

# **Assessment of Infection Prevention Practices at Coast Provincial General Hospital, Kenya**

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## ACKNOWLEDGMENTS

I wish to thank the Coast Provincial General Hospital staff, particularly Chief Administrator Dr. Shikely; Dr. Mwangi, Deputy Administrator, Matron Ali, the Director of Nursing; Matron Ndungu, Nurse Manager of Pediatrics; and Matrons Suleiman and Chiriba, Nurse Managers in Maternity, for their support and assistance in this work.

## **EXECUTIVE SUMMARY**

This report is based on an initial review of infection prevention practices at the Coast Provincial General Hospital that took place January 30 through February 23, 2001, and a follow-up review April 24-26, 2001. Both reviews involved observing basic infection prevention and control practices of medical and nursing staff, such as hand washing and use of gloves, in two patient care areas, and a related overview of the patient care environment.

The reviewer observed 35 staff in the Maternity and Pediatric wards of the hospital and assessed the patient care areas within these wards for appropriate supplies and equipment.

Overall results of the initial survey were poor. Staff practiced only very minimal infection prevention and necessary supplies were inconsistently available.

At the follow-up two months later, needed supplies were available in all wards, and staff in both Maternity and Pediatrics had been in-serviced on basic infection prevention practices. The follow up assessment showed slight improvement in the practice of basic infection prevention. However, the hospital still has a long way to go to meet the international standards, which are discussed in more detail below.

## **INTRODUCTION**

The purpose of infection prevention is to reduce infections and prevent transmission of serious and life-threatening diseases. Everyone working in a health care facility is responsible for first-line infection prevention. Simple practices, such as washing hands between contact with all patients and wearing gloves when in contact with bodily fluids, could stop a hospital-acquired infection of possibly epidemic proportions.

Because of high patient volumes and the infectious nature of most patients (with such diseases as cholera, tetanus, TB, HIV/AIDS) admitted to Coast Provincial General Hospital (CPGH), the hospital must enforce basic infection prevention to prevent hospital-acquired infections.

During the last five years, donors funded staff training in infection prevention techniques at CPGH. Despite the training and later development of an Infection Control Committee, infection prevention remains poor throughout the hospital.

The staff who have had the benefit of outside training in infection prevention are a good resource for the hospital, but they are being underutilized. These staff have given some formal lectures on infection prevention to the nursing staff with a focus on high-level infection prevention, such as sterilization or decontamination. The administrative staff of the hospital and the technical staff at Management Sciences for Health recognize that before advances in infection prevention can be made, the staff must adopt and habitually practice basic infection prevention throughout the hospital.

The reviewer met with the Infection Control Committee to discuss the problems and possible solutions. The committee devised a plan to assess basic infection prevention practices in two patient care areas and to assess availability of basic facilities in all hospital wards. The staff decided to make previously trained staff responsible for educating the rest of the staff in basic infection prevention techniques in small, informal sessions. In the interest of sustainability, these staff will select other staff members to become trainers.

## **OBJECTIVES OF THE MSH PLAN**

- To assess level of infection prevention activity
- To assess baseline infection prevention methods in two patient care areas
- To facilitate development of basic infection prevention practices
- To facilitate staff education in basic infection prevention methods, starting in Pediatrics and Maternity
- To facilitate development of an infection prevention manual specific to CPGH
- To provide resources on infection prevention

## **ACTIVITIES**

**January 19.** Held initial discussions with Dr. Shikely, Chief Administrator, CPGH, and Ian Sliney, MSH Chief of Party, about infection prevention. We discussed the hospital's poor infection prevention practices and how MSH could help address them.

**January 23.** Met with Mrs. F. Mumba of AVSC International to discuss the training and technical assistance it had provided to CPGH staff. Mrs. Mumba provided a list of names of CPGH staff that had attended training.

**January 29.** Met with Matron Ali, Director of Nursing, to review Infection Prevention Plan. Discussed the need for Infection Prevention Committee to be involved in policy making specific to CPGH.

**January 30.** Met with Infection Prevention Committee to discuss the audit and the areas that would be targeted. Met with Dr. Shikely to discuss patient care areas to be audited, provision of supplies, and education. Audit commenced.

**January 30 – February 23.** Audit completed.

Talked with staff at JHPIEGO (Johns Hopkins Program for International Education in Gynecology and Obstetrics) about the training and technical assistance they had given CPGH staff on infection prevention in the late 1990s.

**February 28.** Met with Infection Prevention Committee to discuss preliminary results and plan infection prevention education sessions in Pediatrics and Maternity.

**March – April.** Education on hand washing and disposal of contaminated waste in both Maternity and Pediatric Wards.

**April 24 – April 26.** Audit completed following infection prevention education in Maternity and Pediatric Wards.

## FINDINGS

The results of the audits can be seen in tables one and two below, followed by a summary for each of the tables. Areas of improvement have been highlighted.

**Table 1. Results of Ward Audit**

SUMMARY OF INFECTION PREVENTION (IP) PRACTICE—SUPPLIES				
	MATERNITY		PEDIATRICS	
	PRE IP EDUCATION	POST IP EDUCATION	PRE IP EDUCATION	POST IP EDUCATION
SINK AVAILABLE	75%	100%	100%	100%
WATER AVAILABLE	100%	100%	100%	100%
SOAP AVAILABLE	25%	100%	100%	100%
TOWELS AVAILABLE	0%	100%	0%	100%
GLOVES AVAILABLE	100%	100%	100%	100%
PATIENT CARE AREA CLEAN	100%	75%	50%	100%
RUBBISH BINS AVAILABLE	75%	100%	100%	100%
RUBBISH SEPARATED	25%	75%	0%	50%

### Summary of Ward Audit (before Infection Prevention Education)

- 75 percent of the wards in Maternity had sinks available, some not actually in the patient care area.
- 100 percent of the wards in Maternity and Pediatrics had water available.
- 25 percent of the wards in Maternity had soap available.

