

## INTRODUCTION

Healthcare-associated infections (HAIs) is a major challenge to healthcare professionals. Protocols with appropriate cleaning chemicals and technology still poses limitations such as:

- Limitation of surface disinfectants due to long chemical contact time
- Inconsistency cleaning may result in areas missed out
- Limitation of Hydrogen Peroxide Vaporisation (HPV) for daily room disinfection due to long decontamination time

Therefore, Germicidal Ultra Violet-C (UV-C) is used to improve disinfection of environmental surfaces and enhance environmental hygiene.

## CHARACTERISTICS OF UV-C

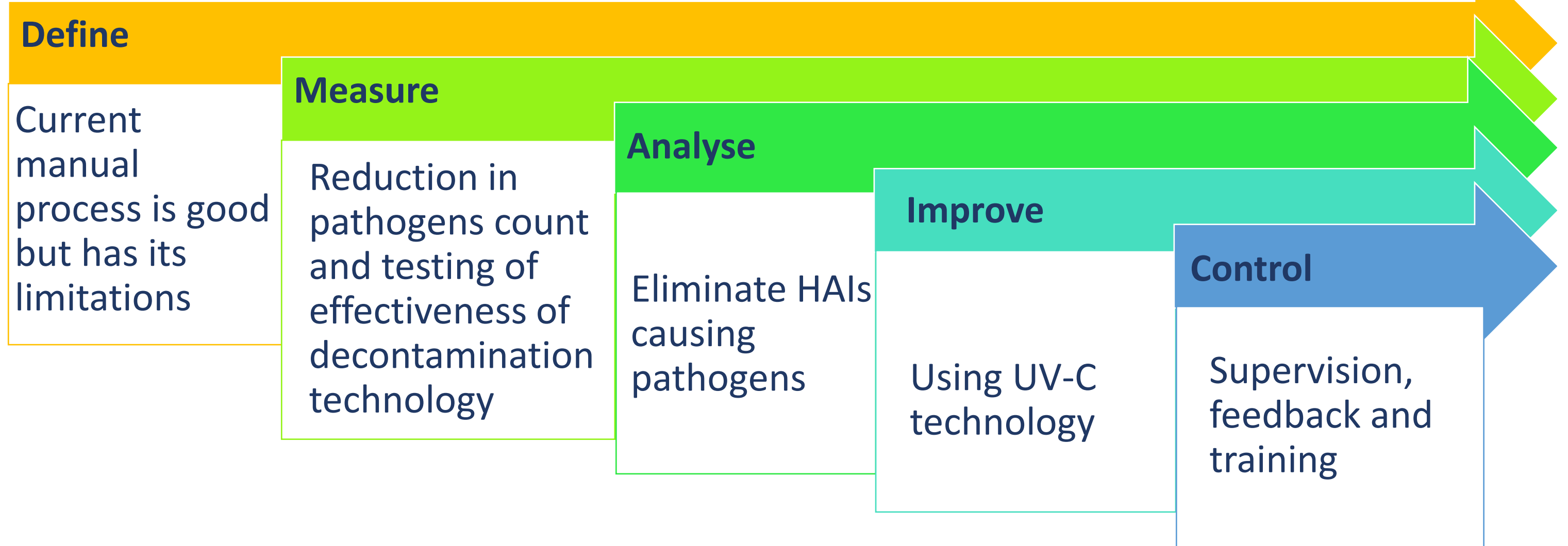
- Fast and relative short exposure time required to achieve 4-log disinfection
- Green technology , uses no chemicals

## AIM

- To make use of UV-C as an adjunct disinfection to enhance the environmental hygiene
- To decrease the risk of acquiring HAIs
- To enhance patient safety



