Web Extra: Teaching Safe Delivery Practices

Eastern Division faculty members train physicians, midwives, and nurses in Rwanda

The most common causes of maternal and fetal death in developing nations, such as Rwanda, include maternal hemorrhage, shoulder dystocia, a condition where the baby's shoulders get stuck inside the mother's body and cannot pass into the birth canal, and infant breathing problems. Several WVU Health Sciences Center Eastern Division faculty members and Department of Family Medicine residents returned from a 17-day medical mission to Rwanda, where they taught 85 Rwandan nurses, midwives, and physicians about safe childbirth practices.
FROM HILLS TO DISTANT HILLS: RWANDA AND WEST VIRGINIA’S SHARED PERINATAL EXPERIENCES

David A. Baltierra, MD, FAAFP
2016 West Virginia Perinatal Summit
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Charleston, WV
ACTIVITY DISCLAIMER

David A. Baltierra, MD has indicated he has no relevant financial relationships to disclose.
LEARNING OBJECTIVES

1. Participants will be able to describe similarities in perinatal challenges faced by Rwanda and West Virginia.

2. Participants will be able to recognize the critical role education and simulation can have in resource-limited environments in transfer of skills, direct patient care, and trainer development.

3. Participants will be able to identify future areas of collaboration and sharing of experiences and solutions to improve perinatal health outcomes in Rwanda and West Virginia.
A STORY OF GLOBAL HEALTH

• Why go to Rwanda?
• What to do in Rwanda?
  – How can we help?
• What can we learn from Rwanda?
  – What do we get out of it?
• How to stay engaged with Rwanda?
WHY GO TO RWANDA?

• Convenience???
• Personal
• Professional
• Expand Family Medicine Training
• WVU Global Health Program
  – [http://medicine.hsc.wvu.edu/tropmed/](http://medicine.hsc.wvu.edu/tropmed/)
WHAT TO DO IN RWANDA

• Work for long term improvements
• Avoid short-term solutions
• Help build capacity
• Export expertise in education
• Provide family medicine resident educational experience
• Build academic and system relationships
RWANDA HEALTH NEEDS

• Coordinated national health planning
• Focus on 2015 UN Millennium Development Goals #4 and #5
  – Reduce Child Mortality
  – Improve Maternal Health
• Educate Health Professionals
Leading direct causes:
Haemorrhage – 25%
Hypertension – 16%
Unsafe abortion – 10%
Sepsis – 10%

Why do sub-Saharan African mothers die?
Leading causes:
Neonatal – 39%
Pneumonia – 16%
Diarrhoea – 10%
Injuries – 7%
Malaria – 4%
HIV/AIDS – 1%
Measles – 1%

Why do Rwandan children die?

Causes of under-five deaths, 2012

- Neonatal death: 39%
- Pneumonia: 16%
- Preterm: 10%
- Other: 21%
- Malaria: 4%
- HIV/AIDS: 1%
- Injuries: 7%
- Measles: 1%
- Asphyxia*: 12%
- Other*: 2%
- Congenital: 5%
- Sepsis**: 8%
- Diarrhoea: 10%
- Globally nearly half of child deaths are attributable to undernutrition

Source: WHO/CHERG 2014

* Intrapartum-related events
** Sepsis/ Tetanus/ Meningitis/ Encephalitis
WEST VIRGINIA
RWANDA
DISCLAIMER

- Numbers and data in this section are for illustrative comparison only
  - I didn’t make them up but they can be disputed and hard to pin down
  - They help me tell the story of West Virginia and Rwanda
MOUNTAINS AND HILLS

• West Virginia
  – Spruce Knob 4863 ft
  – Potomac River at Harpers Ferry 240 ft

• Rwanda
  – Mount Karisimbi 14,787 ft
  – Rusizi River 3,117 ft
LAND AREA & POPULATION

• West Virginia 24,230 mi²
• Rwanda 10,169 mi²

• West Virginia 1,797,500 (2015)
  – 74 people/sq mi
• Rwanda 11,610,000 (2015)
  – 1,142 people/sq mi
BIRTHS & LIFE EXPECTANCY

- West Virginia 20,301 (2014)
- Rwanda 363,000 (2015)
- West Virginia 75.4 yrs
- Rwanda 66.7 yrs
INFANT & MATERNAL MORTALITY

• West Virginia 7.6/1,000 live births (2013)
• Rwanda 31/1,000 live births (2015)

• West Virginia 9.5/100,000 live births (2003-2007)
• Rwanda 320/100,000 live births (2014)
INCOME AND HEALTH CARE EXPENDITURES

