

# Hybrid Education Increases Nurses' Skills In Management of Deteriorating Patients: A Quasi-Experimental Study

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## Introduction

- > Despite the importance of early recognition and response to clinical deterioration, previous studies have identified that nurses will delay escalating care and activating the Rapid Response Systems when they perceive they are in an environment where hierarchy is involved, or that there is a risk of being reprimanded or socially ridiculed.<sup>1,2,3</sup>
- > By changing the curriculum around Basic Life Support to include Crisis Resource Management principles there is the potential to improve patient outcomes, teamwork and establish a positive organisational culture that emphasises the importance of recognition and response to clinical deterioration.

## Aims and Objectives

- > The purpose of this study was to implement and evaluate the impact of a hybrid education program that included online learning and simulation-based training to improve nurses' knowledge, confidence, and skills in management of the deteriorating patient.

## Methods

- > This health services study was evaluated using a quasi-experimental approach. Outcomes measures included participant surveys and change in number RRS escalation rates before and after implementation if the educational intervention.

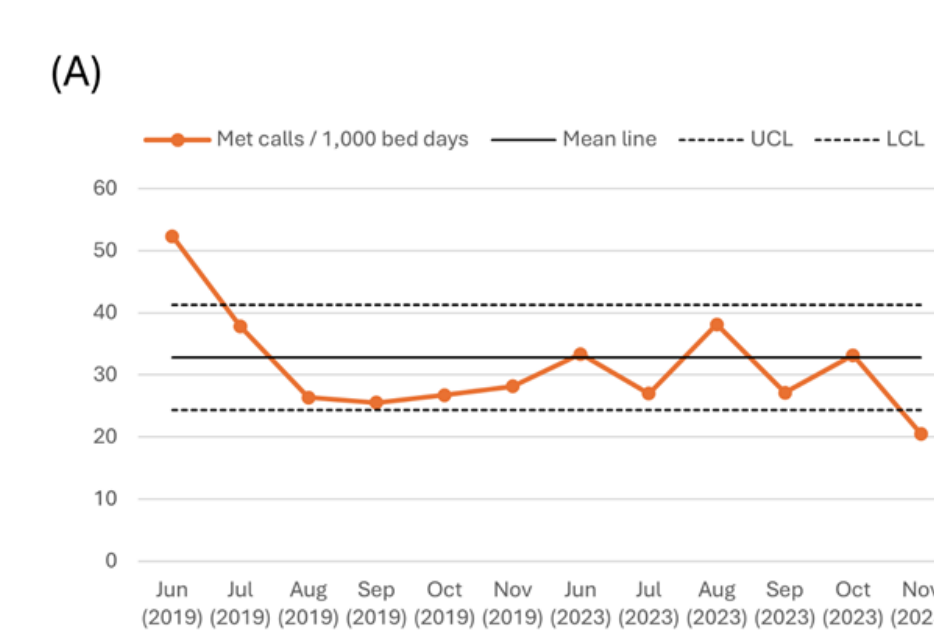
### Participants

- > Nurses (n = 39) working on two of the highest acuity wards (medical and acute surgical) at the study site were invited to participate in the education program and the accompanying evaluation