## METHODOLOGY



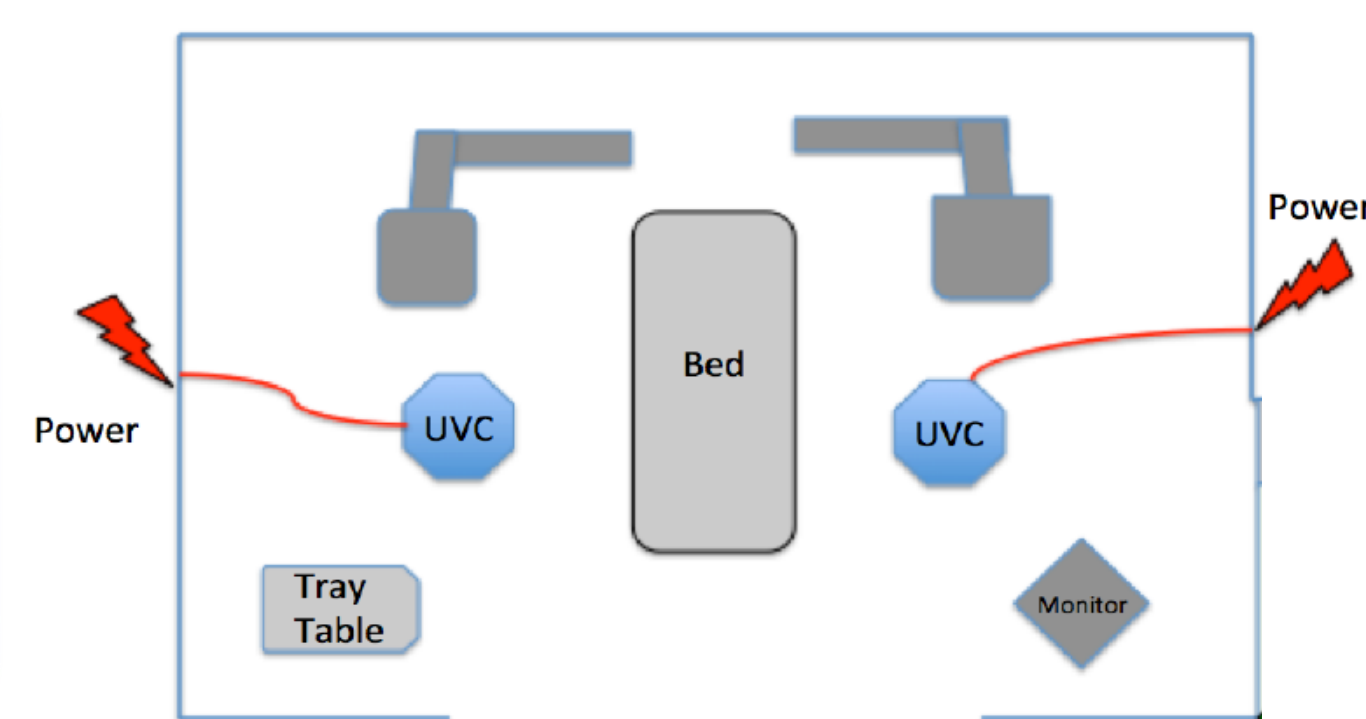
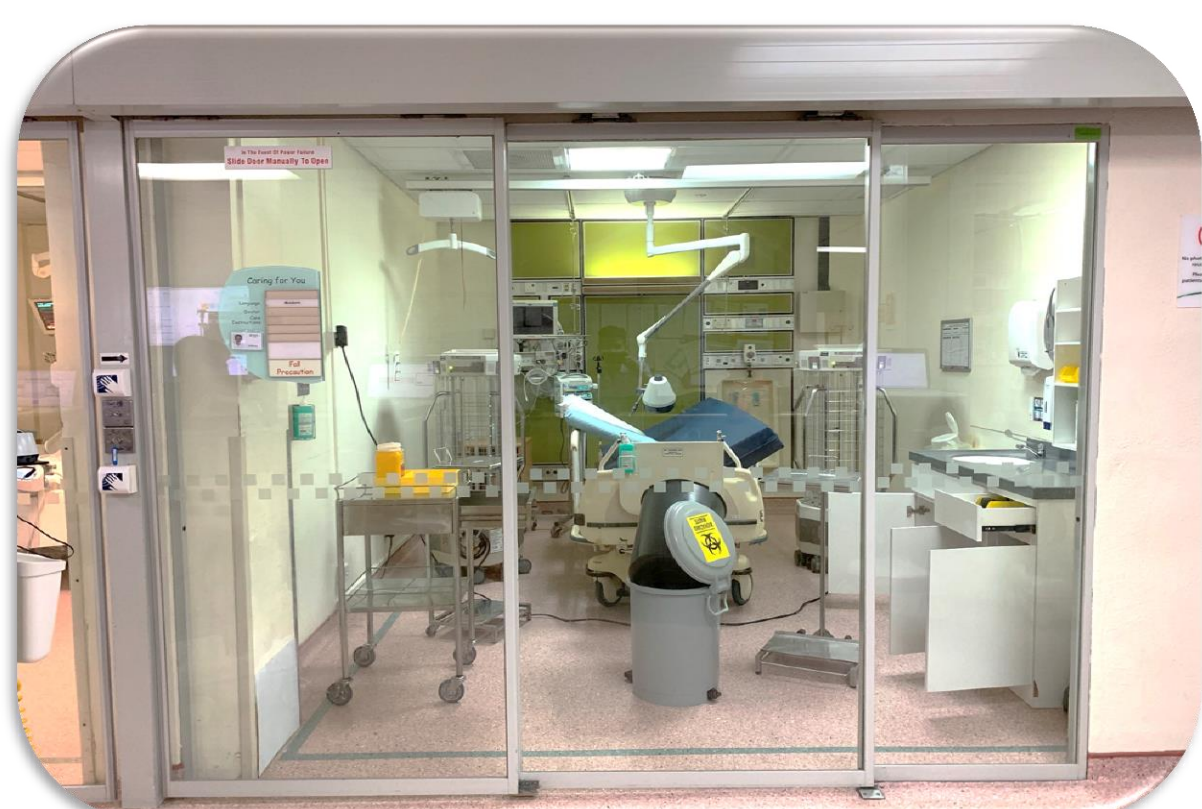
## UV-C DISINFECTION PROCESS

