

Assessment of Infection Prevention and Control

NIU'UI HOSPITAL – HA'APAI, TONGA

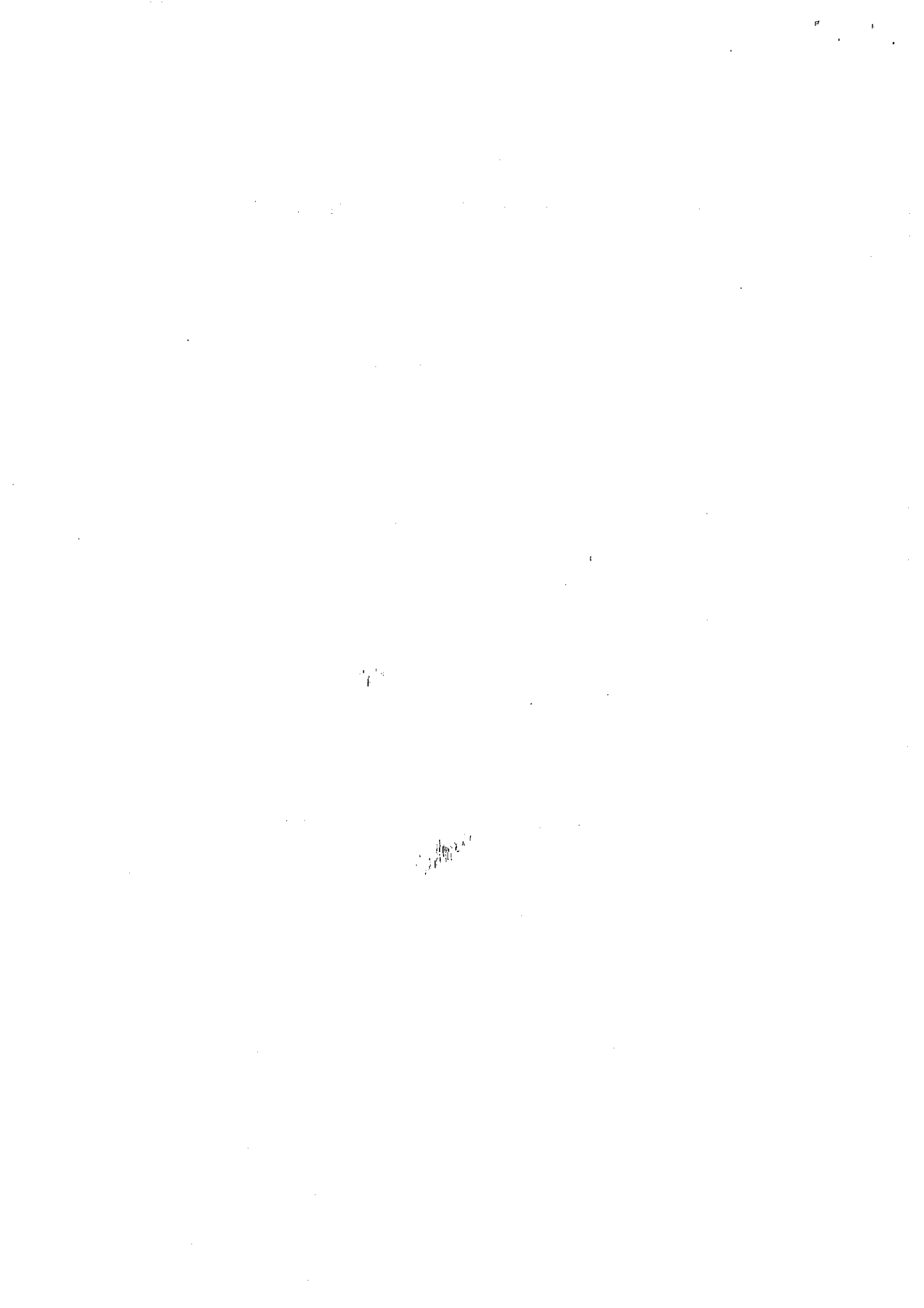
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List of Acronyms and abbreviations

