

## **Project Title**

Increasing Nursing Productivity with Continuous Wireless Vital Sign Monitoring

## **Project Lead and Members**

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- Delphine Ow
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## **Organisation(s) Involved**

KK Women's and Children's Hospital

## **Healthcare Family Group Involved in this Project**

Nursing

## **Applicable Specialty or Discipline**

Gynaecology

## **Project Period**

Start date: Unknown

Completed date: Unknown

## **Aims**

- To evaluate the feasibility of implementing continuous vital sign monitoring (VSM) in a single-room ward, with regard to nursing productivity
- To elicit patient and nurse perception towards continuous VSM via a written survey

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Project Category**

Technology

Digitalization

## **Keywords**

Nursing, Productivity, Vital Sign Monitoring

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# Increasing Nursing Productivity with Continuous Wireless Vital Sign Monitoring

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## Introduction

• One in 4 patients experience clinical deterioration in the postoperative period.

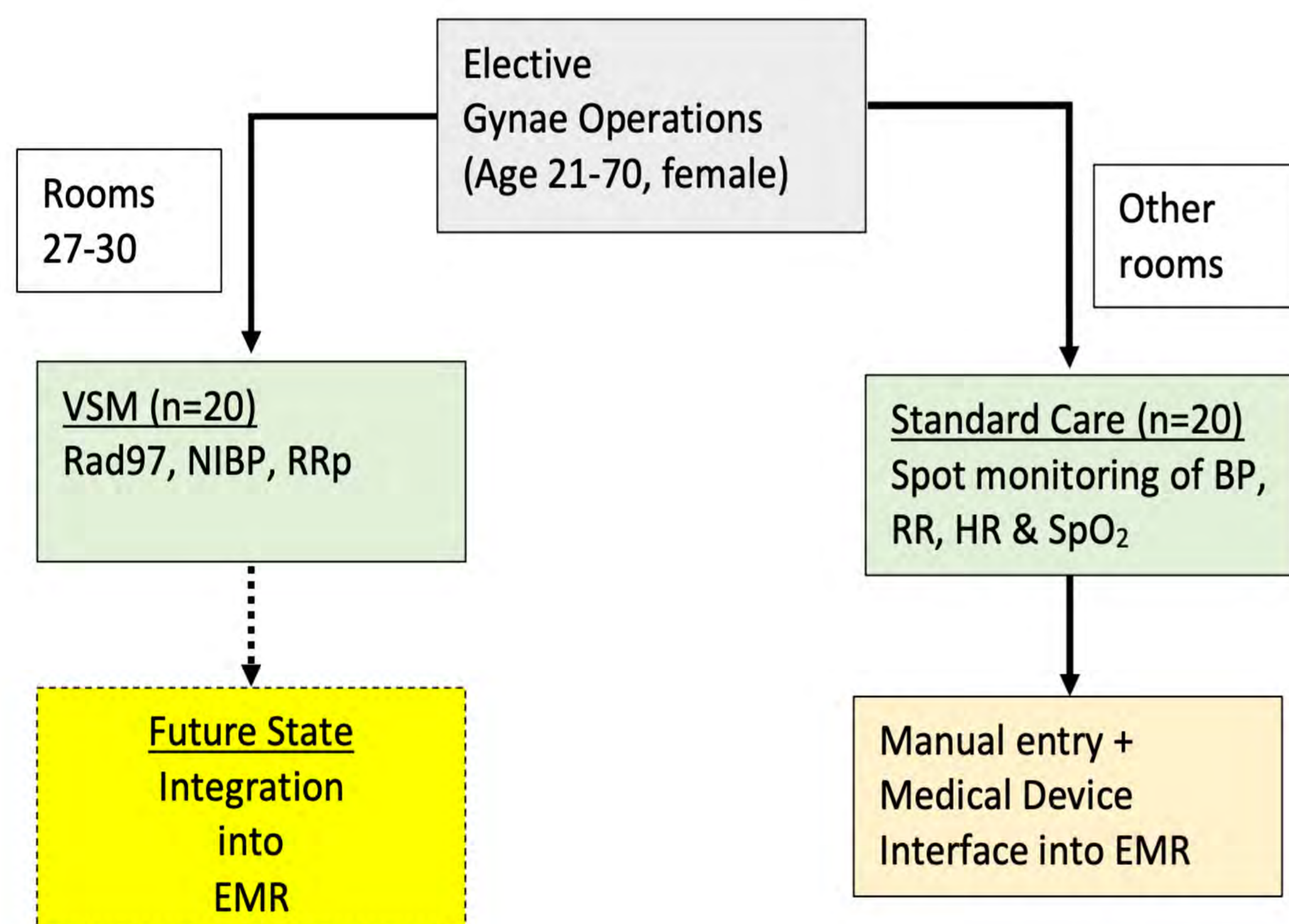
## Current Gap

• Standard care spot monitoring at predefined intervals is unreliable, tedious and inaccurate.