### 1. Perform general cleaning

- Performed by housekeeper

### 2. Stage the room

- Remove linens
- Open all drawers and interior doors
- Prop up mattress and bins



### 3. Placement of UV-C machines

- Position the UV-C machines in the room



### 4. Exit the room and start decontamination process

- Position portable screen at glass doors
- Turn on UV-C machines using remote control



### 5. UV-C meter

- Ensure UV-C rays do not penetrate through the glass room doors for patient and staff safety



### 6. Decontamination completes

- Push out UV-C machines
- Restore back to original state

## RESULTS

Photovoltaics stickers test is conducted on 14 high touch points to test effectiveness of UVC

Toilet Seat Cover	Green	Green
Toilet Flush	Green	
Toilet Grab Bar	Green	
Toilet Door Handles	Green	
Sink	Yellow	Yellow

Location	Photovoltaic Stickers Result
Bed Handrail	Green
Bedside Locker	Green
Bed Control Panel	Green
Cardiac Table	Green
Nurse Call Button	Green
Chair	Green
Light Switches	Green
Room Door Handle	Green
Phone	Green

Colour of the stickers change from yellow to green for 13 high touch points except for the sink as it is placed behind the sink tap which UV light could not penetrate through.

This indicates that the UV-C can achieve up to log 4 reduction in bioburden.

## CONCLUSION

UV-C has proven to be effective in reducing bioburden up to log 4 from the photovoltaics stickers testing.

This in turn translates to an enhanced environmental hygiene which will help to improve patient safety.

This study can be further improved with future studies on associated reduction in HAIs.

