

500 words 28<sup>th</sup> Feb deadline

**Author's reply to correspondence on "Implementing palliative care in the intensive care unit: a systematic review and mapping of knowledge to the implementation research logic model"**

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We appreciate Berger et al's interest in, and correspondence [1] with, our systematic review of palliative care implementation in the Intensive Care Unit (ICU) [2]. We acknowledge discussion of the wider challenges that come with prognostication in the ICU setting was not within the scope of the review. As Berger et al outline, a factor that is crucial within critical care decision making [1].

Our review synthesised implementation factors reported when trialling palliative care interventions in the ICU [2]. Having a "trigger tool" was reported to help where negative perceptions may have otherwise restricted palliative care integration. The limitations of trigger tools with regards to prognosis are well summarised in Berger et al's correspondence [1]. It is important to recognise that despite these, trigger tools may help identify patients who could benefit from a thorough palliative care needs assessment, distinct from a referral system based on subjective prognostication [3]. That used routinely, patients can be triaged for palliative care needs that can either be met by the ICU team or with specialist input [3]. We do agree that work is needed to develop more reliable predictive models for palliative care needs and patient/family outcomes in the ICU, perhaps through methods such as machine learning algorithms. Irrevocably linked to this is the need for core outcomes for palliative and end-of-life care (EOLC) within the ICU context. Humphreys et al are undertaking the PEACE-COS study to develop a core outcome set on person-centred EOLC in critical care [4].

We also agree that ICU patients by nature are critically ill, and this provides a unique level of uncertainty. Berger et al explain how this can cause a struggle of balancing life-saving measures with “palliative approaches focused on comfort and quality of life” [1]. Palliative care encompasses, but is not limited to, EOLC. Historically, palliative care was seen as an approach that was only considered when disease modifying, or curative treatment was no longer an option. However, whilst the aims of palliative care are to help people to manage symptoms related to a life-threatening illness and not cure, it does not preclude curative treatment [5]. Aslakson et al eloquently present how the term “end-of-life” can be problematic in the ICU as it is often only a meaningful term in retrospect given the level of uncertainty. If an ICU patient unexpectedly dies, then the care provided just preceding this was in fact EOLC. They instead argue that we should “*embrace the terminology and practices of palliative care*” and explain how given that all ICU patients have serious life-threatening illness, by definition, they all have palliative care needs [5]. Efforts to help ICUs integrate palliative care practices into their daily work reflect this thinking and would help move away from a dichotomy between ICU and palliative care, reducing the risk of unrecognised needs. Our review proposes that there is a need for development of evidence-based, theory and stakeholder driven, implementation tools to facilitate this [2].

To further the field of research into palliative and EOLC in the ICU, we propose that these three streams of development should be pursued in unison, each reliant on each other, as shown in Figure 1.

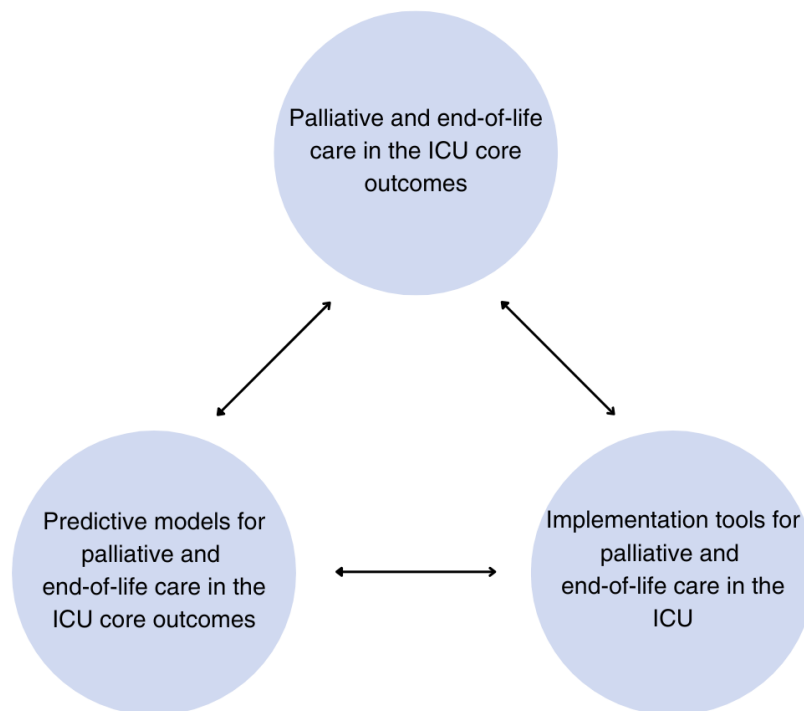


*Figure 1: Suggested streams of development needed within the field of research into palliative and EOLC in the ICU*

1. ICME-D-25-00157, in press.
2. Meddick-Dyson SA, Boland JW, Pearson M, Greenley S, Gambe R, Budding JR, et al. Implementing palliative care in the intensive care unit: a systematic review and mapping of knowledge to the implementation research logic model. *Intensive Care Medicine*. 2024.
3. Nadkarni Y, Kukec I, Gruber P, Jhanji S, Droney J. Integrated palliative care: triggers for referral to palliative care in ICU patients. *Support Care Cancer*. 2022;30(3):2173-81.
4. Humphreys S, Pattinson N, Goldbold R, Lone N, Scott R, Hall N, et al. PEACE-COS Developing Person Centred Outcomes in End-of-Life Care in Critical Care 2023 [Available from: <https://peacecos.com>].
5. Aslakson RA, Cox CE, Baggs JG, Curtis JR. Palliative and End-of-Life Care: Prioritizing Compassion Within the ICU and Beyond. *Critical Care Medicine*. 2021;49(10).