## Aims

- To evaluate the feasibility of implementing continuous vital sign monitoring (VSM) in a single-room ward, with regard to nursing productivity
- To elicit patient and nurse perception towards continuous VSM via a written survey

## Methodology



## RESULTS

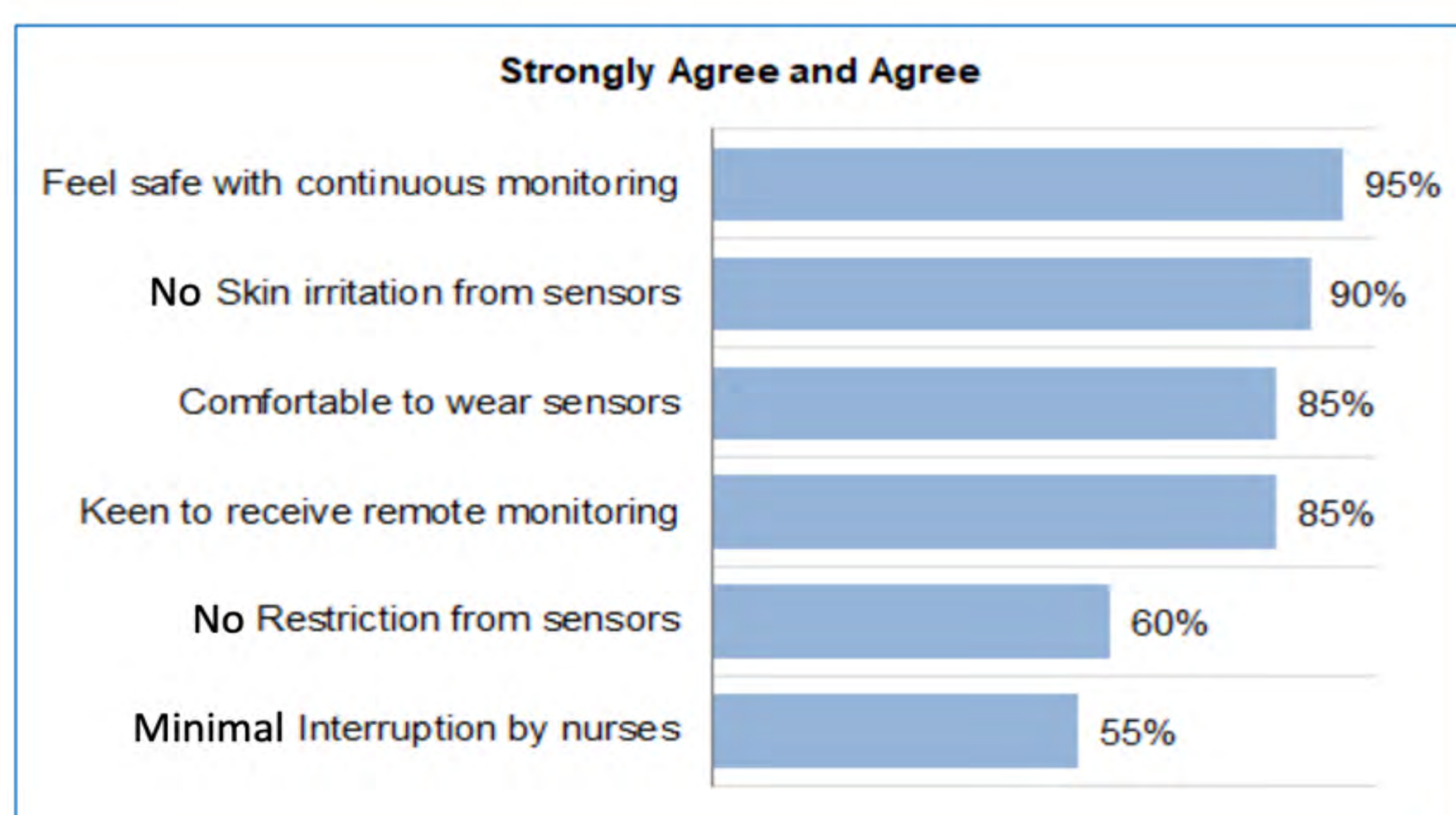
**Time motion studies** were conducted, focussing on:

- nursing workflow for vital signs and other tasks
- frequency of nurse-patient interactions
- reasons for disruptions ( if any)

# Calculations are based on annualised workload of 1687 patients (pre-pandemic) and end-to-end solution with integration into EMR.

	Standard spot monitoring	Remote continuous monitoring*	
<b>Man-Hour/ day</b> * F = 3558/4680	4 min/patient x 24 x 18 patients/day x F = 21.90 man-hours/day	Set up 6 min/patient x 1 x 18 patients/day x F = 1.37 man-hours/day	Total 8.19 man-hours/day
		Subsequent 1.3 min/patient x 23 x 18 patients/day x F = 6.82 man-hours/day	
<b>Total time spent/ week in a year</b>	109.48 hours	40.95 hours	
<b>FTE required in a year</b>	2.94	1.10	
<b>Annualised nursing FTE savings</b>	1.84		
<b>% improvement in productivity</b>	63%		

## Patient Perception of Continuous VSM



## Nursing Perception of Continuous VSM



## VALUE PROPOSITION

- Scalable nursing productivity gains
- Pandemic preparedness – increases safety
- Creates joy in work – eliminates manual, repetitive work

## CONCLUSION

Continuous VSM is associated with increased nursing productivity and positive perception by patients and nurses. Future studies should explore larger-scale implementation to maximise the benefits in productivity and patient safety.

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