



# Improving current practices for reprocessing of EEG electrode wires to increase staff efficiency and reduce cross infection risks towards patients



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## BACKGROUND

Electroencephalography (EEG) involves the usage of 28-30 electrode wires that are placed onto the scalp, to measure brain wave activities which help in the diagnosis of epilepsy/ seizures, and other brain encephalopathy.



Conventional practices of reprocessing of EEG electrode wires involve Neuro technologists manually cleaning and disinfecting the electrode wires within the procedure room after each patient, which is a labour intensive and time-consuming process.

Disadvantages of manual reprocessing		
Environment	Disinfectant Usage	Staff cleaning techniques
Utilises hand washing basin	Exposure to vapour from disinfectant solution	Inadequate reprocessing increases risk of cross-infection
Performed in procedure room	Time consuming	Labour intensive

## AIM

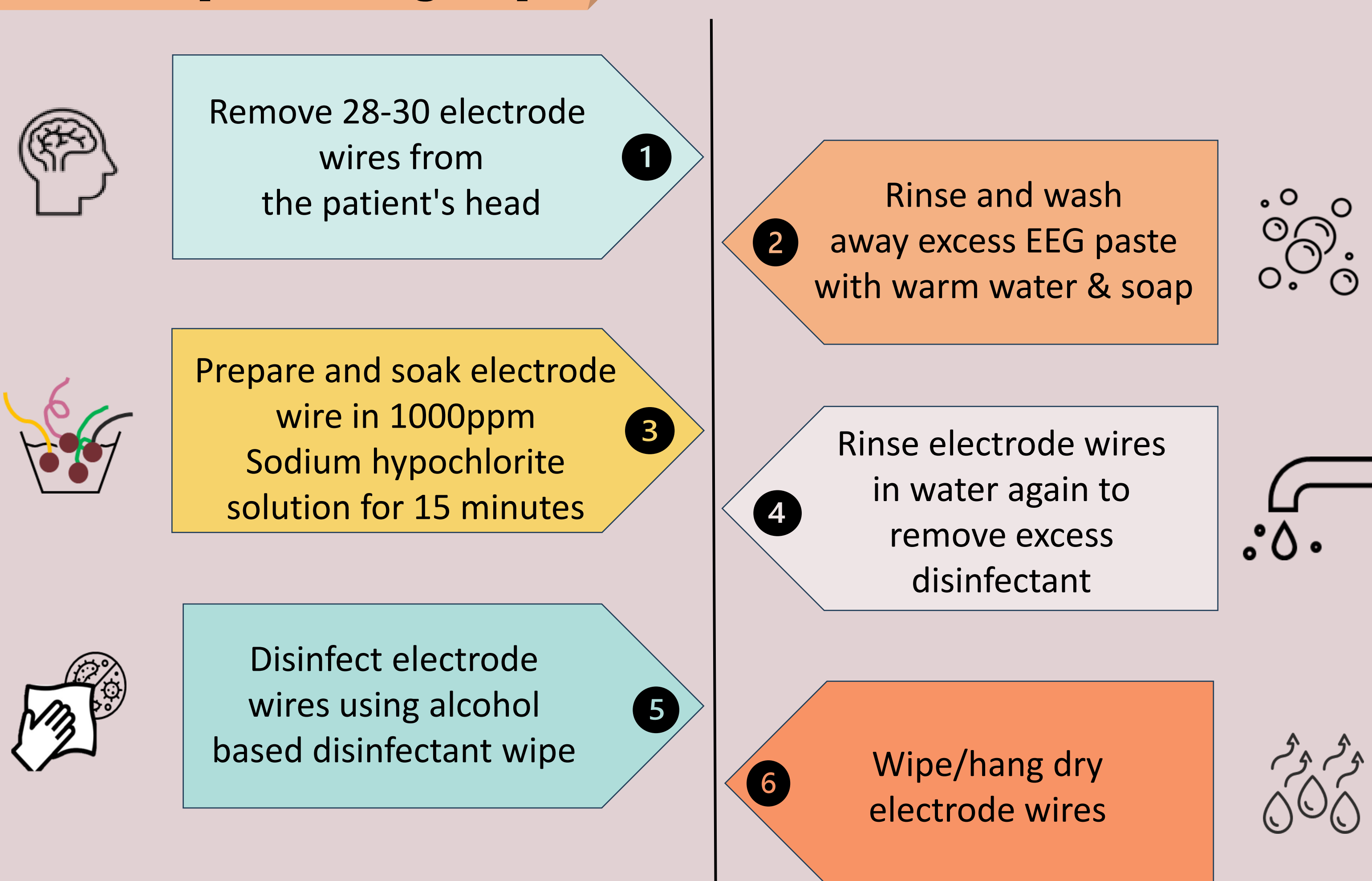
- To improve on staff efficiency when reprocessing EEG electrode wires by reducing the time taken.
- To reduce risk of potential cross infection.