• West Virginia GDP $71,123 M (~ $39,568/capita)
• Rwanda $8,267 M (~ $712/capita)

• West Virginia $13,964M (~ $7,770/capita)
• Rwanda $1,451M ($125/capita)
WVU RURAL FM PROGRAM IN RWANDA

• February 2014
  – Exploration, contacts, site visits
  – Pilot of training program

• May 2015
  – Medical school affiliation developed

• September 2015
  – Partnering with Shyira Hospital
  – Training Program at hospital and health center

• February 2016 – Resident and Medical Student rotation
WHAT WE TAUGHT

• Helping Mothers Survive
• Helping Babies Breathe
• One Day Program
• Teach the Teacher
• Modified ALSO (Obstetric Emergencies)
• Unique Model of Teaching Continuum of Skills from Antenatal to Postnatal
WHERE WE WENT

• Kigali -
  – CHUK; Nyabisindu Maternity Clinic – Christian Life Assembly Church – Midwives

• District Hospitals
  – Rwinkwavu Hospital - Partners In Health
  – Ruhengeri Hospital-Northern Province/Musanze - Rubanzabigwi Theoneste, MD
  – Shyira District Hospital and Health Center – Final site
WHO WE TAUGHT

• Rwandans and N. Americans
• Midwives and Midwifery students
• Nurses and Nursing students
• Medical Students
• Residents (Family Medicine, Med/Peds)
• Physicians (Family Medicine, Interns, GPs, Pediatricians, OBs, Neonatologists, )
• Ourselves
WHAT WE USED

• Resources
  – Helping Babies Breathe
  – Helping Mothers Survive
  – ALSO (modified)
  – Global ALSO (modified)

• Simulators
  – NeoNatalie
  – MamaNatalie
  – MamaU
Welcome to the Website for Helping Babies Breathe®

Objective of HBB
To ensure that all babies are born with a skilled birth attendant present.

The Curriculum
Helping Babies Breathe is a neonatal resuscitation curriculum for resource-limited circumstances. It was developed on the premise that assessment at birth and simple newborn care are things that every baby deserves. The initial steps taught in HBB can save lives and give a much better start to many babies who struggle to breathe at birth. The focus is to meet the needs of every baby born.

The Golden Minute®
Helping Babies Breathe emphasizes skilled attendants at birth, assessment of every baby, temperature support, stimulation to breathe, and assisted ventilation as needed, all within “The Golden Minute” after birth.

Our Partners
Helping Babies Breathe is an initiative of the American Academy of Pediatrics and many partners, including the US Agency for International Development (USAID), The Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), Saving Newborn Lives/Save the Children, and the Millenium Villages Project. The curriculum was
Helping Mothers Survive

A program to keep mothers and newborns alive and thriving.

Innovative Training to Help Frontline Health Workers Save Lives
Advanced Life Support in Obstetrics (ALSO®)

Sponsor an ALSO Course
Help others develop and maintain the knowledge and skills needed to effectively manage potential emergencies during pregnancy.

Sponsorship Requirements »

Advanced Life Support in Obstetrics (ALSO®) is an evidence-based multidisciplinary training program that prepares maternity health care providers to better manage obstetric emergencies. ALSO's evidence-based learning path bridges knowledge gaps and boosts skill sets using a team-based approach, hands-on training, and mnemonics to reduce errors and save lives.

Improving outcomes and saving lives for more than two decades, ALSO offers three course types—Provider, Instructor, or Refresher—as well as course sponsorship opportunities. Be part of the success story. Register for, or sponsor, a course today.

ALSO and Global ALSO (both modified)
MAMA NATAILIE & NEO NATAILIE
PUTTING IT ALL TOGETHER

- Helping Mothers Survive PLUS Helping Babies Breathe
- Shoulder Dystocia
- Breech Delivery
- Teamwork
- Multidisciplinary
- Hands-On
- Shared Collaborative Learning and Care
WHAT WE LEARNED

• Flexibility
• Culture impacts learners and teachers
• Simulators and Hands-on is effective in low-resource and can assess competency
• Learners want to learn
• Teaching the Teacher made it acceptable
• It is possible to do something in 2 weeks (taught ~ 90 health care professionals)
• Direct care is not primary goal
SHARED CHALLENGES OF UNDER-RESOUERCED ENVIRONMENTS (WV & RWANDA)

- Hierarchical medical systems
- High risk situations
- Infrequent events
- Distant from referral centers
- Shortage of skilled providers
- Inadequate communication
ALWAYS LEAVE SOMETHING

• Knowledge
• A new partnership
• Practical tools
  – Reusable resuscitation bags
  – Penguin suction syringes
  – Kit bag
• Full stomachs and gas tanks
• SMILES
SHARED CHALLENGES IN PERINATAL CARE (WV & RWANDA)

- Economically disadvantaged
- Geographic challenges
- Communication challenges
- Regionalization of health care
- Transportation challenges
- Suboptimal health outcomes
- Distribution of resources
WHAT CAN WE LEARN FROM WHAT RWANDA DOES WELL?

