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OPTIMIZING EFFICIENCY IN CSSD: ENHANCING COST-EFFICIENCY AND TIMESAVING IN REPROCESSING SEMI-CRITICAL INSTRUMENTS/N95 MASKS BY CANNIBALIZING METHOD

MR. YUVARAJ, DR. PRIYADHARSHINI. S, DR. SOWMYA. H. R, DR. AILEEN J

RAMAIAH UNIVERSITY OF APPLIED SCIENCE

RAMAIAH UNIVERSITY OF APPLIED SCIENCES

BACKGROUND

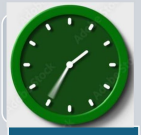
- Personal protection equipment (PPE) is essential for protecting medical personnel and patients during outbreak of infectious diseases like COVID - 19.
- In particular, the use surgical masks and N95 respirators is recommended in transmission of infectious diseases.
- Due to the rapid emergent of COVID -19 and stringent requirements of proper PPE protocol, many hospitals were running dangerously low on these devices.
- As a result, both patient and healthcare providers are at increased risk of contacting and spreading COVID-19

AIMS

The aim of this study is to evaluate the cost and time savings achieved by repurposing laboratory blood cold storage into UV disinfector, and compare it's cost effectiveness with UV and plasma sterilization methods

OBJECTIVES

1. To reduce the cost of reprocessing of N95 mask during COVID -19



2. To reduce the time of disinfection using UV disinfector

3. To compare the cost of UV sterilizer with the new cannibalized equipment

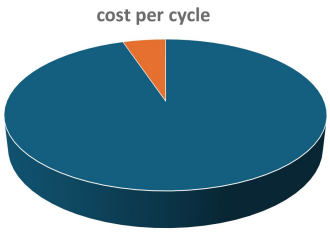
METHODS

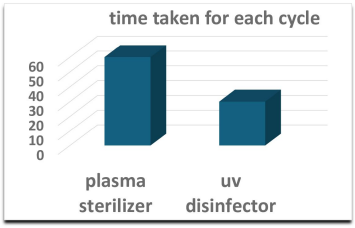
- Laboratory blood cold storage was converted into UV disinfector using cannibalizing technique during COVID -19 to reuse the N95 mask and semi critical equipment in post pandemic

- Cost analysis was done using secondary data in CSSD, to analyse the benefit of new UV disinfector

- TAT of the sterilization of N95 was done using process mapping and secondary data of the CSSD log

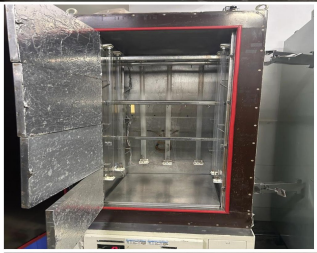
- Costing study was done to check the effectiveness of the cannibalized UV disinfector





Cost for cannibalization of condemned laboratory cold storage into UV disinfection chamber

ITEM	COST	TOTAL NO OF ITEMS AND COST
256Nm ultraviolet tube light	2100/-	2100x6=12600/-
Timer	1000/-	1000/-
Buzzer alarm	200/-	200/-
cable	200/-	200/-
Limit switch	800/-	800/-
Welding clam, handle	2000/-	2000/-
Manpower and miscellaneous charges	2400/-	2400/-
TOTAL		20,000/-(approx)



RESULTS

- The results showed that there was significant reduction of time of disinfection using the new equipment (I.e. 30 Min compared to 60 min using the UV disinfector.)

- The cost saved from re sterilization over buying the new N95 mask during COVID 19 pandemic is Rs37,69,000/-(54,00,000-16,31,000)

- The capacity of the new equipment is 48 cycles per day and the cost saved from buying another new UV disinfector i.e Rs2,80,000/-
- The cost analysis carried out in the CSSD to compare the cost of UV sterilizer versed making a cannibalized equipment showed that there is significant savings to the management by 83% if they prefer to make a new disinfector using cannibalization technique conclusion

DISCUSSION

The study conducted a cost analysis utilizing secondary data from the Central Sterile Supply Department (CSSD) to assess the benefits of the new equipment in conjunction with UV disinfection. Additionally, the turnaround time (TAT) for sterilization of semi-critical equipment was evaluated using process mapping and CSSD log data. Through cost analysis and assessment of turnaround times, it was evident that this approach offers substantial economic benefits and streamlined processes compared to traditional methods

CONCLUSION

Promising Solution for PPE Shortages

Insights into Feasibility and Cost-effectiveness

Considerations for Future Research and Implementation

REFERENCE

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