



# Establishing carbapenem resistant organism surveillance, prevention, and control in a middle-income country: implementation of a hospital-based program in Fiji

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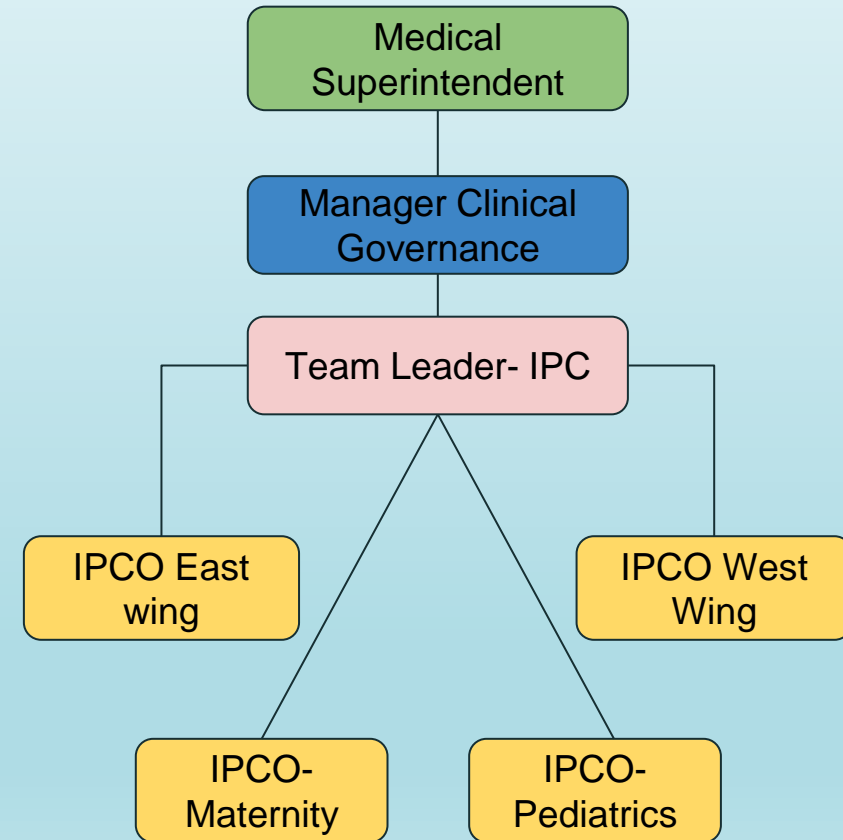
# Background

- AMR is a major public health threat with the highest burden being reported from low- to middle-income countries

## Colonial War Memorial Hospital (CWMH)

- Largest referral hospital in Fiji
- Services: Surgery, internal medicine, Obs&Gyn, ICU, emergency, microbiology, other subspecialties
- Carbapenem resistant organisms (CRO) such as *A. baumannii*, *P. aeruginosa* and Enterobacterales have been reported in CWMH with outbreaks occurring in adult and neonatal ICUs

### IPC team structure



# Aims and Objectives

- Project “Preparing Fiji for Pathogens with Critical Antimicrobial Resistance” was undertaken at the CWM Hospital (May 2022 - December 2023)

## Aims:

- To support the hospital’s readiness for prompt detection, management and prevention of infections caused by CRO

## Objectives:

- Describe steps taken to establish CRO surveillance, prevention, and control interventions
- Share the results and lessons learned from the project with other Pacific Region countries and globally

# Methodology

## 1. In-country consultation and project agreement

- Consultation meeting
- Priority Pathogen identified => CRO
- Agreement signed

## 2. HR support

- In-country project staff

## 3. IPC and Lab baseline assessment

- Review of literature, standard operating procedures (SOPs) and guidelines
- In-country table-top and walk-through exercises

## 4. Education & communication

- Train-the-trainer approach (in-country training)
- Joint mentorship exercises between the CWM and Melbourne team (online meetings).
- Patient education materials and translated to local language (Fijian, Hindi)

