



Singapore Healthcare Management 2024

Comparative Analysis of Efficiency in Preparation Time for Electroencephalography (EEG) Test

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BACKGROUND

The accuracy of Electroencephalography (EEG) tests relies heavily on meticulous preparation for electrode placement on the scalp and forehead, especially challenging areas like the occiput. A special type of neck pillow is self-constructed by the Neuro Technologists as the standard hospital pillows obscure the occiput area.

Disadvantages of self-constructed pillow

Material	Process
<ul style="list-style-type: none"> Material breaks after repeated disinfection <ul style="list-style-type: none"> Potential risks of cross infection between patients 	<ul style="list-style-type: none"> Time consuming to construct each pillow Additional consumables used on pillow reconstruction

AIM

To improve efficiency by reducing 50% of time spent on preparation for each EEG test.

METHODOLOGY



Total time spent on disinfecting and reconstruction of self-constructed pillow over 3 months

Compared to

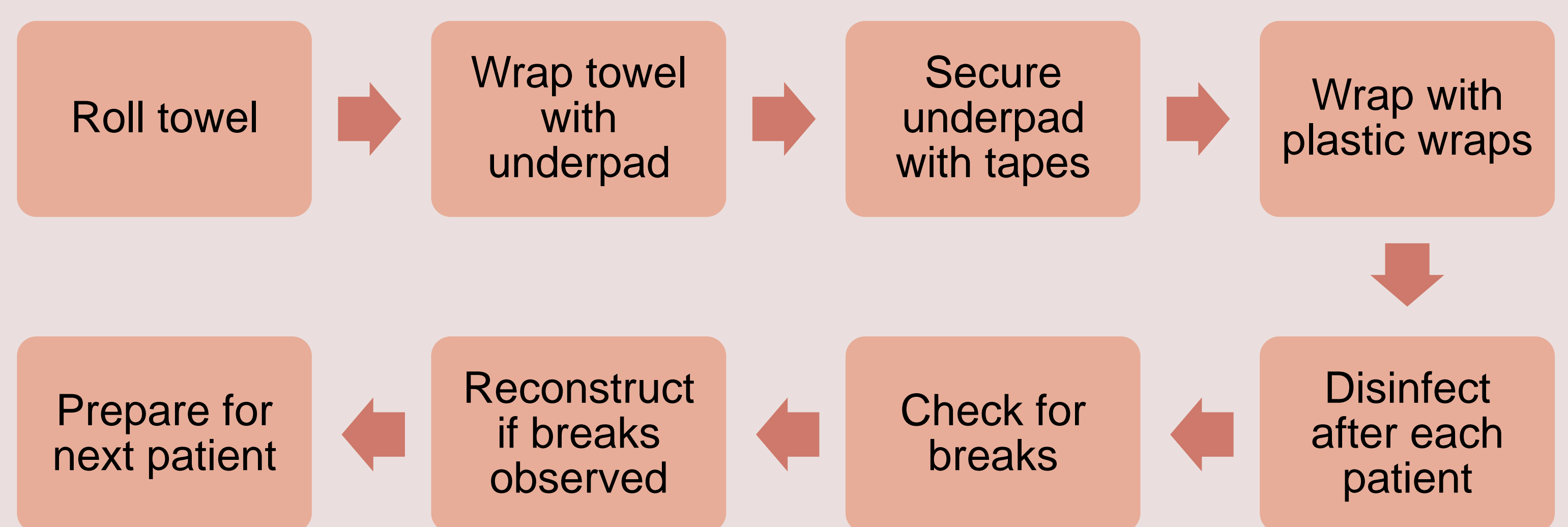


Total time spent on disinfecting store-bought pillow over 3 months

IMPLEMENTATION

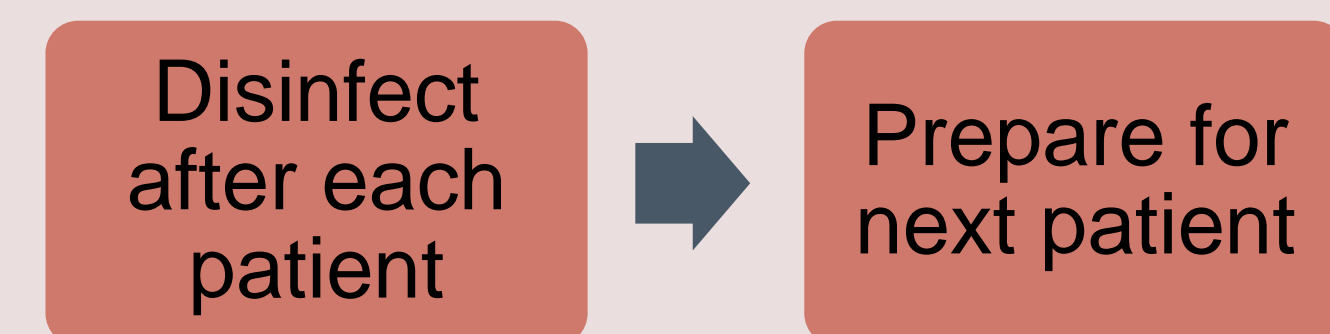
The team trialed a store-bought pillow in the form of a knee cushion (dimensions: 20x15x10cm), and compared the preparatory steps taken before each EEG test from August to October 2023.

