DR ISAAC TSIKHUTSU

FELLOWSHIP IN PAEDIATRIC CRITICAL CARE AT RED CROSS WAR MEMORIAL CHILDREN'S HOSPITAL

1ST APRIL 2011 TO 31ST MARCH 2012

A journey that started in 2007 has finally come to an end. I first communicated with Professor Andrew Argent, the director of Pediatric Intensive Care Unit at Red Cross Children's Hospital about my intention to pursue a fellowship in Paediatric Critical Care in 2007. After having worked as a registrar at Kenyatta teaching and referral Hospital, and later on as a paediatrician in a faith based hospital and a district hospital, I felt we needed to do more in terms of intensive care for our sick children. We significantly reduced hospital based child mortality by practicing the Integrated Management of Childhood Illness (IMCI) in lower level hospitals and the Emergency Triage Assessment and Treatment (ETAT) in our higher level hospitals. But our in- hospital mortality still remained unacceptably high. This was attributable in part to lack of intensive monitoring and critical care for our children, hence my strong desire to pursue Paediatric Critical Care.

I finally managed to get an African Paediatric Fellowship Programme (APFP) scholarship in December 2008, and was slated to start the programme in January 2010. But due to unavailability of funds I was not able to start the programme in 2010. This broke my heart, but I remained hopefully. I kept in touch with Professor Andrew Argent, who also tried to get me other sponsors apart from APFP. I also still kept touch with APFP who promised me that any time, a scholarship became available they would consider me. I have put in this history, to show how determined Professor Argent, APFP and I were determined for me to pursue this fellowship. When everything looked gloomy, we kept hope alive.

I was therefore pleasantly surprised when I received a letter from Professor Joe Wilmhurst in September 2010, that I had finally gotten the APFP scholarship. From the previous experience, however I remained doubtful and only finally believed when I got an air ticket from Mrs. Avril Du Preez confirming my flight to Cape Town. I then in my heart thanked all the people who had worked hard to make my dream of starting this fellowship a reality. I can now thank them publicly; Professor Argent, Professor Hartley, Professor Wilmhurst, Professor Zar, Dominique, Samantha, Nicole, Avril and the others I have not mentioned by name.

I learnt a lot during my one year stay in the PICU. As expected, the learning curve was extremely steep, having come from a District Hospital to a state of the art tertiary hospital. Most of the staff were very patient with me and I learnt a lot from them, and this helped me settle in quickly. During my first three months I worked as a registrar just to get used to the systems. Though the working hours were

sometimes very long, I was able to gain confidence and learn most of the procedures during this period. At the end of the three months, I was confident and had mastered most of the skills in the Paediatric Intensive Care.

The next nine months, I worked as a Senior Registrar, where I took on a supervisory role, supervising and guiding the registrars. This was a very interesting period, as I now needed to read and understand the concepts and master skills so that I teach the registrars. I was also able to present in the journal club and discuss mortality and morbidity. It was hard initially, but at the end I was able to guide the registrars. The consultants were always available to assist and teach me in case of any difficulties. I also had time in the Medical emergency department and the Neonatal Intensive Care Unit. I thank all the ICU staff and the hospital staff for helping me achieve my goals and for being my friends. Special thanks to my consultants; Professor Argent, Dr Salie, Dr Ahrens and Dr Rossouw.I have put as an addendum what I learnt during my one year at Red Cross Hospital.

I will be going back to Kenya as I had promised. Am already an ETAT and a neonatal emergency care trainer in Kenya. The knowledge and skills I have gained will help in enriching our training and improving emergency pediatric and neonatal care in our lower level institutions. I intend to help in areas of oxygen and fluid delivery and in setting up of high care units in our district hospitals.

Kenyatta National Hospital has a 22 bed combined adult and paediatric ICU. I will later on join my colleague in Kenyatta to help manage critically ill children in ICU and in the wards. I will also help in teaching the registrars, medical, nursing and medical assistant students peaediatric emergency and critical care. We also hope to set up a separate pediatric ICU and High Dependency Unit (HDU).

We will require a team to be able to set up the PICU and HDU. When I go back I will do a needs assessment and we will hopefully send some other cadre to Red Cross to train in various aspects of Paediatric Critical Care.