## 5. Knowledge, attitude and readiness survey

- Pre and post implementation

<https://doi.org/10.1186/s13756-024-01439-9>

# Results and Discussion

## 1. Baseline IPC and Lab capacity assessment findings

### IPC

- Nurse to patient ratio 1:2 (ICU) and 1:5 (Acute wards)
- Wards are open plan, two isolation rooms
- No single rooms with en-suite bathroom
- Shared hand hygiene sinks and toilets
- Hospital had IPC Committee but meetings not being held consistently
- No specific SOP for CRO case management
- Cleaning was done using 3 steps (detergent, disinfectant, water)

### Lab

- Capacity to perform culture, AST and modified CIM tests
- No capacity for PCR or WGS
- SOPs exist for all laboratory procedures



Tabletop exercise participants Suva, Fiji (11May 2022)

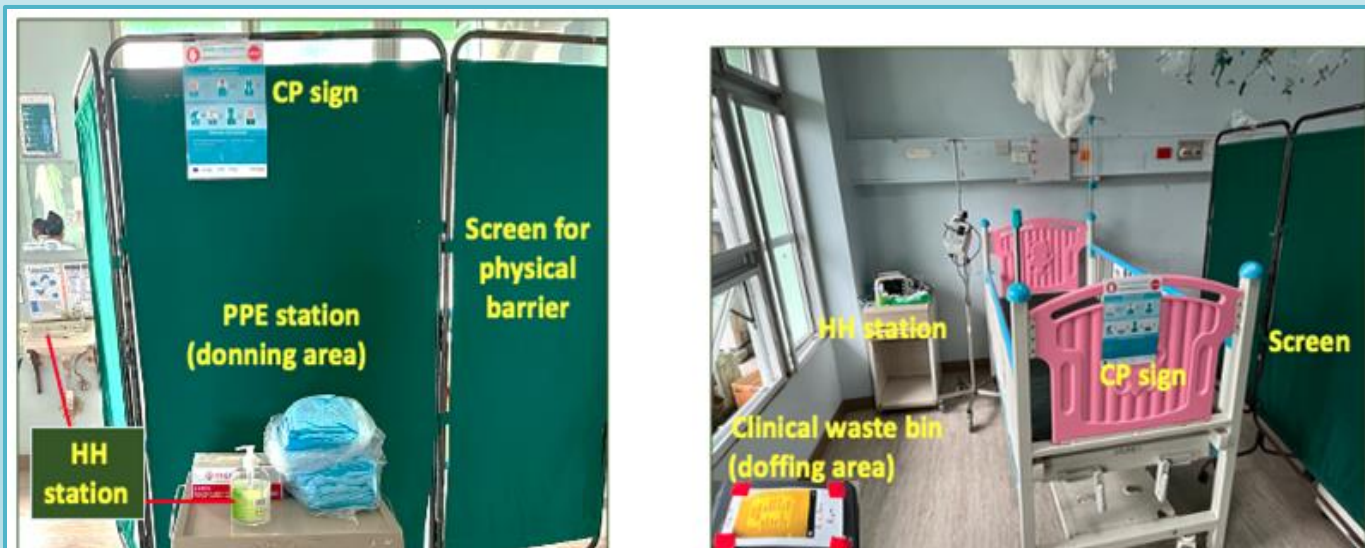
# Results and Discussion

## 2. Development and implementation of SOPs for CRO case management

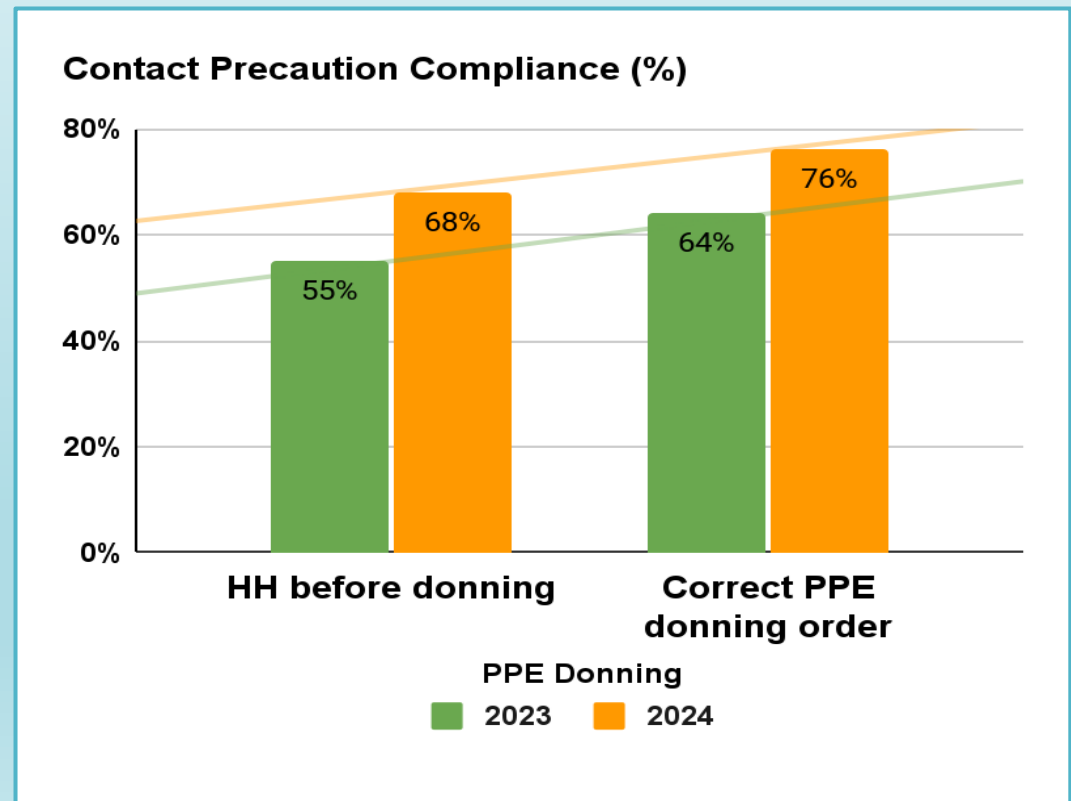
- Isolation patient in a designated area
- Contact Precautions (at bedside)
- Cohorting patients

## 3. Development of contact precautions compliance audit tools

- Compliance improved overtime



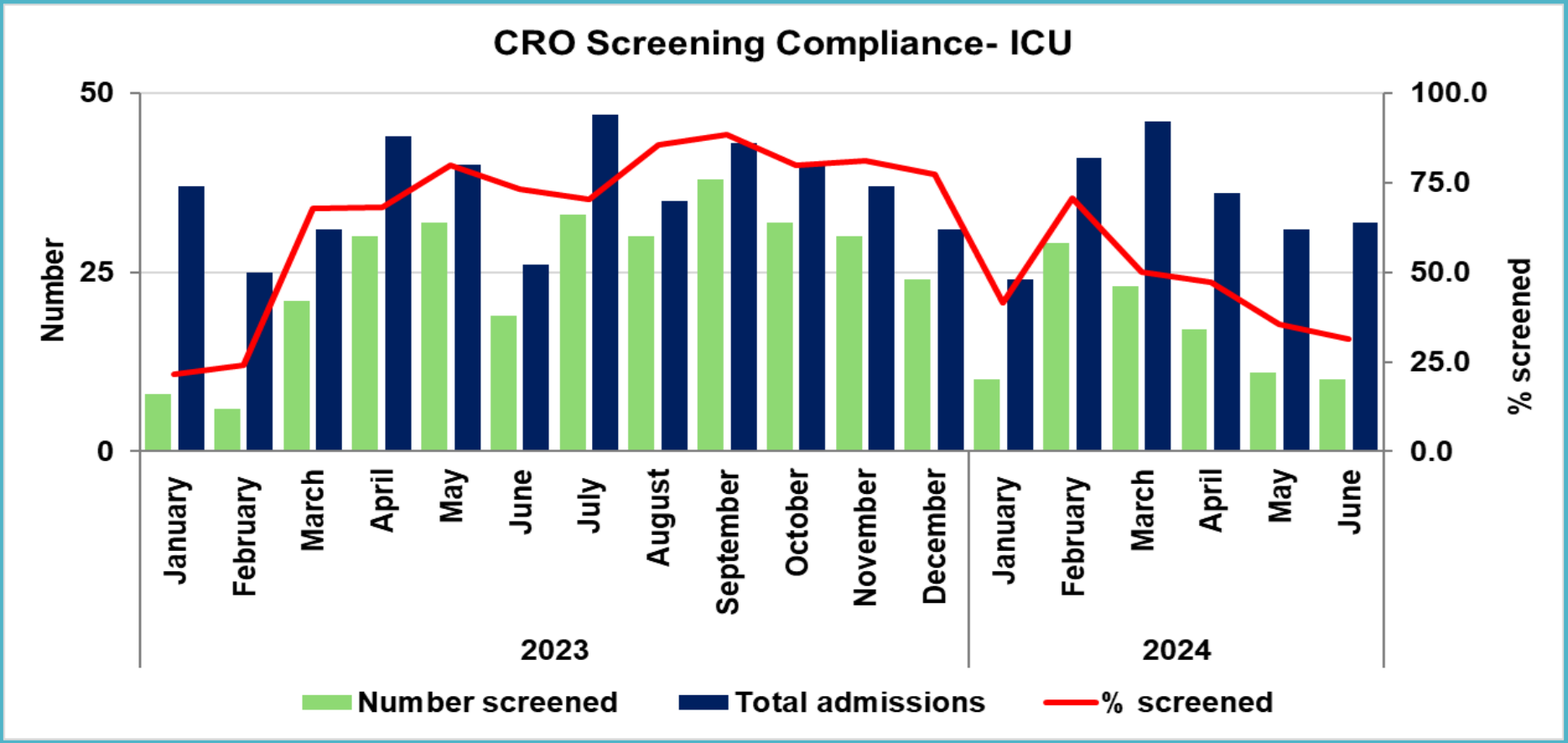
Set up of Contact Precautions at bedside



