Challenges and Way Forward in PICU – Kenya

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8.8 million Children do not live to celebrate their 5\textsuperscript{th} birthday

- Majority of these deaths occur in low income countries

- Deaths mainly due to preventable and treatable causes

- 10/90 gap: Only 10\% of worldwide resources is devoted towards health in developing countries, where 90\% of all preventable deaths worldwide occurred.
High Inpatient mortality...

- Delayed presentation
- Delayed recognition
- Large patient numbers
- Poor monitoring of inpatients
- Lack of essential drugs/equipments
- Inadequate training of healthcare providers
- Understaffing
• Critical care deemed unimportant when compared to preventive care

• Critical care considered equivalent to ‘ventilator care’
Trends in Childhood Mortality

Deaths per 1,000 live births for the five-year period before the survey

*Data before 2003 exclude North Eastern region and several northern districts in Eastern and Rift Valley regions.
Trends in Neonatal Mortality

Deaths per 1,000 live births for the five-year period before the survey


26  28  33  31  22

*Data before 2003 exclude North Eastern region and several northern districts in Eastern and Rift Valley regions.
Spectrum of Disease

- **Neurological**: 37%
- **Meningitis**: 65.6%
- **Severe Pneumonia**: 73.3%
- **Brain Tumor**: 50%
- **Post op**: 5%
- **Poisoning**: 1%
- **Organophosphate**: 50%
- **Head Injury**: 85.7%
- **Acute GE**: 70%
- **Respiratory**: 19%
- **Sepsis**: 15%
- **Cardiovascular**: 1%
- **GI**: 14%
- **Trauma**: 8%
Childhood illnesses...percent seeking medical care

- ARI: 66%
- Fever: 63%
- Diarrhoea: 58%
Patient Outcomes

<table>
<thead>
<tr>
<th>Admitted to ICU</th>
<th>Not admitted to ICU</th>
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<tbody>
<tr>
<td>58.3% Discharge</td>
<td>100% Death</td>
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<tr>
<td>41.7% Death</td>
<td>0%</td>
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WAY FORWARD...
What is critical care?
Where is critical care delivered?
Who provides critical care?
What defines a critical care unit?
Goals to achieve...

- Early recognition
- Better access and Early referral
- Improve bed facility
- Improve outpatient and inpatient care
- Reduce overcrowding
- Better public health facilities
Parents as Monitors

• Within minutes of teaching, mothers of sick children were able to follow
  - Capillary refill time
  - Work of breathing
  - Mental status changes
  - Feeding patterns
  - Urinary output
Family-Assisted Monitoring in Resource Limited Settings

- Low-cost, practical intervention

- May significantly improve health care systems

- Further research required to assess
  - Efficacy, reproducibility
  - Affect on parents
  - Affect on healthcare providers and work flow
Helping Reduce Mortalities from Common Childhood Illnesses - ETAT+

- Adapted from the existing WHO Emergency Triage Assessment and Treatment - ETAT course with
  - New material on newborn resuscitation
  - Care of the common causes of serious illness in the newborn or child
- Comprises Lectures, Practical Scenario Based Teaching, Hospital Audit
- Outcome - Emergency Triage Assessment and Treatment plus admission care (ETAT+)
- Currently taught in 6 Countries (Kenya, Uganda, Rwanda, Zimbabwe, Somaliland and Myanmar)
ETAT+ Achievements: 2012 - 2014

- >40,000 Kenyan pocket guidelines distributed.
- By January 2015 ETAT+ has been delivered to:
  - 2800 Kenyan Health care workers (HCW)
  - 2000 Kenyan medical undergraduates
  - 300 HCW and 180 undergraduates in Rwanda
  - 300 HCW in Uganda;
  - Somaliland is using ETAT+ in HCW trainings.
  - Tanzania- 50HCW trained
  - Link to Sierra Leone evolving
Pediatric Critical Care Fundamentals: A Valuable Resource for Resource-Limited Areas

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- International participants with limited ICU training and practice performed similarly to US candidates.
- Demonstrated efficacy of PFCCS in augmenting Pediatric Critical Care education in resource-limited settings.
PICU in Kenya...

- Intensive Care Unit in Kenya since 1970

- A combined Adult-Pediatric ICU – 21 beds

- Exclusive PICU – 5 beds, from August 2015

- Bed occupancy in wards: 134%

- Paediatric bed occupancy in combined ICU: 40 – 80%

- Pediatric bed occupancy in PICU 100%.
A Global Collaboration

PECC-Kenya
Pediatric Emergency and Critical Care

DEPARTMENT OF PEDIATRICS
UNIVERSITY OF WASHINGTON

UNIVERSITY OF NAIROBI
College of Health Sciences

Seattle Children’s
HOSPITAL · RESEARCH · FOUNDATION

Gertrude’s
CHILDREN’S HOSPITAL
Quality healthcare for children

Kijabe Hospital
Health care to God’s glory
We seek to transform care and outcomes of critically-ill children in Sub-Saharan Africa through leadership in education, research, advocacy and effective global partnerships.
Thank you