

Enhanced Endoscope Decontamination Process – Hydraulic Sink, Scope Buddy Plus and Veriscan

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Aim

Our objective was to enhance the endoscope decontamination process by upgrading the decontamination room. With this, we hope to achieve greater standardization in our processes and close the gap in the track and traceability of the endoscope decontamination process.

Background

Our endoscopes are reprocessed multiple times daily. Reprocessing takes place at the endoscope decontamination sink. Several areas for improvement in reprocessing were identified.



1) **Stationary** height of sink

Poor body posture when reprocessing the endoscope

↑ Risk for **health implications** over time



2) **Rectangular** shape of sink

Did not fit the curvature of the endoscope

↑ Risk for **endoscope damage**



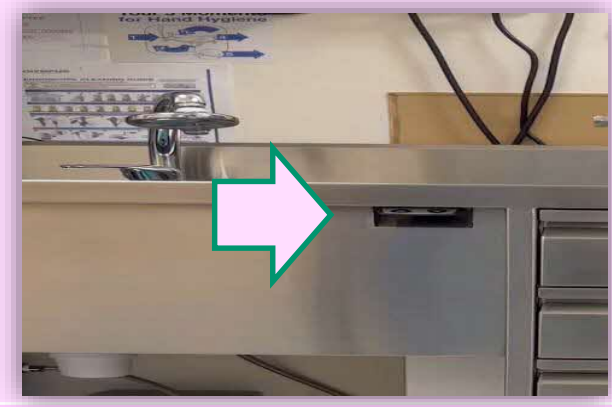



3) Manual **wet** leak test + **Manual** flushing

Lack of **standardization, accuracy & traceability**

Team Members

Name	Designation	Department
Nurul Emylia Binte Mohameed Jufferie	Senior Staff Nurse	Endoscopy Centre
Alice Diangkinay Arellano	Senior Staff Nurse	Endoscopy Centre
Sim Fang Yi Alicia	Senior Staff Nurse	Endoscopy Centre
Kendrick Nigel Co Tan	Assistant Director	Peri-Operative Service

Interventions / Implementation

1) Hydraulic sink	2) Redesign of the sink – Shape/ Diameter	3) Veriscan – Auto endoscope leak tester	4) Scope Buddy Plus – Auto flushing and dosing
			
Height of sink is adjustable	Round shape > Fits the alignment of endoscope	Detects leakage automatically and without need for fluid submersion	Automation and mechanization of reprocessing steps
Simply with a push of a button	Marking > Accurate water measurement > Removes need for measuring and pouring of water using a jug	Storage and retrieval of leak test data	Storage and retrieval of reprocessing data

Onward 2026

Developing a Resilient and Sustainable Workforce

These interventions aimed to improve the endoscope decontamination room with emphasis on proper body mechanics and ease of access to essential reprocessing devices. By prioritising the needs of our staff, we strive to build a **sustainable workforce**.

Furthermore, when our staff are not riddled with body aches and fatigue, they can focus on reprocessing the endoscopes more **efficiently** and **effectively**. This will aid in our **procedural turnaround time** and enable us to cater to the **growing demand** of endoscopy services. Increased reprocessing effectiveness is pertinent in maintaining **infection control and patient safety**.

Results & Outcomes

Endoscope reprocessing with hydraulic sink



- **Good body posture** maintained during endoscope reprocessing
- **Mitigates** workplace injury

- ↓ Incidences of endoscope **damage** during reprocessing
- Improved water **conservation** i.e. **10L** of water less for each cycle

- ↓ Potential **human error** in detecting a leak
- **Standardisation**
- Enhanced accessibility of data retrieval for **track and trace** purposes

Veriscan leak test cycle printout

```

VERISCAN LT
SN: 201032102117
Version: 2.22

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05/31/23 11:45
Scope: S/N: 501
Run ID: 1095
Test Duration: 70 sec
Test Result: PASS
Test Setting: STANDARD 1
Knobs Turned
*****
    
```



Bar chart: Water savings over 3 months

Data exported from Scope Buddy Plus

Run Mode	Serial Number	Cycle Started	Cycle Finished	Endoscope ID	User ID	Dosing Percentage	Dosing Volume (mL)	Dosing Started	Dosing Finished	Flushing Started	Flushing Finished	Flushing Dosing (m:ss)
Automatic	18101501	15/9/2023 9:40	15/9/2023 9:50	02-2649255	107	0.5	50	15/9/2023 9:40	15/9/2023 9:40	00:00	15/9/2023 9:50	15/9/2023 9:54
Automatic	18101501	15/9/2023 10:00	15/9/2023 10:11	08-2081236	107	0.5	50	15/9/2023 10:00	15/9/2023 10:00	00:00	15/9/2023 10:07	15/9/2023 10:09
Automatic	18101501	15/9/2023 10:11	15/9/2023 10:22	02-2649255	107	0.5	50	15/9/2023 10:11	15/9/2023 10:11	00:00	15/9/2023 10:18	15/9/2023 10:20

Conclusion

The improvements in our endoscope decontamination room has enhanced the endoscope decontamination process through minimising the risk of workplace injury; achieving standardization and accuracy through automation; and facilitating data retrieval for track and trace purposes.