# Results and Discussion

## 4. Active screening for CRO colonization among high-risk patients

- Enabled early detection of CRO cases and implementation of contact precautions



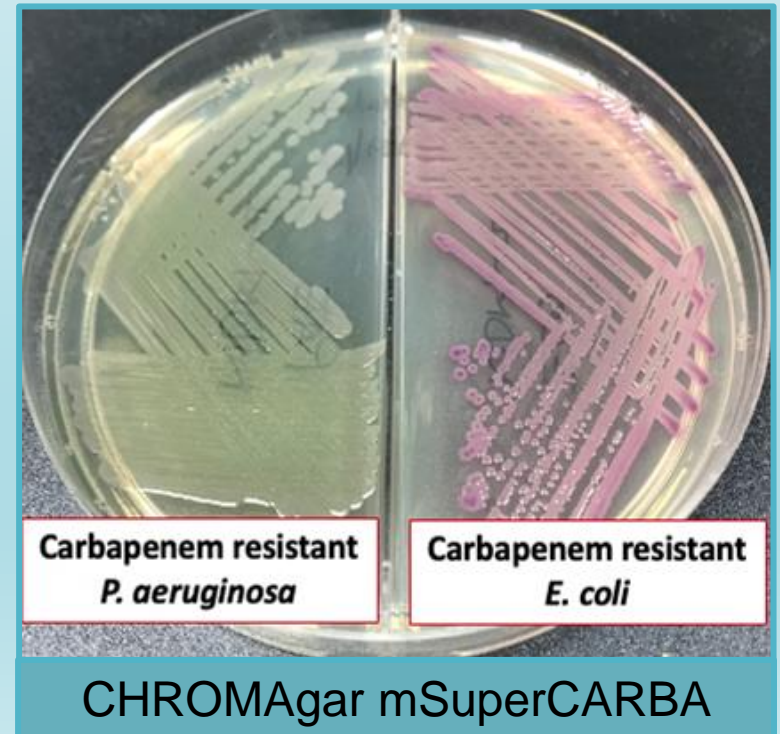
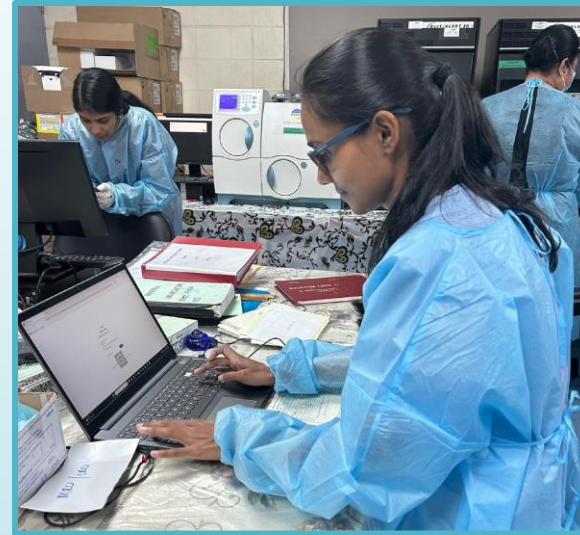
# Results and Discussion