I wish to thank everyone who has made it possible for me to do this one year fellowship.

Dr Isaac Tsikhutsu

Skills acquired

1. Airway Management
    -Maintenance of open airway
    - Intubation (oral, nasotracheal)
2. Ventilation
    - Oxygen therapy,
    - Ventilation by bag and mask
    -Mechanical Ventilation
    -CPAP/BiPAP
3. Pulmonary aspects
    -Management of pneumothorax, pleural effusions- needle aspiration, chest tube insertion, drainage systems
    -Management of status asthmaticus
    - Interpretation of arterial and mixed venous blood gases
    -Interpretation of Chest x-rays
    -Bronchoalveolar lavage techniques
4. Cardiovascular
    - Management of pre- and post-operative congenital heart diseases
    -Management of acute myocarditis and cardiomyopathy
    -Acute pulmonary hypertensive crises

-Assessment and treatment of ECG abnormalities and rhythm disturbances

- Arterial puncture and blood sampling

- Insertion of monitory lines, both arterial and venous

-Cardioversion (electrical and medical)

5. Neurological

-Assessment of coma depth

-Assessment of brain death

-Lumbar puncture

-Intracranial pressure monitoring

-Head injury

-Basic interpretation of brain CT scan and MRI

-Monitoring of neuromuscular blockade

-Continuous EEG monitoring

-Management of status epilepticus

-Management of patients with neuromuscular disorders

6. Metabolic

- Monitoring and assessment of nutritional support

- Implementation of fluid therapy

-Interpretation of acid –base abnormalities

-Implementation of enteral and parenteral nutrition

-Management of hypothermia and hyperthermia

-Management of acute poisoning

-Management of electrolyte abnormalities

7. Gastrointestinal

- Management of GIT crises (GIT bleeding, acute pancreatitis, acute abdomen)

-Insertion of naso and oro gastric tubes

-Insertion of nasojejunal tubes

-Implementation of stress ulcer prophylaxis

-Management of acute hepatic failure

-Management of abdominal compartment syndromes

- Management of necrotizing enterocolitis

- Immediate post operative management of liver transplant patients

8. Hematological

-interpretation of coagulation profile

- Implementation and control of anticoagulant and fibrinolytic treatment

-Utilization of blood component therapy and artificial colloids

-Management of massive transfusions

9. Infection

-Recognition, assessment and treatment of infection

-Sampling for cultures (blood and other sites) and interpretation of laboratory reports

-Use of aseptic techniques and prevention of nosocomial infection

-Management of wounds and drains

- Prevention of Ventilator Associated Pneumonia

-Rationale use of antibiotics and other antimicrobials

10. Renal

- Establishment of a fluid and electrolyte balance

- ICU management of patients on renal replacement therapy

-Immediate post operative management of kidney transplant patients

- Management of electrolyte imbalances

11. Trauma

- Management of the polytrauma patient

-Management of head injury patient

-management of near drowning patient

-Management of burn patient

- Recognition and management of spinal cord injury

12. Monitoring and Life Support Devices

- Utilization, zeroing, calibration of transducers

-Use of amplifiers and recorders

-Assessment of reliability of measured data

-Operation of ventilators

- Trouble shooting equipment

13. Pharmacology

- Implementation and control of adequate sedation and analgesia

-Knowledge of most used drugs (also in renal and hepatic failure)

-The use of muscle relaxants

-a basic knowledge of pharmacokinetics in children of various age groups

14. Ethical

- Exposure to ethical aspects of intensive care

-Ability to appreciate and implement patients and family's wishes

-Ability to consider and discuss (dis)continuation or restriction of treatment (also with relatives)

-implementation of palliative care order

-integration of the family's wishes in the treatment plan

15. Organisational

- Structure of daily patient care

- Structured patient file with strategies for diagnostic procedures and management of individual patients

-Quality management (use of scoring systems, outcome measures etc)

-Adequate and timely reports to the primary care/referring physician

-Allocation of human, spatial and technical resources

- Management and risk estimation of transport of critically ill paediatric patients

-Use of data management systems

16. Other exposure

- Neonatal intensive care

- Medical emergency services