

Project Title

Increasing Nursing Productivity with Continuous Wireless Vital Sign Monitoring

Project Lead and Members

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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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Singapore Healthcare Management 2022

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Introduction

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

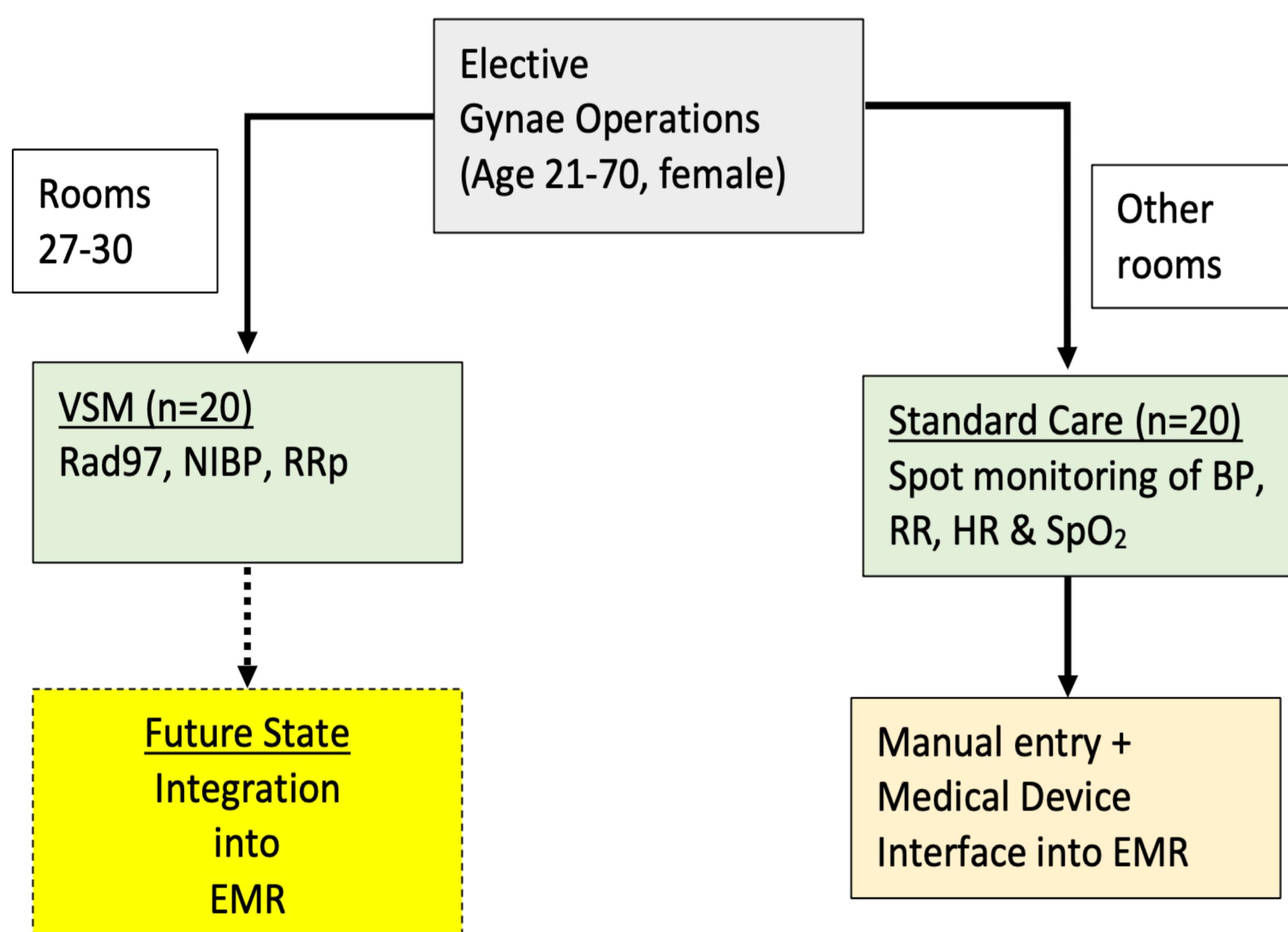
Current Gap

- 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

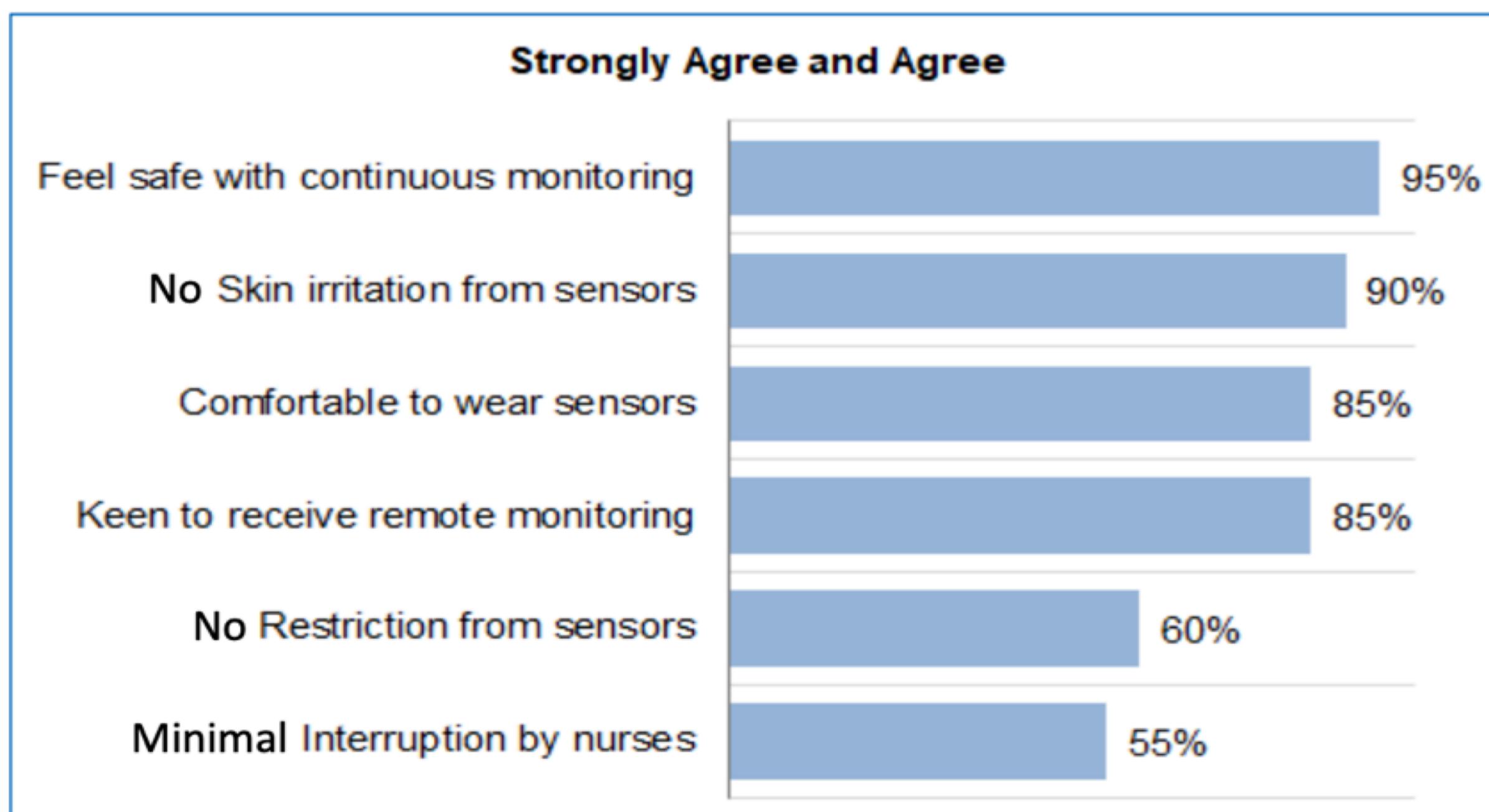
Time motion studies were conducted, focussing on:

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

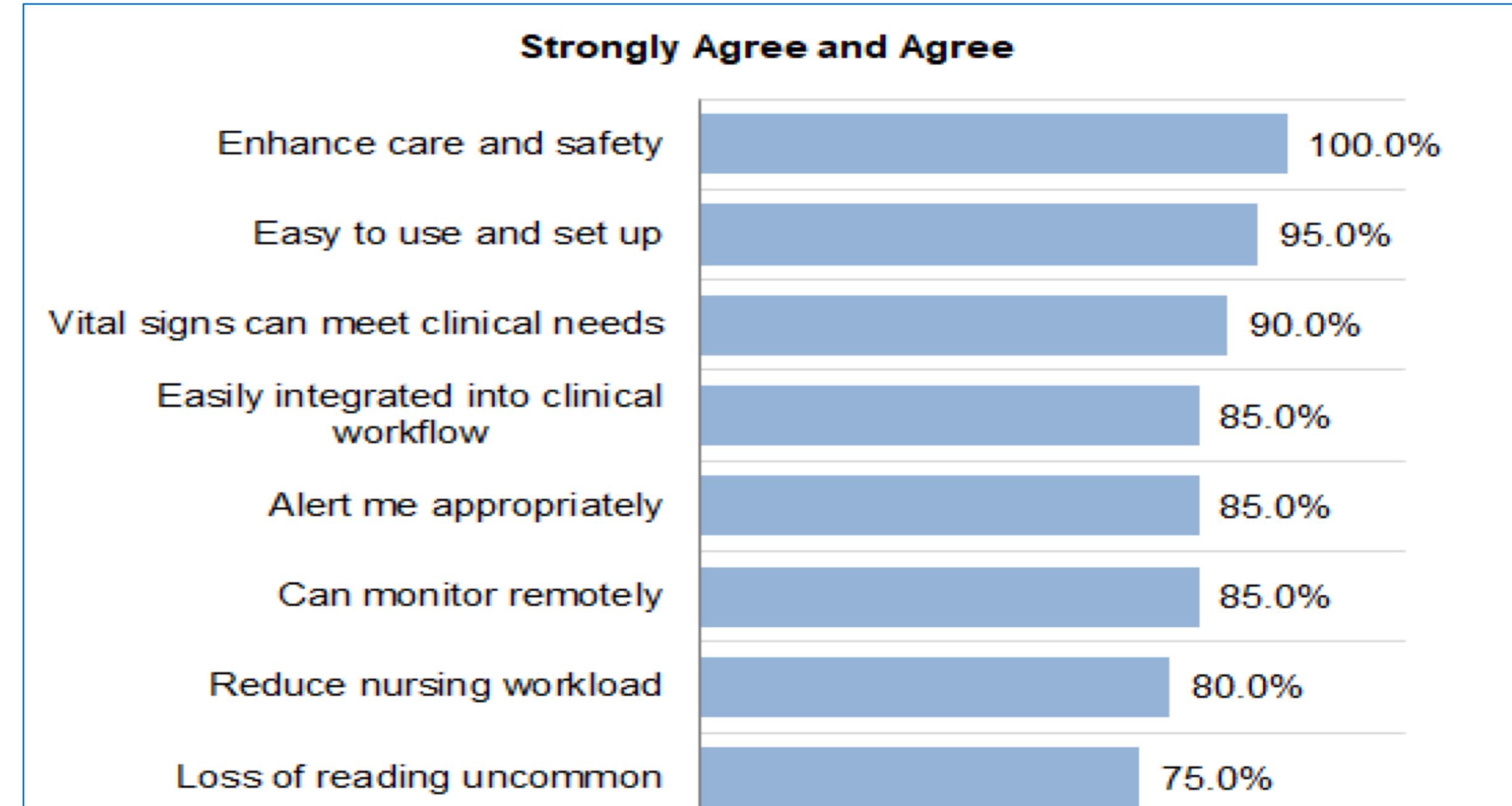
Calculations are based on annualised workload of 1687 patients (pre-pandemic) and end-to-end solution with integration into EMR.

	Standard spot monitoring	Remote continuous monitoring*				
Man-Hour/ day <small>* F = 3558/4680</small>	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		
Total time spent/ week in a year	109.48 hours	40.95 hours				
FTE required in a year	2.94	1.10				
Annualised nursing FTE savings	1.84					
% improvement in productivity	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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