IPC	Infection Prevention and Control
IPCPE	Infection Prevention and Control Programme Evaluation
WHO	World Health Organization
PPE	Personal Protective Equipment
PEP	Post Exposure Prophylaxis
HAI	Hospital Associated Infection
HH	Hand Hygiene
ABHR	Alcohol based hand-rub
CSU	Catheter Stream Urine
IV	Intravenous Cannulation
IDDM	Information data for decision making
TB	Tuberculosis
RN	Registered Nurse

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Background

Globally, healthcare systems are being continuously challenged by the threat of emerging infectious diseases like the Ebola virus disease and multi-drug resistant organisms such as Methicillin Resistant Staphylococcus aureus (MRSA). As more and more emerging infectious diseases and multi-drug resistant pathogens challenge our health care systems and threaten public safety here in Tonga, neighbouring outer islands such as 'Eua, Vava'u and Ha'apai must have the capacity to rapidly manage and respond to epidemics and infectious diseases.

To address the need to enhance capability for infection prevention and control (IPC) in Tonga, the World Health Organization (WHO) in partnership with the Ministry of Health (Vaiola Hospital) had commissioned the Infection Prevention and control assessment at the outer island Hospitals with a view to review the current practices of infection prevention and control with special attention to multi drug resistance micro-organisms, specifically MRSA and to develop recommendations for implementations to improve the Infection prevention and control program within the hospital and other healthcare facilities in Tonga.

Introduction

The Niu'ui hospital is the main hospital in Ha'apai and has a total of 24 in-patient beds. The hospital has no Infection Control Unit on its own but has an Infection Prevention and Control Link Nurse, 'Inaise Fis'ilose. Her core role as a Link Nurse for the Infection Control is to monitor and analyse the IPC standards and compliance in her hospital and report back to Tonga. Unfortunately this has not been implemented successfully and nothing has been achieved on IPC for several years now. Thus it was necessary that this assessment be carried out as soon as possible.

This report focuses on the assessment of the current IPC practices at the Niu'ui Hospital with a view to develop a set of recommendations for implementation to enhance capability of an improved IPC program.

The first section describes the methodology including how the assessment tool was used, followed by the findings of the assessment which describes each of the 4 areas assessed including recommendations for each of the standards under each area.

Methodology

The IPC assessment was undertaken in the hospital by the Infection Control Nurses, Sulia Nonu and 'Ana Faiva.

The IPC Assessment Tool used was the Assessment Tool that Ms. Margaret Leong, a consultant from the WHO, commissioned us to use here in Tonga during her consultancy

period here in Tonga in September, 2016. MS. Margaret Leong had sought permission to use the Infection Prevention and Control Programme Evaluation (IPCPE) assessment tool (see annex 6) from the author Doctor Peta-Anne Zimmerman of Griffith University, Australia in this trip.

This IPC Tool comprises of the most essential standards for an Infection Prevention and control program.

IPCPE Assessment Tool

The tool consists of seven (7) major Areas (listed below), each area consists of components and each component includes of a set of standards to describe the component.

The following are the seven (7) Areas of the IPCPE assessment tool:

1. Organization
2. Epidemiological Surveillance of infection
3. Microbiology
4. Intervention Strategies
5. Sterilization and high level disinfection
6. Personnel Health
7. Hospital Environment and Sanitation

Only 4 of the 7 areas of the IPCPE assessment tool above was used in assessing the hospitals in the outer islands as the rest weren't applicable to use and they were:

1. Intervention Strategies
2. Sterilization and high level disinfection
3. Personnel Health
4. Hospital Environment and Sanitation

Scoring of the assessment tool is done by adding the total number of yes answers and dividing by the total number questions answered (including all yes and no answers) and, excluding the non applicable answers, then multiplied by 100 to get the percentage.

Formula – $\frac{\text{total number of yes answers}}{\text{Total number of yes and no responses}} \times 100\% = \%$

A Non-applicable answer is awarded when a practice or facility is absent or not undertaken in the hospital. The percentage scores are allocated a category for level of compliance based on the following compliance categories:

Compliant	85% and above
Partial Compliance	76% – 84%
Minimal compliance	75% or below

The overall programme score is carried out by adding all the Area scores and divided by the total number of areas assessed. However if one or more of the area score is below 85% then the overall compliance will be partial compliance even if the overall compliance is 85%.