### Outcome Measures

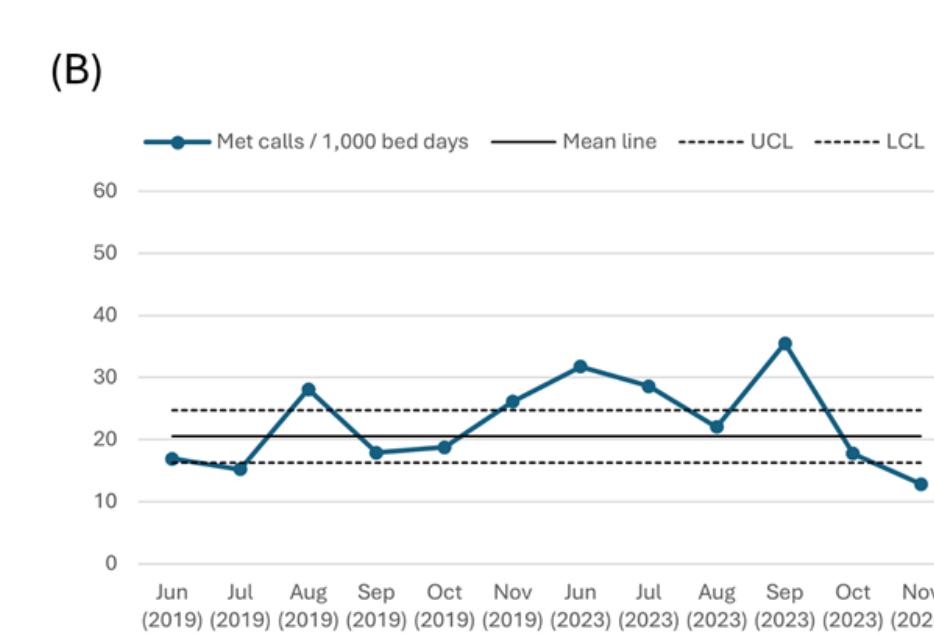
- > Nurses' knowledge and confidence to activate the health service RRS was measured before and after program completion
- > Administrative datasets from were accessed to compare RRS activations rates for the 6-month period following the program and compared to those in 2019

## Results

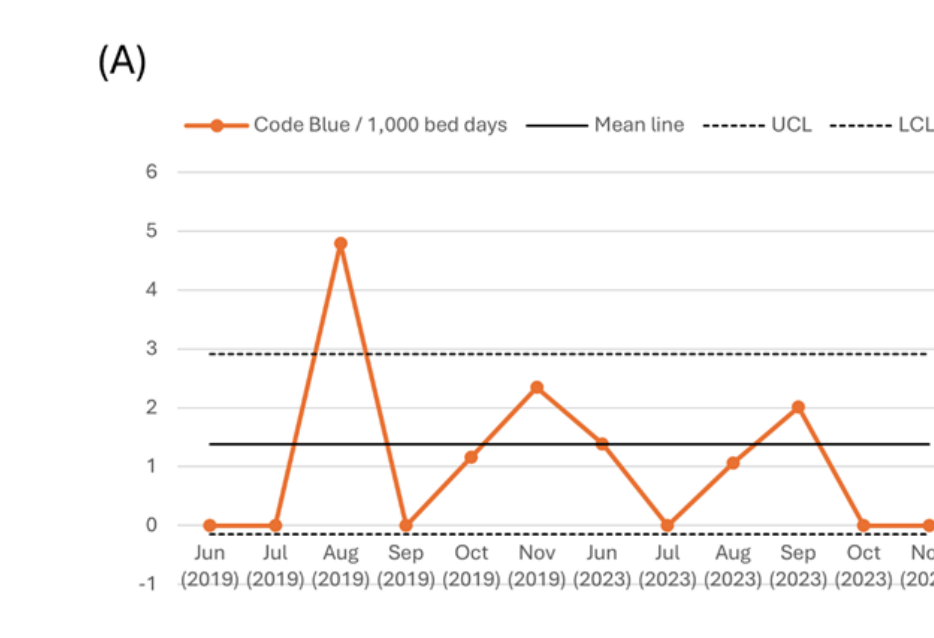


Met calls per 1,000 bed days

- > (A): No significant difference observed on surgical ward following the intervention