## 5. Development and implementation of laboratory SOP

- SOPs for processing screening samples
- Procurement of essential consumables (PCR testing kits, meropenem disc and CRO selective media)

## 6. Development and implementation of Environmental Cleaning SOP

- Refer to Poster Presentation (#36) by Mrs Ashlyn Datt from Fiji



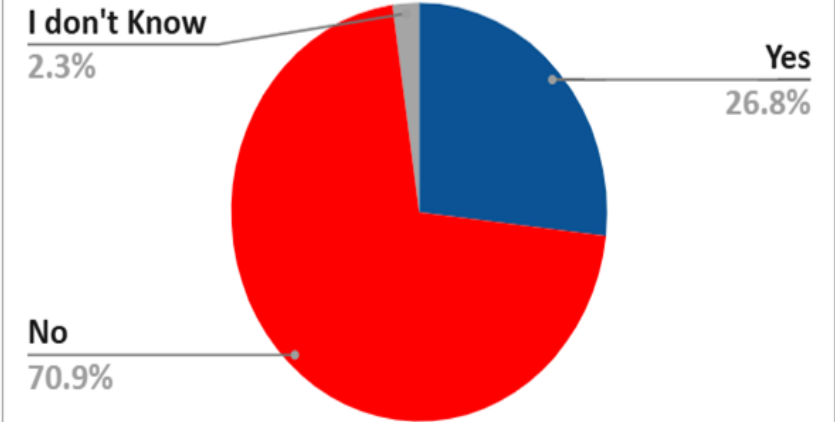
# Results and Discussion

## 7. Training of IPC/ Lab Staff

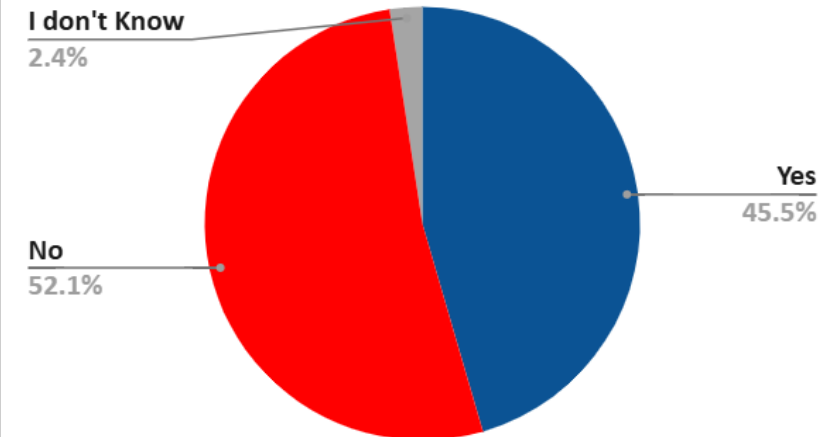
- IPC team- onsite and online
- Hospital staff - 43 training & education sessions for over 600 staff
- Lab staff – onsite and online

- Knowledge, attitude and readiness of HCWs

Pre-implementation (IPC Training)



