

Enhancing Nurses' Role in Prevention, Early Detection, and Response to Clinical Deterioration of Medical Ward Patients: A Mixed Methods Research Protocol

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INTRODUCTION

- Clinical deterioration is defined as an unstable health condition shifting toward worsening health status (1).
- Clinical deterioration of hospitalized patients negatively affects patient outcomes and the healthcare system (2).
- While value of early detection and response to clinical deterioration is well established, failure to identify and treat these patients remains common (3).
- Nurses' time with patients gives them unique features of their patient's needs and concerns (4). Hence, making them the first to notice changes in patient's health status and provide the appropriate responses.
- Widespread use of different policies, models, and tools for assessing and intervening clinical deterioration has resulted in variations in identification, response, and reporting (5,6).
- Clinical deterioration is unique, broad, and complex. Patients deteriorate based on several factors. Thus, depending on a narrow view is not likely to detect all deteriorating patients (5).
- A comprehensive model that considers the associated factors of clinical deterioration, in addition to nurses' and patients' experiences will be needed.
- A mixed-methods study design was chosen to provide a broad array of evidence to inform the development of a clinical plan to enhance the nurses' role in prevention, early detection, and timely response to clinical deterioration in the adult medical inpatient units in Newfoundland and Labrador (NL), Canada.

METHODS

- This study will use the "Situational Awareness Model" as a conceptual framework to guide the research study (7) (Figure 1).
- This study will use convergent mixed methods with two parallel (quantitative and qualitative) phases before the third merging phase (8).
- The qualitative phase will use an interpretive description qualitative research method (9). Nurses and patients will share their insights, experiences, and practices toward early detection and response to clinical deterioration.
- The quantitative phase will use an observational retrospective cohort by reviewing the patients' charts and nursing documentation to identify the associated factors of clinical deterioration.
- Both qualitative and quantitative phases will be conducted at the inpatient medical wards in the four regional health authorities in NL, Canada.

METHODS (Cont.)

- In the third phase, qualitative and quantitative research findings will be merged to compare and corroborate those two forms of data to bring greater insight into the problem and inform a plan for a strategy for early detection and proper management of clinical deterioration.
- For the qualitative study purposive sampling will be used to recruit patients, families, and nurses working at the medical wards in the four regional health authorities. Nurses must have a minimum of six months of working experience, be involved in direct care, and agree to participate in the study. Semi-structured individual interviews will be conducted with each participant.
- By using a probability-stratified sampling technique, the quantitative phase will collect all adults (≥ 18 years) admitted to the medical ward at the four regional health authorities between January 2022 to December 2022.
- Reflexive Thematic analysis technique described by Braun and Clarke (2006) will be used to analyze qualitative data (10). The descriptive and inferential (univariate and multivariable) analysis will be used for the quantitative phase.
- Integration in this mixed methods design aims to develop results and interpretations that expand the understanding to be more comprehensive and confirmed. Data analysis in this phase will implement the integration steps described by Creswell & Clark, 2017 (8).

PATIENT ENGAGEMENT

- This mixed methods research study will be developed from the involvement of patients and family members who have lived experiences of clinical deterioration.
- An advisory committee will be established with patient, family, and nurse representation.
- Committee members will be provided opportunities for education and training in research partnerships and patient-oriented research and the role of patient partners in research.



PLANNED KNOWLEDGE TRANSLATION

- Study findings will be given to participants in plain language.
- The findings will be presented at meetings and published in nursing journals.
- Infographics will be prepared for policy-makers and health decision-makers in NL.
- The study team plans to partner with the Health Authorities to help with knowledge translation in the health system



POTENTIAL IMPACT

- Responding to clinical deterioration will positively impact patients' healthcare and enhance patient safety culture within health organizations.
- The clinical plan will support nurses to make better clinical decisions that positively affect patients and families.
- Exploring different perspectives of clinical deterioration will enhance our understanding and improve patient care.



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REFERENCES

- Jones, D., Mitchell, I., Hillman, K., & Story, D. (2013). Defining clinical deterioration. *Resuscitation*, 84(8), 1029-1034.
- Enoch, G. J., Greene, J. D., Gardner, M. N., Mansfield, G. P., Quick, B., & Kipnis, P. (2011). Intra-hospital transfers to a higher level of care: contribution to total hospital and intensive care unit (ICU) mortality and length of stay (LOS). *J. Hosp. Med.*, 6(2), 74-80.
- Onoz, J., Halky, M., Udy, A., Piche, D., Bellomo, R., & Jones, D. (2020). Unplanned ICU Admission From Hospital Wards After Rapid Response Team Review in Australia and New Zealand. *Crit Care Medicine*, 48(7), e550-e556.
- Baker, R., Monsalve, M., Thomas, G. W., Herman, T., Segre, A. M., Polgreen, P. M., & Saseja, M. (2018). Estimating Time Physicians and Other Health Care Workers Spend with Patients in an Intensive Care Unit Using a Sensor Network. *Am J Med*, 133(8), 972.e979-972.e915.
- Blackwell, J. N., Kemp-Mahase, J., Clark, M. T., Kowalki, R. L., Najjar, S. N., Bourque, J. M., Lake, D. E., & Moorman, J. R. (2020). Early Detection of In-Patient Deterioration: One Prediction Model Does Not Fit All. *Critical Care Explorations*, 2(5), e0116.
- Cossidine, J., Hutchinson, A. F., Rawson, H., Hutchinson, A. M., Bucknall, T., Dunning, T., Botti, M., Duke, M. M., & Street, M. (2018). Comparison of policies for recognizing and responding to clinical deterioration across five Victorian health services. *Aust Health Rev*, 42(4), 412-419.
- Embalek, M. R. (1995). Measurement of Situation Awareness in Dynamic Systems. *Human Factors*, 37(1), 65-84.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and Conducting Mixed Methods Research* (Third ed.). SAGE.
- Thome, S. (2016). Interpretive description: Qualitative research for applied practice. Routledge.
- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (re)flexive thematic analysis? *Qualitative research in psychology*, 18(3), 328-352.

Figure 1: Conceptual Model