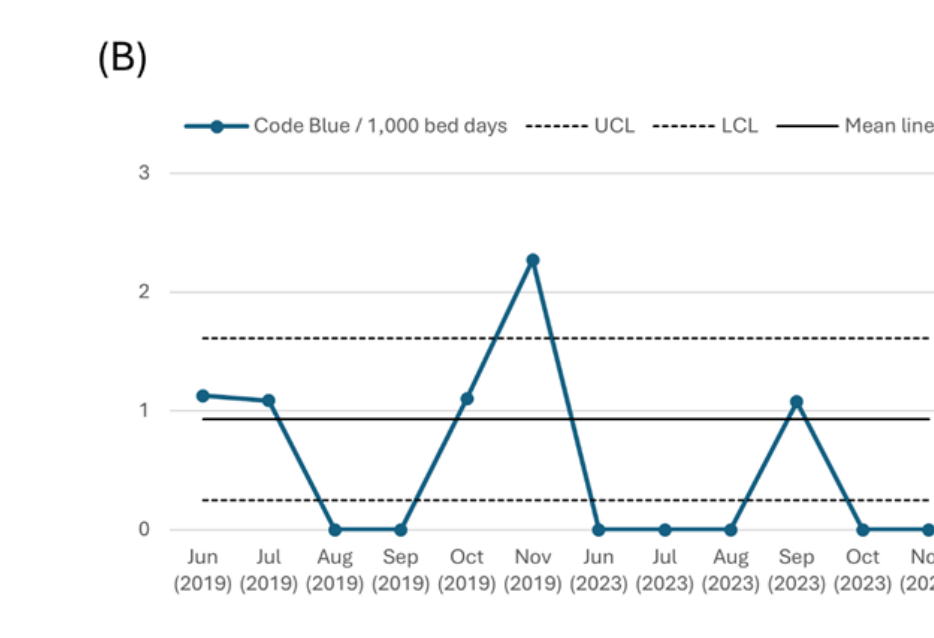


- > (B): Modest significant increase in rate of MET calls observed on medical ward post-intervention



Code blues per 1,000 bed days

- > (A): No significant difference observed on surgical ward following the intervention

