provided pre-sterilised affordable polypropylene mesh for further training. This will help upgrade their competence to level 5 competence.

2. To Increase Nursing Staff Numbers

3. Theatre Facilities: Air Pump should be introduced into Theatre. This will reduce the constant use of Oxygen system which is expensive and potentially harmful to patients undergoing general anaesthetic

4. **Regular Maintenance of Autoclave**. This will avoid the unfortunate breakdown which did adversely affect the training.

5. Maintain the New Theatre standards: Theatre staff should maintain the new safety measures they have learnt.

16. ENT SURGERY AT CHUK

16.1 Introduction

This is the second ENT RLOH Mission to CHUK. The mission was undertaken by Dr Kate Heathcote, UK ENT Consultant Surgeon. We did not have on the mission dedicated ENT Anaesthetist and Theatre nurse.

The full report is attached as Annex B. The reports will be provided to the local ENT team, the head of Surgery and the CHUK Medical Director.

Dr Heathcote assessed the patients before their operations and has made some very important observations which will help improve the CHUK ENT service.

A lot of very complex cases were performed. Several cases lasted several hours and the team always left theatres very late. Apart from the complexity of the cases, there were several other important factors which led to prolongation of theatre time.

16.2 Theatre Cases

No of cases: 10: Most Cases were complex Major

The magnitude of the work done in these ENT cases should not be assessed by the sheer NUMBER of cases done. What should be considered is the complexity of cases and the experience and skill of the surgeon. Dr Kaitesi's departure has impacted the ENT department significantly.

DIAGNOSIS	OPERATION	COMMENT
1.Laryngeal Tumour	Laryngectomy, bilateral neck dissection and right hemithryoidectomy	Required re-staging preop
2.CSOM with Cholesteatoma	Left Radical Mastoidectomy	Erosion of Cholesteatoma
3.Tracheal Tumour	Direct laryngoscopy and endoscopic debulking of tracheal tumour	1.Lack of appropriate instruments
4.Tracheal Stenosis	Endoscopic balloon dilation of tracheal stenosis	
5.CSOM with Cholesteatoma	Right Radical Mastoidectomy	Extensive disease. Erosion of Facial Nerve. Previous Meningitis due to disease
6.Requiring Tympanosplasty	Tympanoplasty converted to Radical Mastoidectomy	1.Undiagnosed Cholesteatoma 2.No pre-op CT

7. Aspergilloma of the Sphenoid sinus	Endoscopic Sinus Surgery for Aspergilloma	No Microdebrider available
8.Tracheal Stenosis	Balloon Dilation	1.Appropriate Laser instrument unavailable at CHUK
9.Laryngomalacia causing difficulty in breathing	Aryepiglottopexy.	Premature born
10. CSOM with Cholesteatoma	Right Radical Mastoidectomy	1.Erosion of bone. 2. Facial Nerve exposed and inflamed.

16.3 Crucial Observations and Recommendations from ENT

1. There is a lack of experience in the senior ENT staff at CHUK, this has been exacerbated by the recent departure of their most experienced surgeon. The abilities of the senior doctors naturally dictates the effectiveness of the department as a training centre for junior doctors and medical students. **As the University Hospital in the capital city, the capabilities of the senior doctors is fundamental. Investment in their training should be of the highest consideration.**
2. There is a shortage of quality instruments, microscopes, lasers, and microdebriders required for high quality, advanced ENT surgery.
3. The operating table is inadequate for long procedures
4. The intensive care unit is not experienced in the care of major head and neck cases.
5. Post operative care is sub-optimal. The supply of free tracheostomy tubes is minimal. The patients have to buy their own intraoperative and post-operative medication and topical drops/ointments. There is no service for speech rehabilitation with valves or servox devices after laryngectomy.
6. The aim of a radical mastoidectomy is to get rid of the cholesteatoma disease that causes destruction of local structures with a risk of facial palsy, hearing loss, vertigo, meningitis, septicaemia and intracranial abscesses. Once the disease is cleared the resultant cavity needs regular cleaning. I am not confident that this will occur.
7. There was a shortage of qualified anaesthetists.
8. There is no culture of using scrub nurses to assist surgeons. This would make the surgery faster.

17. NEUROSURGERY AT CHUK

17.1 Introduction

We are very proud to record that this is the first Neurosurgery RLOH Mission to CHUK. The mission was undertaken by Mr Sam Muquit, Consultant Neurosurgeon, Dr Lorenzo Dimpel, Consultant Anaesthetist and Della Ball Senior Neurosurgery Theatre Sister.

The full report is attached as Annex C The reports will be provided to the local Neurosurgical team, the head of Surgery and the CHUK Medical Director.

17.2 The Local Team and Their Huge Workload

The RLOH team worked with 2 CHUK Neurosurgeons, Dr Muneza and the recently appointed Dr Hitimana. "The two neurosurgeons are highly skilled and provide the full spectrum of neurosurgical procedures in adults as well as children". They however have an impossible work load because they serve the whole of Rwanda. They are therefore limited to operating on mostly emergency cases. This has led to a mounting waiting list. Some patients have developed complications from their brain pathology whilst waiting on this long waiting list. The RLOH Mission was therefore an invaluable opportunity to help desperate patients with Brain pathology.