- 0 percent of the wards in Maternity and Pediatrics had hand-drying facilities.
- 50 percent of the patient care areas in Pediatrics were not clean and had rubbish or dirty linen on the ground.
- 75 percent of the patient care areas in Maternity had no rubbish bins.
- 25 percent of the contaminated rubbish in Maternity was separated from the regular rubbish; in Pediatrics 0 percent was separated.

### **Follow-Up Ward Audit (After Infection Prevention Education)**

- 100 percent of the wards have sinks, some still remaining outside the patient care area.
- 100 percent of the wards have water available.
- 100 percent of the wards have soap available.
- 100 percent of the wards have towels available.
- 100 percent of the wards have gloves available.
- 100 percent of the wards have rubbish bins.
- 75 percent of the patient care areas in Maternity and 100 percent of the patient care areas in Pediatrics were clean.
- 75 percent of the wards in Maternity and 50 percent of the wards in Pediatrics separated contaminated rubbish (a 50 percent increase for both areas).

**Table 2. Results of Staff Audit**

SUMMARY OF INFECTION PREVENTION PRACTICE AMONG CPGH STAFF								
POPULATION SAMPLE Number/Percentage	MATERNITY				PEDIATRICS			
	PRE IP EDUCATION n=13		POST IP TRAINING n=18		PRE IP EDUCATION n=22		POST IP TRAINING n=17	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
HANDWASHING WHEN INDICATED	2	15%	7	39%	1	5%	2	12%
GLOVES WORN WHEN INDICATED	7	54%	11	61%	1	5%	7	41%
GLOVES CHANGED WHEN INDICATED	6 of 7	86%	9 of 11	82%	1 of 22	100%	5 of 17	71%

### **Summary of the Staff Audit (Before Infection Prevention Education)**

- 15 percent of staff washed their hands when indicated in Maternity.
- 5 percent of staff washed their hands when indicated in Pediatrics.
- 7 out of the 13 staff members (54 percent) observed in Maternity wore gloves when indicated.
- 6 of the 7 staff members who wore gloves changed them before moving to another task.
- 1 out of 22 staff members (5 percent) observed in Pediatrics wore gloves when indicated and changed them before moving to another task.

### **Follow-up Staff Audit (After Infection Prevention Education)**

- Hand washing improved 24 percent in Maternity and 7 percent in Pediatrics.
- 11 of the 17 staff members observed in Maternity wore gloves when indicated—an improvement of 7 percent.
- 9 of the 11 staff members who wore gloves changed them before moving to another task.
- 7 of the 11 staff members observed in Pediatrics wore gloves when indicated—an improvement of 36 percent.
- 5 of the 7 staff members who wore gloves changed them before moving to another task.

### **SUMMARY**

International standards require health care practitioners to wash hands when they arrive at and leave work, and before and after any contact with a patient. They are to use gloves whenever there is a possibility they will have contact with bodily fluids or contaminated fluids, and to change gloves after every such contact. According to those standards, infection prevention is not taking place in Pediatrics and Maternity at the CPGH. The hospital must take urgent measures to correct this.

Although staff showed some improvement in hand-washing and proper use of gloves by the April follow-up assessment, the numbers remain very low. For standards to improve, hospital staff and administration must renew their commitment to enforce correct practices and continue providing the soap, towels, and gloves. The necessary supplies cost a mere 2.2 KSh per bed per day, minimal cost for steps that save suffering as well as health care dollars by preventing the spread of infection.

### **INITIAL RECOMMENDATIONS**

1. Provide supplies to Pediatrics and Maternity areas, including:
  - 10 towel dispensers
  - A 12-week supply of towels
  - 10 soap dispensers
  - A 12-week supply of soap
  - Separate color-coded rubbish bins for contaminated rubbish
2. Hold education sessions on basic infection prevention methods for Maternity and Pediatric staff, to be given by staff who have attended Infection Prevention Training.
3. Make education ward-based and informal.

4. Target all staff in the patient care area for education.
5. Move on to other wards once education is completed in these two.
6. Conduct a post-education audit 30 days after completion of education.
7. Administration to support infection prevention efforts and commit to supplying materials to all patient care areas consistently.
8. Administration and staff to work to ensure that basic infection prevention measures are implemented hospital-wide and maintained at 100 percent compliance

## **FOLLOW-UP RESULTS**

- MSH supplied towels and soap dispensers for Pediatrics and Maternity, along with a 12-week supply of soap and towels, and color-coded rubbish bins to separate contaminated waste from regular waste, accounting for the 100 percent compliance in availability of supplies.
- Staff already trained in hand washing and waste disposal held education sessions for staff in the patient care areas in Maternity and Pediatrics.
- MSH provided information on infection prevention, including three infection prevention manuals from hospitals in Kenya, the United Kingdom, and the United States.
- Follow-up audit found some improvement in staff behavior.

## **FINAL RECOMMENDATIONS**

1. Hospital administration should support infection prevention efforts and continue a consistent supply of soap and towels to Maternity and Pediatrics.
2. Hospital administration should commit to supplying the remaining patient care areas with soap, towels, and the appropriate dispensers.
3. Hospital should put an alcohol-and-glycerin hand wash on all drug trolleys and supply it to doctors to be used on rounds.
4. The hospital's Infection Prevention Committee should continue informal education sessions in the wards.
5. The hospital's Infection Prevention Committee should continue to develop an infection prevention manual specific to Coast Provincial General Hospital.