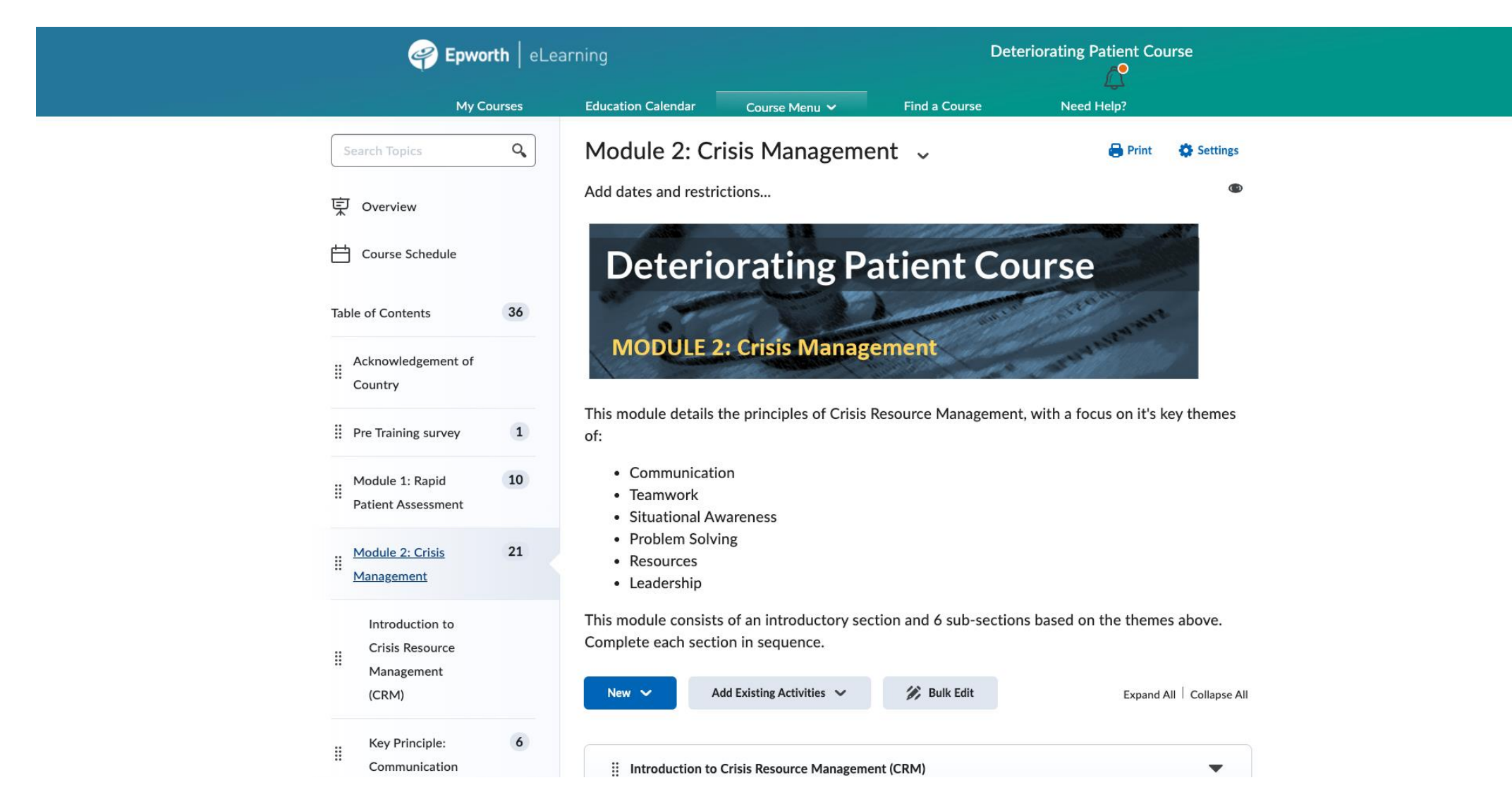


- > (B): Decrease in rate of Code Blue calls observed on medical ward post-intervention

