



**Service Priorities and Programmes**  
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**Submitting author:** Ms Hang Mui SO

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**The Effectiveness of Critical Care Transition Programs on Preventing ICU Readmission: Review of Current Evidences**

*So HM(1), Chair SY(2), Yan WW(1)*

*(1)Department of Intensive Care, Pamela Youde Nethersole Eastern Hospital*

*(2)Nethersole School of Nursing, The Chinese University of Hong Kong*

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**Introduction**

ICU readmission rate was 5.1% in a local hospital (Tam et al., 2014). Among the high risk group, the readmission rate was 9.5% within 72 hours post ICU-discharge (Clinical Data Analysis and Report System, and Clinical Information System, 2013) The High ICU readmission increases medical burden and leads to a higher mortality (Bidaai & Breslow, 2012; Ho et al., 2009). This paper aims to critically review different critical transition programs addressing ICU readmission

**Objectives**

1. To examine the effectiveness of different critical transition programs
2. To identify gaps in the current literature

**Methodology**

Electronic databases including Ovid MEDLINE® Daily and Ovid MEDLINE® 1946-Present, MEDLINE Plus, Ovid Nursing Database, EBSCO: CINAHL Plus, PubMed, EBM Reviews & Cochrane Database of Systemic Reviews 2005 to October 2016, EBM Reviews- Cochrane Central Register of Controlled Trials till October 2016 were searched. The search was further limited to randomized control study, before and after intervention studies, case control study, cohort study and systemic reviews.

**Result**

Among the fifteen relevant articles, only two randomized control trials provided follow-up care to all in-patients at risk of deterioration with a track and trigger system (Hillman, 2005; Priestley et al., 2004), and eight were before and after intervention design studies. There were two systemic reviews, one multicenter interrupted time-series analysis, one matched-cohort analysis, and one qualitative study to

explore nurses' perceptions of critical outreach service. The critical elements in these programs included a dedicated team of critical care nurses, doctors' support, and a post ICU-discharge follow-up care with or without a track and trigger system. Some programs also provided education support to ward staff. Although the outcomes on ICU readmission among these studies were inconclusive, one meta-analysis demonstrated a significant reduced risk of ICU readmission (RR= 0.87, 95% CI, 0.76-0.99;p=0.03) (Niven et al., 2014). Furthermore, the reviewed studies were mostly criticized as "block-box evaluations", lacking sufficient explanations to support the causal relationship between the intervention and the results, leaving a need of conceptual framework in future studies. Therefore, apart from inclusion of the identified successful measures, a suitable theory should be used to guide development and implementation of the critical transition program.

#### Conclusion

Critical elements in the critical transition program were identified, which could inform the development and implementation of successful programs in future. A critical transition program that is guided by a suitable theory and incorporates these critical elements is needed to address the high ICU readmission rate in Hong Kong.