

## **Why has the cleaning and sterilization process has failed?**

1. Shortage of washing machine and autoclaves
  - a. The University of Gondar is a 500 bed hospital and serves a community of more than seven million. There is insufficient cleaning and sterilization equipment to meet this demand.
  - b. This leads to overloading of the available machines, causing damage and frequent breakdowns
  - c. Resource limitations prevent purchase of the needed equipment
2. Lack of trained manpower for maintenance and repair
  - a. Newly employed biomedical technicians are not well trained to maintain and repair the existing machines.
  - b. Spare parts are not available
  - c. Current equipment often breaks down, leading to shortages of sterile supplies and birthing kits for Labor and Delivery. This results in build-up of dirty linens, inadequate handwashing of the supplies and cancellation of elective surgery. Emergency surgeries have been delayed due to lack of sterile drapes and instruments.
3. Untrained personnel operating the machines fail to use proper loading techniques leading to overloading of machines and breakdowns.
4. Power outages to the hospital are common and power surges can damage unprotected equipment despite the use of back-up generators.
5. Softened clean water may not be available to protect the cleaning and sterilization equipment.
6. Adequate chemicals for disinfection may not be available.
7. The birthing kits and surgical drapes come back from the laundry stained with blood and body fluid
  - a. The cleaning and sterilization facility is a distance from the Obstetric and Neonatal wards
  - b. The soiled linens are picked up every 24 hrs and are transported to the cleaning and sterilization facility allowing the stains to set before they can be processed leading to permanent staining of the linens
8. Birthing Kits sent to the cleaning and sterilization facility are lost and are never returned to the NICU and Labor Ward.

## **Proposed Solutions**

1. Develop a cleaning and sterilization facility adjacent to the Neonatal and Obstetric Wards that is for their exclusive use. This would give the end users control over the use and avoid misuse.
2. Choose equipment with capacity to meet the demands of the departments of Obstetrics and Neonatology. The Department of Biomedical services has estimated that the needed capacity for the machines is:

- a. Washing machine: 50-60 Kg capacity
  - b. Dryer with 50-60 Kg Capacity
  - c. Water softener capacity 800 Liters per hour
  - d. Autoclave: 300-350 Liter Capacity
3. Provide a water softener that protects the washer and autoclave from mineral damage.
4. Train operating personnel to:
  - a. Immediately pretreat linens soiled with blood and body fluids
  - b. Properly load and run the equipment
  - c. Monitor for problems
  - d. Quality Control
5. Provide training for biomedical technician staff in the proper maintenance and repair of the equipment.
6. Provide replacement parts for repair and maintenance
7. Provide a 5 year maintenance and repair contract

## **Current University of Gondar Cleaning Facility**



**Piles of Laundry and Surgical Drapes awaiting transport to the Gondar University Hospital Laundry**



**Transporting Soiled Linen to Hospital Laundry**



**Hand Washing soiled Linen and Surgical Drapes**



**Line Drying Surgical Drapes**