The evaluation was undertaken via direct observation, interviews and sighting of documents.

The following staff consulted during the assessment was as follows:

Department	Person Interviewed
Medical Officer In-charge	Dr.Tevita Vakasiuola
Nursing Sister In-charge	Mele Falemaka
Nurses	'Inaise Fisi'ilose, Seikalama Fonokalafi, Telesia 'Utu'one, Katalina Kaitapu and Tukuange Veatupu
Nurse Practitioner	Paea Fifita
Senior Midwives	Sokopeti Fifita
CSSD	Salesi Fangupo and Siokapesi Mafile'o
Health Inspector	Mosese Fifita
Microbiology	Fe'ofa'aki Nonu
Pharmacist	Siakumi Tu'iniua

Findings

Below are the overall results of each main area:

Vaiola Hospital IPCE Scores

Area	Compliance %	Compliance Level
Intervention Strategies	61%	Minimal compliance
Sterilization and high level disinfection	64%	Minimal compliance
Personnel Health	7%	Minimal compliance
Hospital Environment and Sanitation	55%	Minimal compliance
Total Overall Compliance	47%	Minimal compliance

In view of the above, the assessment results should be considered as baseline results for further improvement. The same tool can be used internally to measure progress of the implementation of recommendations from this assessment.

1. Area: Intervention Strategies

1.1 Component: Interventions to improve IPC

1.1.1 Hand Hygiene (HH) facilities to reduce the risk of cross infection

This Area on Intervention Strategies is most important and consists of the following standards:

- Hand Hygiene
- Use of gloves
- Urinary catheters
- Intravenous cannulation
- Isolation room
- Antibiotic restriction and preoperative prophylaxis

It was noted that:

- HH sinks were clean but aren't available in all clinical areas;
- Bar soaps are used instead of liquid soaps;
- Single use paper towels are not available at the HH sinks whereas linen towels are still used;
- Alcohol Based Hand rub (ABHR) is very limit in nubers.

Staffs were noted to:

- Be wearing watches, stoned rings and wrist jewellery whilst carrying out patient care;
- have short clean nails;
- have not received training in HH procedure in the past year;
- be unclear on the appropriate use of AHR (i.e. ABHR should not be used when hands look visibly dirty);
- have no posters of HH on walls of the wards;
- Not perform HH in accordance with the 5 moments for HH.

Recommendations:

- ABHR should be made available at every clinical working area in the hospital;
- Need more HH sinks;
- Bare below the Elbow policy to be advocated, enforced and implemented in the hospital;
- Install paper hand towels brackets in every HH sink area so that paper hand towels can be safely stored in it for staff to use and not use linen towels to dry hands ;
- Patients need to be educated on HH and have access to HH products in their rooms as well;
- HH education should be conducted in this hospital on an annual basis;

1.1.2 Standard: Clinical Practice to reduce the risk of cross infection to patients whilst providing appropriate protection to staff (application of standard precautions)

Gloves were observed to be used for:

- Contact with sterile sites
- Contact with mucous membranes
- Single use items

- Gloves are not commonly worn for venipunctures
- HH not always performed before and after use of gloves.

Personal Protective Equipment (PPE) was noted that:

- Very limited PPE (donated) supplies by donors are available;
- Single used aprons or plastic aprons were not available;
- There is unavailability of full body, fluid repellent gowns for procedures that are at risk of extensive splashing of body fluids on to the skin;
- *Surgical face mask or simple face mask protection is available;*
- Particulate filtration masks are not available for pulmonary tuberculosis precaution;
- Eye protection is also not available for procedures that are at risk of body fluids splashing into the face and eyes of staff.

