



Scan for full protocol

Palliative care implementation in the intensive care unit: Using the Implementation Research Logic Model as a framework for systematic review and synthesis

S. A. Meddick-Dyson^a, J. W. Boland^a, M. Pearson^a, S. Greenley^b, R. Gambe^a, J. R. Budding^a and F. E. M. Murtagh^a

^aWolfson Palliative Care Research Centre, Hull York Medical School, University of Hull, Hull HU6 7RX, UK.

^bCancer Awareness, Screening and Diagnostic Pathways Research Group (CASP), Hull York Medical School, University of Hull, Hull, UK.

Background

Logic models help conceptualise and manage complexity and can provide a framework for systematic reviews [1]. The Implementation Research Logic Model (IRLM) allows examination of causal pathways and mechanisms enabling implementation [2]. This study demonstrates its utility as an a priori framework for synthesis.

Aim

This systematic review aimed to identify and synthesise knowledge on how models of integrating palliative care into the ICU (Figure 1) have been implemented, providing critical recommendations for future development and implementation of complex interventions in the field.

Methods

- Study data collected: study design, ICU type, country, intervention domain, model of delivery, palliative care outcomes, implementation science outcomes, intervention characteristics.

Search strategy

Terms related to intensive care, palliative care, implementation science

Screening & Extraction

Two independent reviewers
Covidence software

NVivo coding

- CFIR determinants
- ERIC strategies
- Mechanisms
- ICU type
- Model of palliative care delivery

NVivo link finding

Matrix coding queries run between:
CFIR determinants & ERIC strategies
ERIC strategies & mechanisms
CFIR determinants & ICU type
CFIR determinants & model of delivery
ERIC strategies & ICU type
ERIC strategies & model of delivery

Results

Out of 79 included studies, 71 effectiveness and/or feasibility studies, and 8 process evaluations referenced 66 interventions.

Within included studies, determinants and implementation strategies were widely reported, but implementation mechanisms were not.

48 studies were solely conducted in either medical(19), general(15), or surgical(14) ICUs. Surgical ICUs included neurosurgical, trauma and transplant ICUs.

- This allowed review of determinants and strategies in relation to these ICU types.

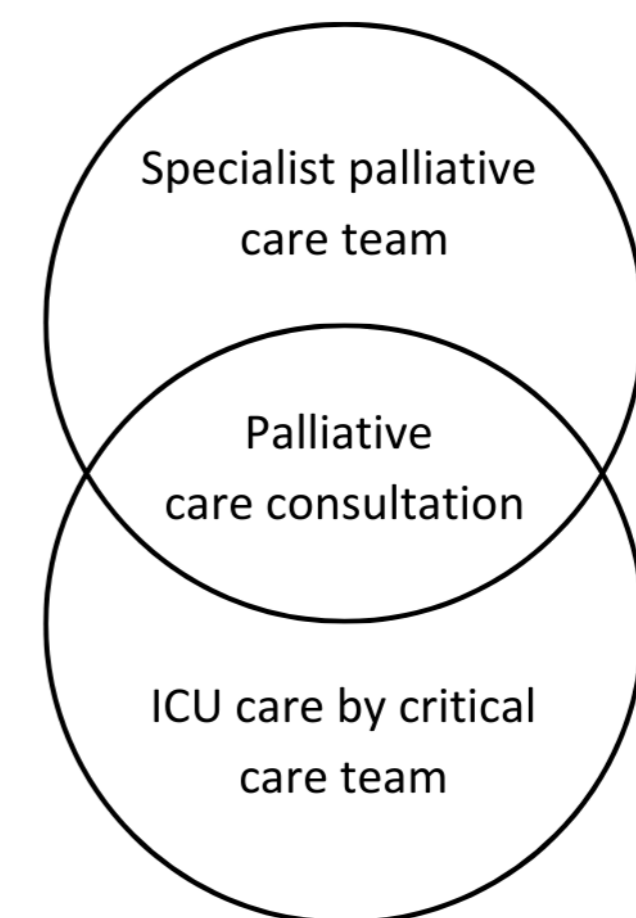
Example strategies more common in:

General ICU → Adapting time and place of intervention

Medical ICU → Use of electronic systems and records

Surgical ICU → Review in morbidity and mortality meetings

Consultative Model



Integrative Model

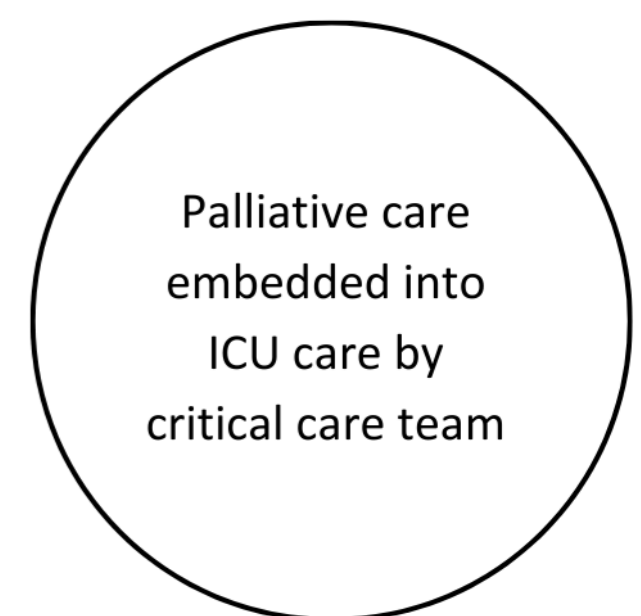


Figure 1.