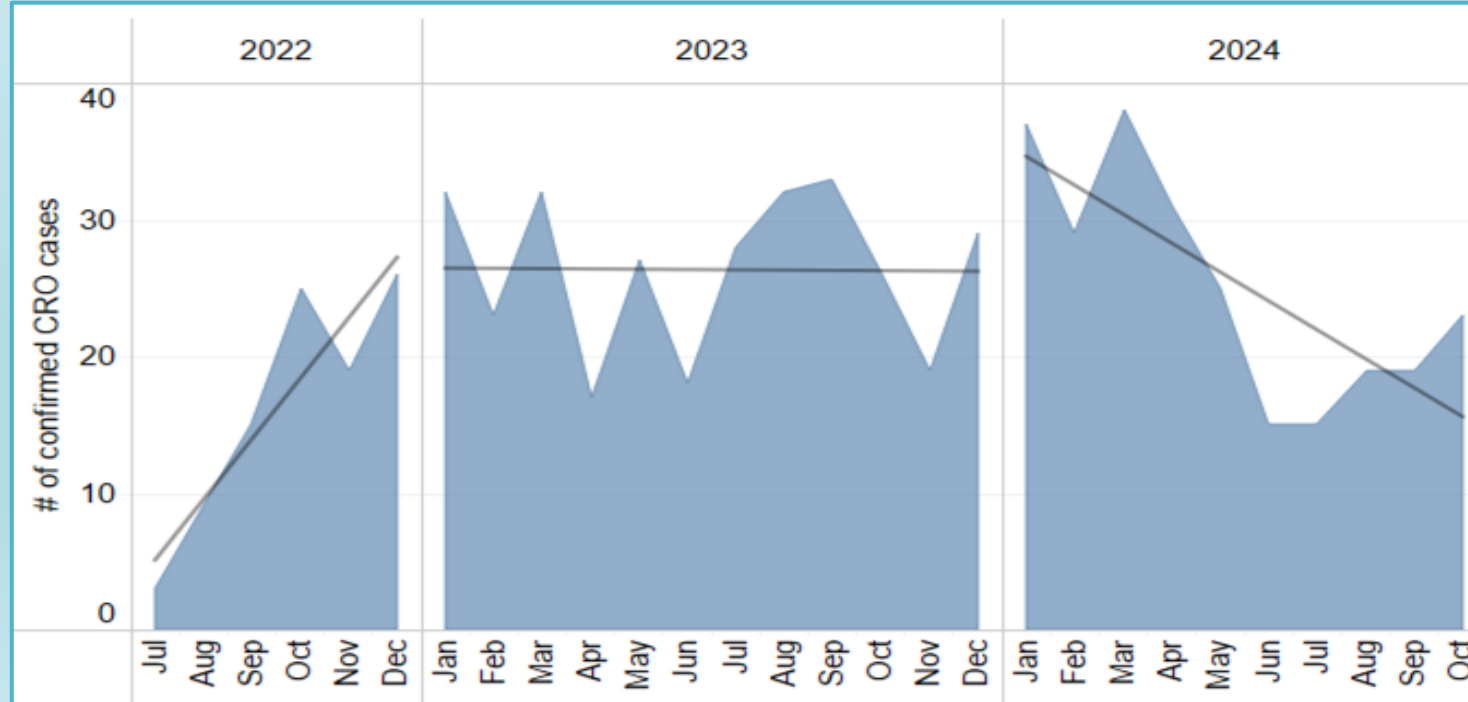
Post-implementation (IPC Training)



# Results and Discussion

## 8. CRO communication and Surveillance.

- Improved CRO notification and communication systems (phone/message group)
- Establishment of an active CRO Dashboard
- CRO data collection by IPC team
- CRO alert (documentation in folder, electronic patient management system)



# Results and Discussion

## 9. Coordination of CRO interventions

### Outbreak Management Team

- Coordinate CRO outbreak response
- Recommendations submission to IPCC
- Procurement of newer and more effective antimicrobials

### Hospital IPC Committee

- Coordination, monitoring and evaluating the IPC programme
- IPC team supported
- ACIPC Foundations of IPC course undertaken



# Limitations and Challenges

- Infrastructure related constraints
- Shortages and inconsistent supply of essential IPC, laboratory and cleaning consumables
- Shortage and high turnover of HCWs in the hospital



# In summary

- CRO surveillance, prevention and control strategies tailored to the facility's needs and capacity was well established
- CRO awareness among HCWs improved
- Well established CRO case detection and management
- Regular audits and feedback provides continuous improvement opportunities however sustained support is required with challenges.
- The integrated approach involving multidisciplinary teams to set up a system could potentially be adapted to suit other low- and middle- income countries in the Pacific and globally

# Acknowledgments

## Colonial War Memorial Hospital

- IPC and Clinical governance
- Medical Superintendent
- Hospital staff



## Project team

- Doherty Institute
- Royal Melbourne hospital



## Fiji Program Support Facility