## METHODOLOGY

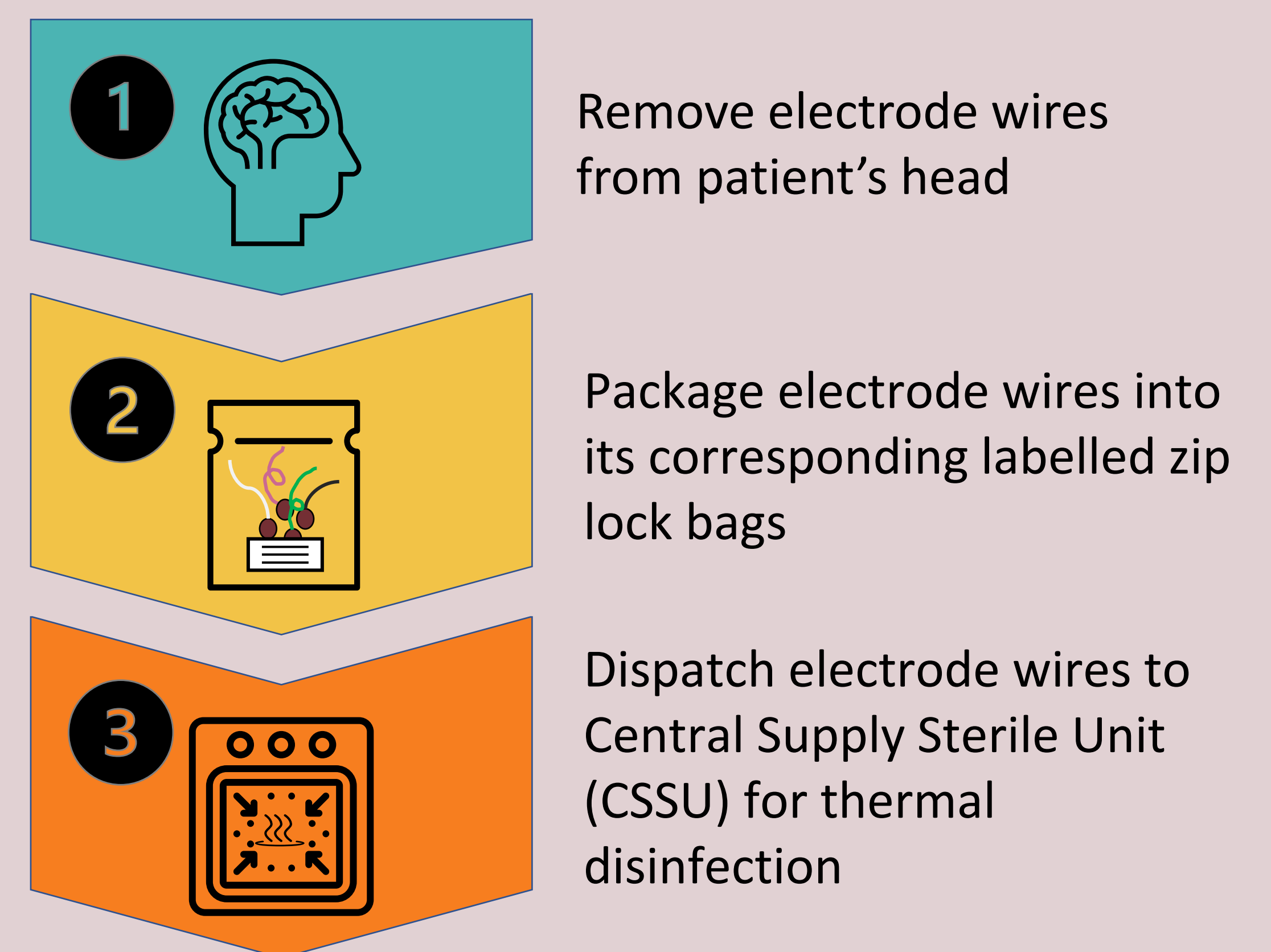
Implementation took place in February 2023

- Before implementation, electrode wires used were not compatible with thermal disinfection, and could only be manually reprocessed by Neuro technologists.
- All EEG electrode wires are converted into thermal disinfection compatible electrode wires that can be reprocessed using thermal disinfection.
- With the conversion, the electrode wires can now be packaged and dispatched to the Central Sterile Supply Unit (CSSU) for thermal disinfection.

