International Journal of Integrated Care

Penkunas, Michael J. et al 2016 Evaluation methodology for a home-based integrated care program targeting frequently hospitalized older adults in Singapore. *International Journal of Integrated Care*, 16(6):A297, pp. 1-8, DOI: http://doi.org/10.5334/ijic.2845

CONFERENCE ABSTRACT

Evaluation methodology for a home-based integrated care program targeting frequently hospitalized older adults in Singapore

16th International Conference on Integrated Care, Barcelona 23-25 May 2016

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Background: In Singapore, the proportion of individuals over 65 years old is increasing rapidly: from 7% in 2000 to a projected 23% in 2030. Population aging presents substantial challenges for hospitals, community-health services, and long-term care providers as health systems attempt to provide high-quality treatments to older adults across the continuum of care. Khoo Teck Puat Hospital is a public hospital in the North Region of Singapore and serves a community of approximately 500,000 individuals. The occupancy rate within the government-subsidized inpatient wards exceeded 90% within six months of opening in July 2010. Administrative review identified a relatively small cohort of individuals who were repeatedly admitted for inpatient treatment within very short time periods. In early 2011, the Aging-in-Place (AIP) program was implemented to provide comprehensive patient-centered care to individuals with complex care needs as they transitioned from the hospital back into the community. Patients who experienced three or more inpatient episodes within a six month period were eligible to join the program at no cost regardless of diagnosis. Through home-visits and telephone consultations, community nurses and community health workers provided medical monitoring, decision making support, and facilitated linkages to additional services. The goal of this program was to integrate primary care with preventive and social services to help decrease individuals' dependency on inpatient treatment. In this presentation, we outline a three-phase mixed-methods evaluation designed to measure the effectiveness of the AIP program.

Literature review: Patients transitioning from inpatient settings back into the community often encounter difficulties in maintaining continuous care. Fragmentation of services increases the potential for a number of adverse events including serious medication errors. In fact, an estimated 40% to 50% of older adults in the United States experience an adverse event in the peridischarge period. Qualitative studies indicate that patients and their caregivers are often unprepared to manage complex health conditions, do not fully comprehend patients' care needs, and feel under supported from hospital staff during the transition phase. Formal transitional care programs typically incorporate home-health components comprised

of caregiver training, medication monitoring, and care coordination in an attempt to integrate services between the hospital and community settings. Existing programs typically include a combination of face-to-face visits and telephone follow-ups by which professionally trained staff draw upon a constellation of health management techniques to help patients and their caregivers successfully navigate the transition from the hospital back into the community. Results for transitional care programs are mixed due to differences between specific programs and patient populations, but high-quality programs have demonstrated reduced readmission rates, shorter inpatient lengths of stay, improved quality of life, as well as substantial cost savings.

Discussion: We designed a three-part evaluation to assess the effectiveness of the AIP program. The first part consisted of a retrospective analysis of administrative data to determine the extent to which the AIP program altered patients' hospital-based service use. AIP intervention patients were compared to a group of control individuals who also experienced three hospitalizations in a six month period but did not live within the AIP catchment area. Using hospital administrative data, we employed a difference-in-difference design comparing hospitalization rates, inpatient lengths of stay, and emergency service utilization between the intervention and control groups. Secondly, we conducted a prospective cohort study of AIP intervention patients and control individuals. This portion of the evaluation determined if the financial costs of implementing the AIP program were offset by savings in both hospital- and community-based medical services. The third portion of the evaluation consisted of a qualitative study of AIP program participants, their caregivers, and individuals who were referred to the program but decided not to participate. Information from semi-structured interviews informed us of participants' satisfaction with the intervention, caregivers' assessments of the assistance they received from staff, and reasons behind declining the services for those who rejected the program.

Conclusion: Our goal was to design a comprehensive mixed-methods evaluation to assess the effectiveness of the AIP program. The results from the two quantitative phases determined whether the integrated care intervention reduced unplanned hospital-based service use and whether the program was cost effective from both financial and societal standpoints. The qualitative portion allowed us to evaluate patients' and caregivers' experiences of the program while uncovering why frequently hospitalized patients chose not to participate in the intervention. Through the use of multiple data sources, we aimed to identify areas where this program succeeded in improving patients' and caregivers' lives, and determined areas where further developments were needed.

Keywords: transitional care; older adults; frequent hospitalization; home-health care; singapore