To improve infection control, measurement of vital signs for effective triaging, and neonatal resuscitation through capacity building activities at the Bisate Clinic, Rwanda.

**BACKGROUND**

- Bisate Clinic, Rwanda is a resource-limited, nurse-run clinic serving 18,000 people in 29 villages.
- The population is closely linked to the mountain gorilla population in Volcanoes National Park.
- Educational needs were identified in a baseline assessment conducted by Emory nursing students in 2013 in partnership with Dian Fossey Gorilla Fund International.
- Two Emory resident physicians addressed these needs with capacity-building educational modules in August 2015:
  1. Infection control
  2. Vital signs and triage
  3. Neonatal resuscitation and Care

**METHODS**

- Conduct interventions during daily staff meetings, in outpatient visits and on morning rounds
- Compare pre-intervention assessments with post-intervention assessments for each module
- Document changes in knowledge, attitudes, and practice via surveys and direct observation

**PROJECT PARTNERS**

Dr. Rebecca Philipsborn, Emory Pediatrics PGY-3
Dr. Andi Shane, Emory Peds Infectious Disease

**OBJECTIVE**

To improve infection control, measurement of vital signs for effective triaging, and neonatal resuscitation through capacity building activities at the Bisate Clinic, Rwanda.

**BASELINE NEED**

**Infection Control**
- Hand hygiene not routinely employed
- Patients not separated according to illness
- Antimicrobial use without likelihood of underlying bacterial infection

**Vital Signs and Triage**
- Vital signs not routinely taken
- Lack of quantitative measure to identify and transport sickest patients to District Hospital
- Physical exams conducted in only 34% of encounters

**Neonatal Resuscitation and Care**
- Lack of training in neonatal resuscitation
- First 60 seconds of an infant’s life are extremely important

**INTERVENTIONS**

**Infection Control**
- Employ hand hygiene per World Health Organization
- Separate sick patients by 1 meter
- Open windows
- Separate coughing patients in outdoor waiting area
- Cover cough with inner elbow instead of the hand
- Guides for infection control and antibiotic use provided
- Equipment provided: Purell hand sanitizer, nitrile gloves, surgical masks, alcohol swabs, hand hygiene posters

**Vital Signs and Triage**
- Follow Helping Babies Breathe protocols from the American Academy of Pediatrics
  1. Sterilize equipment
  2. Breast-feeding
  3. Identification of sepsis
  4. Emergent management of asphyxia
- Equipment provided: re-usable nasal suction bulbs, Helping Babies Breathe posters

**Neonatal Resuscitation and Care**
- Follow Helping Babies Breathe protocols from the American Academy of Pediatrics
  1. Sterilize equipment
  2. Breast-feeding
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**OUTCOMES**

- Thermometers sterilized routinely
- Providers used masks when appropriate
- Nurses understood respiratory and gastrointestinal cases that do not necessitate antibiotics
- Hand Hygiene knowledge, attitudes, and practice increased with intervention

**Next steps:** hand-washing stations in each room, sustainable sources of soap/sanitizer, antibiotic stewardship training, pathogen database

**Hand Hygiene**

<table>
<thead>
<tr>
<th>Survey of Use (1 = never, 5 = always)</th>
<th>Observation of Use</th>
<th>Correctly-performed hand hygiene opportunities (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average: before patient intervention</td>
<td>Average: after patient intervention</td>
<td>Before: 21%, after: 310%</td>
</tr>
<tr>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Correctly-performed hand hygiene opportunities (%)</td>
</tr>
<tr>
<td>2.9 (n=9)</td>
<td>3.3 (n=9)</td>
<td>9.1% (n=33)</td>
</tr>
<tr>
<td>3.5 (n=8)</td>
<td>4.0 (n=8)</td>
<td>37.5% (n=24)</td>
</tr>
<tr>
<td>Percent increase</td>
<td></td>
<td>310%</td>
</tr>
</tbody>
</table>

Table: Hand hygiene use pre- and post- educational intervention

**Staff learned:**
- "Upper respiratory infection control and advice to give to the community"
- "When to use antibiotics, especially when differentiating viruses and bacteria"
- "After triaging a patient I wash my hands to not spread microbes to another patient"

**Vital Signs and Triage**

- Follow WHO Integrated Management of Adult/Adolescent Illnesses (IMAI) and Childhood Illnesses (IMC)
- Equipment provided: blood pressure cuffs, stethoscopes, thermometers, pediatric vital signs charts

**Neonatal Resuscitation and Care**

- Follow Helping Babies Breathe protocols from the American Academy of Pediatrics
  1. Sterilize equipment
  2. Breast-feeding
  3. Identification of sepsis
  4. Emergent management of asphyxia
- Equipment provided: re-usable nasal suction bulbs, Helping Babies Breathe posters

**Next steps:** IMAI/IMCI reinforcement, pulse oximetry, Doppler fetal heart rate detection

**Next steps:** Use of neonatal masks

- Temperature and weight obtained for patients prior to intervention per IMAI and IMCI