• National Priorities and Measurements
• Regionalized Healthcare System
• Community Health Workers for Outreach
• Use of Technology for communication and infrastructure
• Health Information Technology Integration
• Creative solutions to Problems
WHAT WE CAN LEARN

• Economic development
• Environmental stewardship
• Private public partnership
• Shared Vision
• Goal Setting
• Data based programs
• Fiberoptic
• 4G LTE
REGIONAL/NATIONAL HEALTH SYSTEM

• Decentralized care
  Dispensaries - 34
  Health Posts - 34
  Health Centers - +430
  District Hospitals - 39
  Referral Hospitals - 4

• Universal health insurance system – state and individual contribution

http://gov.rw/services/health-system/
Main cause of death: severe bleeding (39%) of which > 3/4 occurred in postpartum period; Second cause: infection (16%), then eclampsia (12%).

Hypothermia is the main complication that is associated with deaths independently of place of birth. 75% of all newborns suffered from hypothermia at the time of their admission in neonatology services.
COMMUNITY HEALTH WORKERS

• Read and write
• Volunteers
• Paid for outcomes
• Elected by community
• Register mothers and children
• Basic health skills
• Protocols
• Refer to health centers
May 2010

HOME-BASED MATERNAL AND CHILD CARE

Training Module for Community Maternal Health Workers
HEALTH INFORMATION TECHNOLOGY

• RapidSMS (Texting)
• Health Management Information System (HMIF) (patient records and tracking)
• Electronic Logistic Management Information System (ELMIS) (drug ordering)
• Laboratory information integration
STEP 1 OF TRANSPORT
BEFORE RAPIDSMS
RAPID SMS (TEXT)
NOW, STEP 1

LEAPING INTO THE FUTURE

How do you get blood to a bleeding mother?
FUTURE PLANS

• Future collaboration/education/faculty development opportunities
• Future research opportunities
• Formalize assessment
• Focus on CME process for Rwandans
• Language skills/translation
FUTURE HOPES

• Teach more CME
  – Preeclampsia
  – Neonatal Circumcision
• Formalize Teaching the Teacher
  – Partner to teach in community health centers
• Support new Family Physicians and Faculty
• Collaborate in educational exchange for Maternal & Child Health Fellowship
SELECTED RESOURCES

• West Virginia: Categories and Indicators
  http://kff.org/statedata/?state=WV

• March of Dimes PeriStats
  http://www.marchofdimes.org/peristats/Peristats.aspx

• Rwanda Maternal and Child Health Data
  http://www.countdown2015mnch.org/country-profiles/rwanda
OBJECTIVE: COUNTDOWN 2015

• UN Millennium Development Goals 4 & 5
  – Goal 4: Reduce child mortality
  – Goal 5: Improve maternal health

• http://www.countdown2015mnch.org
• http://www.countdown2015mnch.org/country-profiles
HELPING BABIES BREATHE

- http://www.helpingbabiesbreathe.org
HELPING MOTHERS SURVIVE

- http://www.helpingmotherssurvive.org
ALSO & GLOBAL ALSO (MODIFIED)

• http://www.aafp.org/about/initiatives/also.html
• http://www.aafp.org/about/initiatives/also/international.html
• http://www.aafp.org/about/initiatives/also/international/contacts.html
SIMULATORS FROM LAERDAL GLOBAL HEALTH

• NeoNatalie
  http://www.laerdalglobalhealth.com/doc/2528/NeoNatalie

• MamaNatalie
  http://www.laerdalglobalhealth.com/doc/2545/MamaNatalie

• MamaU
  http://www.laerdalglobalhealth.com/doc/2540/Mama-U
RWANDA MATERNAL AND CHILD HEALTH DATA

• http://www.countdown2015mnch.org/country-profiles/rwanda
http://www.un.org/millenniumgoals/
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• http://www.hsc.wvu.edu/eastern/som/residency/

• http://wvuhealth.hsc.wvu.edu/issues/spring-2014/web-extra-teaching-safe-delivery-practices/