Recommendations:

- Annual education on appropriate use of gloves, full PPE donning and removing and HH;
- Disposable plastic aprons and gowns should be placed on the Ministry of Health's consumables catalogue so that supply can be consistent, plastic gowns/aprons can be worn for contact precautions and in the absence of repellent gowns for procedures that are a risk of extensive splashing of body fluids on to the skin e.g. vaginal deliveries and cleaning contaminated equipment and linen;
- Purchase Particulate filtration masks for airborne precautions should be included into the medical consumables list.

1.1.3 Standard: Clinical practices to reduce the risk of cross infection to patients whilst providing appropriate protection to staff with focus on Urinary Catheters

It was noted that:

- Urinary catheters and drainage bags were stored appropriately in a cupboard.
- Indwelling catheters are only inserted after considering alternatives methods of management and reason for insertion is documented by Doctors and Nurses.
- Catheterization is performed aseptically as (procedure described by a Nurse). Please note that nurses only insert female catheters whilst doctors insert catheters for males.
- Catheters are connected to a closed urinary drainage system.
- Catheter bags was seen suspended and tied onto bed rail to avoid trauma and reduce risk of cross infection;
- HH is not usually performed (as described by a nurse) before manipulating a patient's catheter.
- When emptying the urinary drainage bag (as described by a nurse) that:
 - Non-sterile gloves are worn;
 - Eye protection not worn;
 - Plastic apron not worn;
 - HH performed after removal of gloves;

Recommendations:

- Staff to be educated on the indications of wearing Eye and mask protection in clinical procedures.

1.1.4 Standard: Clinical practices to reduce the risk of cross infection to patients whilst providing appropriate protection to staff with focus on Intravenous Cannulation (IV)

- IV cannulation activities noted:
 - Skin is disinfected prior to cannulation but only at times not allowed to dry (as described by nurse);
 - Disinfectant used is SVM that is manually impregnated into dry cotton balls in a container;
 - SVM swabs are stored in these containers and is unsafe to use in IV cannulation or injections as they provide a favourable ground for bacteria infestation and can cause cross contamination ;
 - No documentation in patient notes regarding insertion of IV details including dates to be replaced (e.g. 72 hours);
 - HH are not routinely performed prior to manipulating IV lines (as described by a nurse);
 - Used IV giving set lines are not discarded once disconnected for intermittent infusions but are re-used.

Recommendations:

- IV Cannulation and IV Drug administration guidelines should be incorporated into the National IPC guideline and training conducted for all clinicians in 'Eua on an annual basis.
- The 72 hours IV Cannula Policy should be enforced in the hospital to prevent and reduce rate of IV cannula related HAIs. All Nurses should be trained to carry out IV cannulation so that this Policy is effectively implemented in the hospital.
- Include alcohol swabs in the consumables catalogue to ensure consistent supply.

1.1.5 Standard: Clinical practices to reduce the risk of cross infection to patients whilst providing appropriate protection to staff with focus on Isolation

Isolation facilities:

- The hospital has an isolation room that was dedicated for that sole purpose several years ago, but has now been used as a storage room.

Recommendations:

- Re-dedicate the Isolation room for that sole purpose only and not for storage;
- PPE supplies to be included in the consumables catalogue so that supplies do not run out.
- Annual training on PPE is to be carried out on an annual basis.

- It was also noticed that most procedure trays had expired dates on them. Expiry date for trays must not exceed 2 weeks from date of sterilization.

Recommendations:

- All nursing staffs need to be made aware that all oxygen tubes etc. Should be cleaned first with detergent before soaking in sodium hypochlorite 1% for 20 minutes then dried packed and stored away;
- Annual education and awareness on procedures for cleaning and disinfection with regular audits.
- General cleanliness of the environment should be maintained with regular audits by the IPC Link Nurse and reports presented at management meeting for further action;
- Need to have a Sluice or dirty utility room for bed pans etc., stored in;
- Laryngoscope blades should be cleaned and sent for sterilization;
- Biomedical departments should develop a pre-planned maintenance program for the hospital.
- Label trays and reprocess once date expires or is more than 2 weeks from day of sterilization.

Reference List

Zimmerman P, Yeatman H, Jones M, Murdoch H. *Evaluating Infection Control: A review of implementation of Infection Prevention and Control in a low income country setting.* AM J Infection Control 2012.

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