### Significant improvements in self-reported confidence for all pre-post indicators

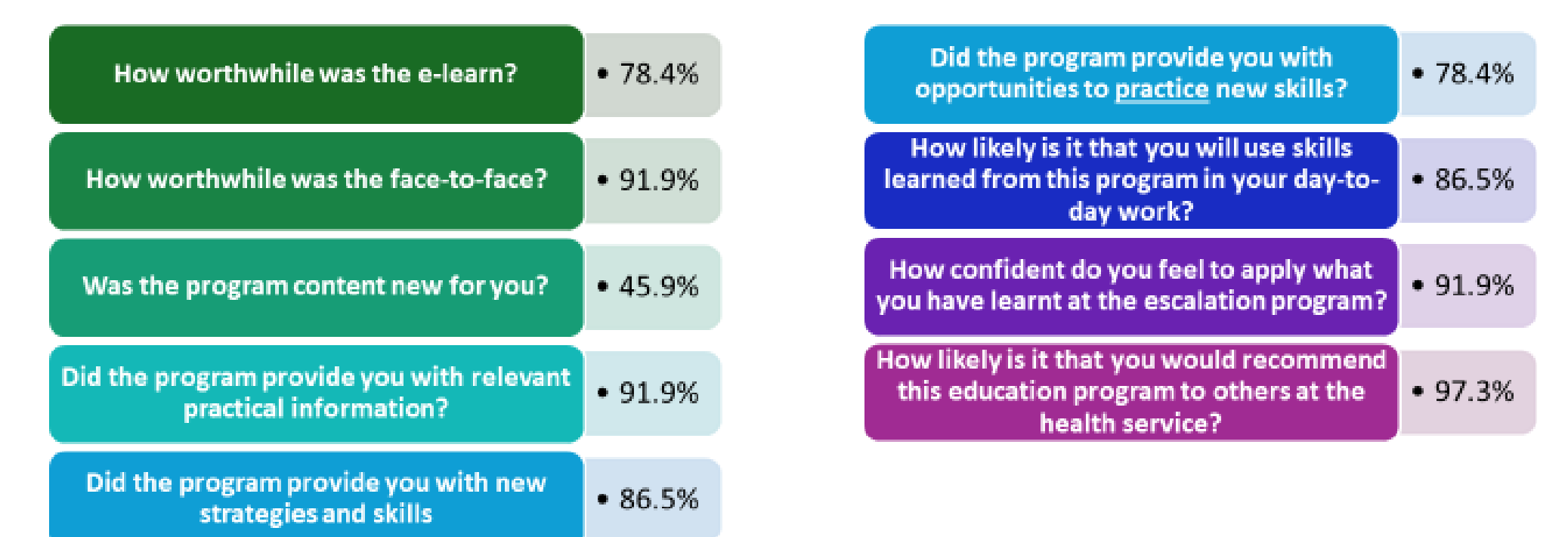
Staff survey items -	Pre-intervention, Mean (SD)	Post-intervention, Mean (SD)	6week follow-up, Mean (SD)	Pre vs. post, p-value (d)	Post vs. 6week, p-value (d)
Within a MET call or Code Blue event, how certain are you that you can successfully:					
Communicate your ideas and concerns	3.1 (1.1)	4.1 (0.9)	3.8 (0.7)	<.001 (.972)	.364 (.242)
Advocate for the patient and their care	3.1 (1.0)	3.9 (0.8)	3.6 (1.0)	.002 (.830)	.827 (.057)
Maintain awareness	3.3 (1.1)	4.1 (0.9)	3.7 (0.7)	.003 (.789)	.610 (.135)
Listen attentively without interrupting or changing of focus	3.3 (1.0)	4.1 (0.9)	3.8 (0.7)	.003 (.789)	.610 (.135)
Navigate hospital hierarchy to escalate care appropriately	3.1 (1.2)	3.8 (1.1)	3.5 (1.0)	.004 (.765)	.836 (.055)
Follow the hospital policy in escalating care	3.3 (1.1)	4.1 (0.8)	4.0 (0.8)	.004 (.765)	.199 (.348)
Perform a rapid assessment on your patient	3.2 (1.2)	4.1 (1.0)	3.7 (1.0)	<.001 (.923)	1.0 (.000)
Provide effective airway management	2.8 (1.0)	3.8 (1.1)	3.6 (0.7)	.001 (.876)	.301 (.277)
Provide effective cardiopulmonary resuscitation	3.1 (1.0)	4.1 (0.8)	3.7 (0.8)	<.001 (1.154)	.634 (.126)
Provide effective defibrillation	2.8 (1.1)	3.7 (1.0)	3.5 (0.9)	.049 (.484)	1.0 (.000)
Make a plan based on shared decisions between you, the patient and MET response team	3.3 (1.0)	4.1 (0.9)	3.9 (1.0)	<.001 (.923)	.452 (.200)
Confidence activating the rapid response system, score (1-10)	3.7 (1.1)	8.7 (1.4)	N/A	<.001 (4.475)	N/A
Understanding of abnormal observations (1-10)	3.7 (0.9)	8.6 (1.5)	N/A	<.001 (3.471)	N/A

### Online modules



### Program satisfaction was high following face-to-face training

#### Proportion who scored 8-10



## Conclusion/Implications for Practice

- > The hybrid-simulation based approach improved nurses' knowledge and confidence to recognise and respond to deterioration, increased early escalation of care and decreased code blue calls.
- > The knowledge gained was reported to be implemented into practice and retained at the follow up survey point, an important finding to support the use of a hybrid learning technique, for practical skill development
- > Our study provides preliminary evidence that the emphasis of mandatory training should change from focusing on provision of basic life support to developing clinicians' skills in detection, response and management of deteriorating patients

## References

1. Large, C., & Aldridge, M. (2018). Non-technical skills required to recognise and escalate patient deterioration in acute hospital settings [Review]. *Nursing Management*, 25(2). <https://doi.org/10.7748/nm.2018.e1707>
2. Massey, D., Chaboyer, W., & Anderson, V. (2017). What factors influence ward nurses' recognition of and response to patient deterioration? An integrative review of the literature [Review]. *Nursing open*, 4(1), 6-23. <https://doi.org/10.1002/nop2.53>
3. Noye, S., Kumar, K., Hutchinson, A., Willcox, J. (2023). Nurses' perspectives on delays in care escalation in an acute private hospital. *Collegian*, 30(5), 660-667. <https://doi.org/10.1016/j.colleg.2023.07.006>