### Manual reprocessing steps:



### After implementation:

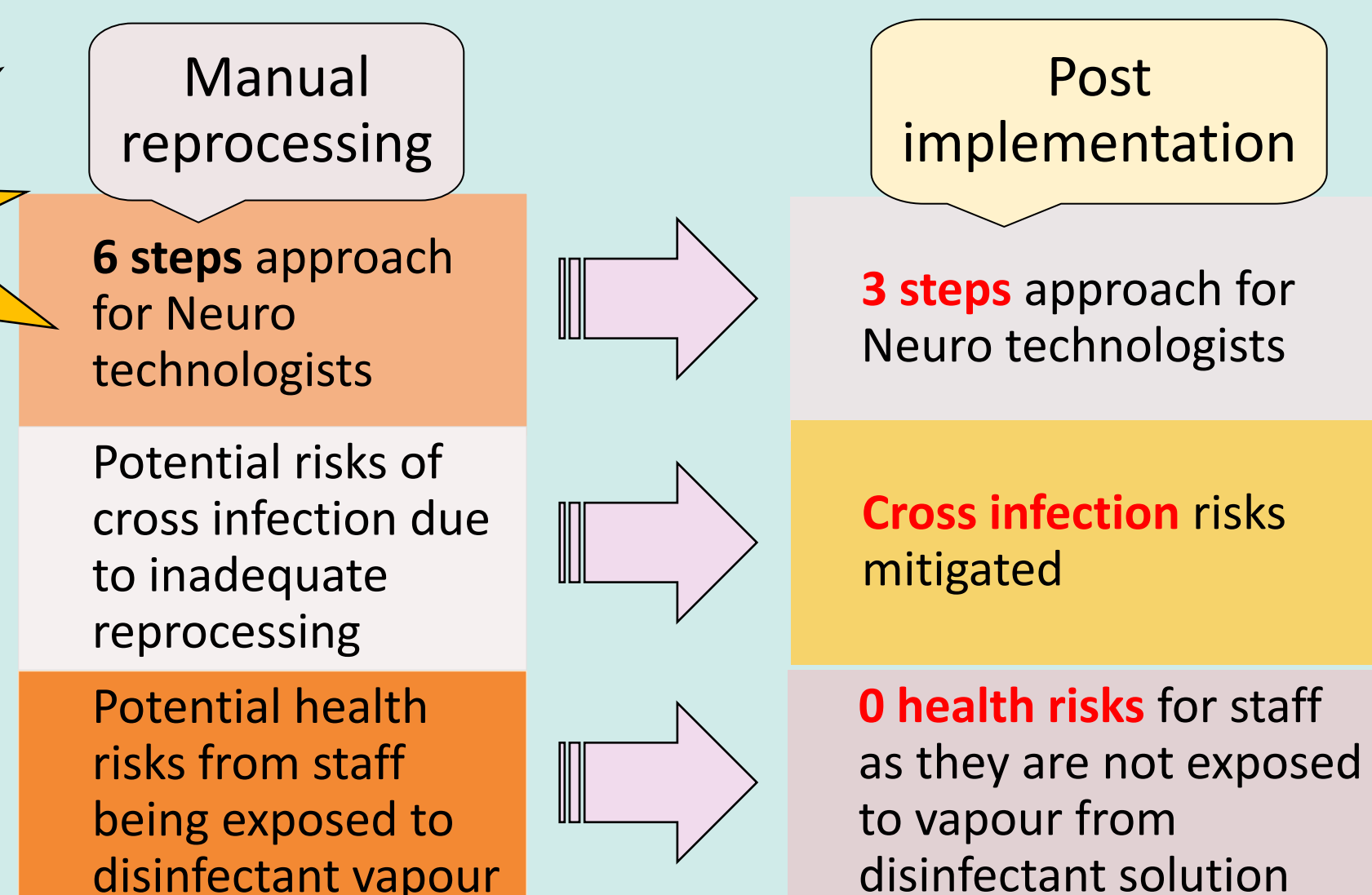


## RESULTS

Time study was conducted over a period of 6 months and the time savings acquired with the new implementation was measured

- Time taken for manual reprocessing: **20.0 minutes**
- Time taken after new implementation: **1.5 minutes**
- Time savings achieved: **18.5 minutes per patient**
- Total time savings over 6 months: **177.29 hours**
- Total annual cost saving:  $(177.29 \times 2) \text{ hours} \times \$70.20^{\wedge} = \mathbf{\$24891.52}$

**92.5% improvement in efficiency**



## CONCLUSION

The revised approach led to a **significant reduction in time** required to reprocess EEG electrode wires. This improvement not only **enhances efficiency** but also addresses the potential risk of cross-infection caused by inadequate disinfection. Additionally, the new method **eliminates staff exposure** to vapour from disinfectant solution, thereby **improving safety protocols** within the healthcare setting.

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