17.3 Intensive Care

Overall, the intensive care department provided an excellent level of post-operative care.

17.4 CASES

Like the ENT cases, numbers of cases were not great. This is because the Neurosurgical cases, like ENT cases, were very complex. ***Given the complex nature of the cases each operation took between 8 and 10 hours.***

17.5 Total Number of Cases: 5

One case performed per day because of the duration of Operation

DIAGNOSIS	OPERATION	COMMENT
1.Large tuberculum sellae meningioma causing compression of optic chiasm	Right pterional craniotomy for resection of tuberculum sellae meningioma	Patient presented with Acute Loss of Vision

2.Large cerebellopontine tumour was causing compression of the left cerebellar hemisphere and brainstem.	Left retrosigmoid craniectomy for resection of tumour	Extension to compress the left cerebellar hemisphere and brainstem. Pt unable to stand unaided or walk.
3.Large right vestibular schwannoma	Right retrosigmoid craniectomy for debulking of vestibular schwannoma	Cerebellar and brainstem compression.
4. Pituitary adenoma	Left pterional craniotomy for resection of giant pituitary adenoma	Acromegaly
Recurrent Large Pituitary Tumour	Redo left pterional craniotomy for debulking of tumour	Extension into the suprasellar cistern, with compression of the optic chiasm and left optic nerve.

17.6 Crucial Observations and Recommendations from NEUROSURGICAL TEAM

1.Improvement In Pre-Visit Communication

Before the mission communication between myself and Dr Muneza was easy and clear. An improvement for future mission may be to exchange scan images, allowing for more precise planning of surgical time. A challenge to this is that patients carry 'hard copies' of their scans, which are not available on a computer PACS system.

2. Improvement of Theatre Access

Easier daily access to theatre for the neurosurgical team in CHUK would help management of emergency cases. This may result in fewer elective case cancellations.

3. Early surgery To Avoid Severe Complications

Early surgical treatment of neurosurgical conditions, before development of severe neurological deficit will result in a better post-operative prognosis.

4. Better Anaesthetic Support.

Anaesthetic support for complex neurosurgical cases with consultant anaesthetist support would reduce risks of complications during surgery.

5. Essential Neurosurgical Instruments

Availability of a second Mayfield head rest and microinstruments would make surgery safer and more efficient. A second operating microscope would allow efficient concurrent running of two neurosurgical theatres.

6. Improve Theatre Doors

Finally, a very simple recommendation: Installation of operating room doors which can be closed may reduce the risk of post-operative infections.

18. ACKNOWLEDGEMENT AND GRATITUDE

1. Dr Diane Gashumba , Minister of Health for officially inviting the RLOH team and seconding **Dr Colonel Zuberi Muvunyi**, Director General of Clinical and Public Health Services and **Nathalie Umutoni**, Director of Health Policies and Regulation. Min of Health. to assist, support and advice the RLOH team.

2. **Dr Théoneste Rubanzabigwi** for organising a very successful Training Workshop.

3 The Government of Rwanda arranged Medical and Nursing Registration for the RLOH Medical Team.

4 The Government of Rwanda waived all Custom and Clearance costs for medical equipment imported by RLOH

5 The Government of Rwanda provided high quality accommodation for RLOH team during their stay in Kigali. Shyira provided very good accommodation for the Shyira team

6. Other Acknowledgement

1	Dr Colonel Zuberi Muvunyi	Director General of Clinical and Public Health Services
2	Dr Nathalie Umutoni,	Director of Health Policies and Regulation. Min of Health. Rwanda
3	Dr Theobald Hategekimana,	Medical Director, The Univ Teaching Hospital, Kigali. Rwanda (CHUK)
4	Dr Martin Nyundo	Deputy Director, CHUK
5	Dr Faustin Ntirenganya	Head of Surgery, CHUK
6	Dr Isaie Ncogosa	Head of ENT, CHUK
7	Dr Muneza Severien	Head of Neurosurgery ,CHUK
8	Dr Hitimana	Cons Neurosurgeon
9	Dr Théoneste Rubanzabigwi	Medical Director, SHYIRA Hospital
10	Pastor Osee Ntavuka	Director and Legal Representative, RLOH
11	All Anaesthetists	CHUK and SHYIRA HOSPITALS
12	All Theatre Staff	CHUK and SHYIRA HOSPITALS

13	All Admin and Lab Staff	CHUK and SHYIRA HOSPITALS
14	All Drivers	CHUK and SHYIRA HOSPITALS
15	All Kitchen Staff	CHUK and SHYIRA HOSPITALS

18. ANNEXES

The documents in the Annexes are provided separately.

ANNEX A
Full Hernia Training Report From SHYIRA

ANNEX B
Full Report ENT Report from CHUK

ANNEX C
Full Neurology Report From CHUK

ANNEX D
Hospital Equipment for Shyira, and CHUK

19. SIGNED

CHRIS OPPONG
MEDICAL DIRECTOR
RWANDA LEGACY OF HOPE
CHAIRMAN
OPERATION HERNIA