Models of palliative care delivery in the ICU. (adapted from Nelson *et al.*) [3]

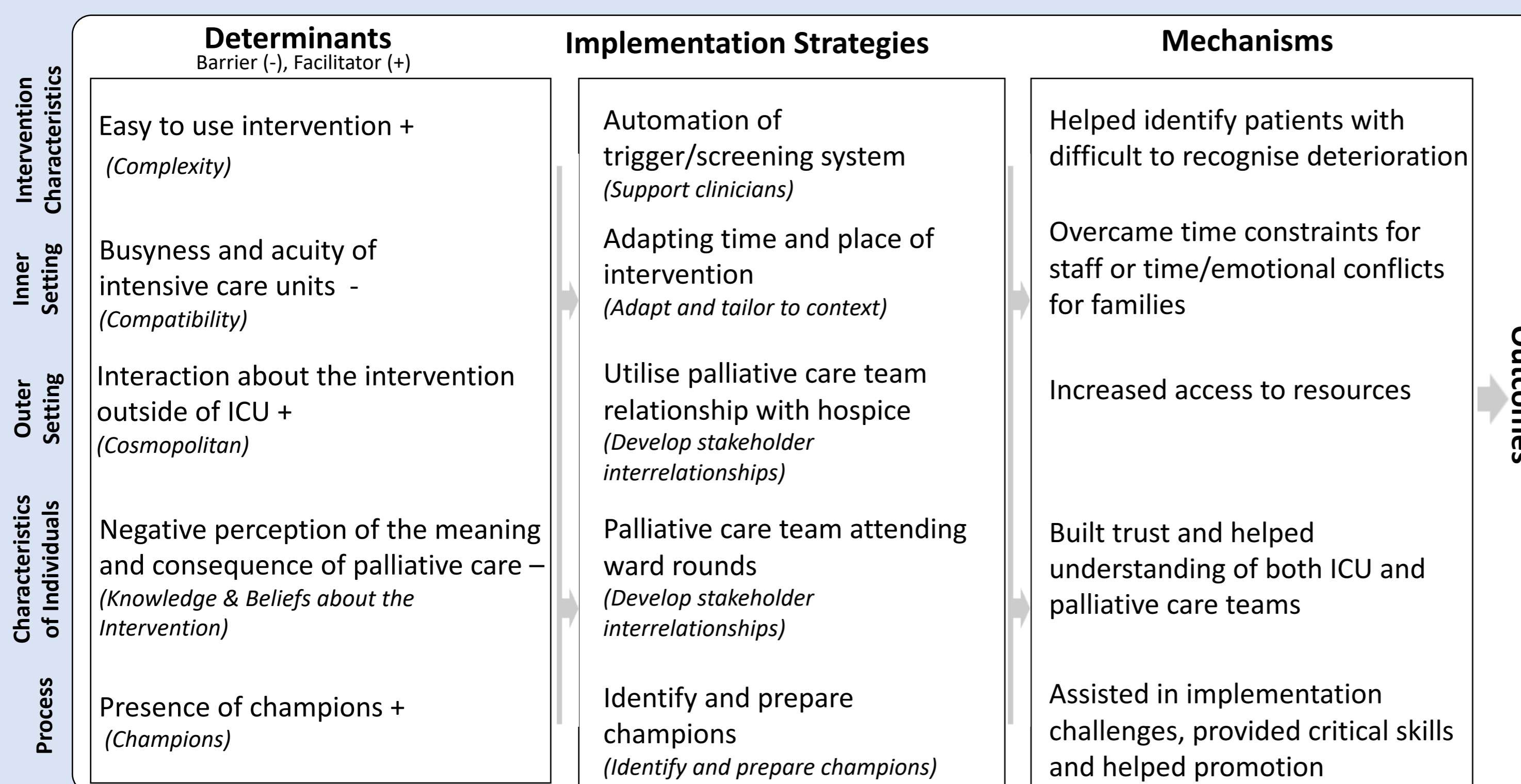


Figure 2. A sample of determinants of implementing palliative care interventions in the Intensive Care Unit (ICU) mapped to Consolidated Framework for Implementation Research headings, related implementation strategies mapped to Expert Recommendations for Implementing Change headings and reported mechanisms of how these strategies worked.

Discussion & Conclusion

The IRLM was successfully used to guide a framework synthesis of evidence on implementation of palliative care interventions within ICUs. The IRLM allowed for reporting of relationships between determinants, strategies, and mechanisms, and how these varied with intervention characteristics including ICU type and model of delivery of palliative care. This methodology could be transferred to other subject areas to systematically review implementation factors. Future work is needed to understand the processes behind these strategies by use of theory.

1. Brunton G, Oliver S, Thomas J: Innovations in framework synthesis as a systematic review method. *Res Synth Methods* 2020, 11(3):316-330.
2. Smith JD, Li DH, Rafferty MR: The Implementation Research Logic Model: a method for planning, executing, reporting, and synthesizing implementation projects. *Implementation Science*, 15(1):84.
3. Nelson JE et al. Models for structuring a clinical initiative to enhance palliative care in the intensive care unit: a report from the IPAL-ICU Project (Improving Palliative Care in the ICU). *Crit Care Med*. 2010 Sep;38(9):1765-72.