Self-constructed Pillows

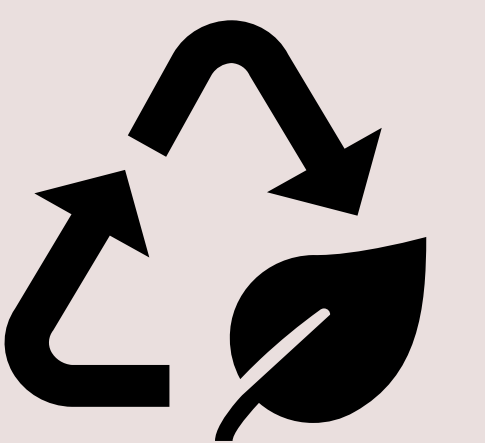


VS

Store-bought Pillows



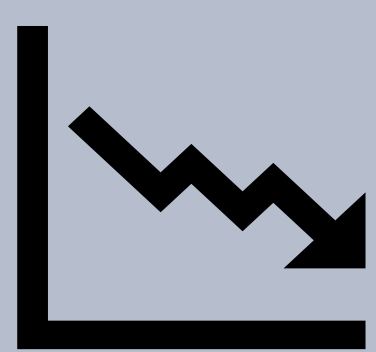
Store-bought pillow reduces usage of additional consumables when compared to the previously used self-constructed pillow



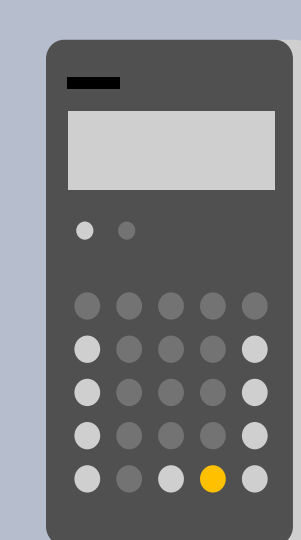
The store-bought pillow has since been implemented in the department.

RESULTS

The team compared both pillows over a six-month period with 574 patients, and below are the results collected:



There was a **decrease of 50% preparation time** for store-bought pillow when compared to self-constructed pillow.



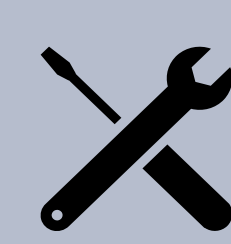
Through comparative calculations spanning the respective three months, a total time savings of **490.5 minutes** was made when utilizing the store-bought pillow. In addition, a total annual cost savings of **32.7 hours x \$70.20^ = \$2,295.54.**

[^]Manpower norm cost

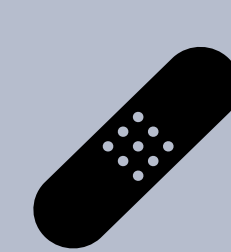
Self-constructed Pillow (n=287 for 3 months)



Average time taken for disinfection of pillow before each patient:
3 minutes



Average time taken for pillow reconstruction:
30 minutes



Number of reconstructions in 3 months:
2 times

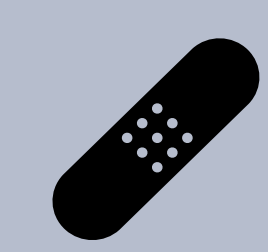
Store-bought Pillow (n=287 for 3 months)



Average time taken for disinfection of pillow before each patient:
1.5 minutes



Average time taken for pillow reconstruction:
Not applicable



Number of reconstructions in 3 months:
Not applicable

CONCLUSION

In conclusion, the change in pillow was associated with **overall time savings**, and **increased efficiency** in overall patient turnover, while maintaining the integrity of all prior procedures.

Furthermore, the elimination of the self-construct pillow process also reduces the risk of breaches during disinfection and **minimizes the potential for cross-contamination** between patients.