Building a Digital Bridge to support patient-centred care transitions from hospital to home for older adults with complex care needs: Study Protocol

Jason Nie[1], Terence Tang[1], Michelle Nelson[2,3], Hardeep Singh[1,2], Alana Armas[2,3], Mayura Loganathan[4], Ross Upshur[2], Carolyn Steele Gray[2,3], *on behalf of the Digital Bridge to Home Research Team*

[1]Institute for Better Health Trillium Health Partners, Toronto CA, [2]Bridgepoint Collaboratory for Research and Innovation, Lunenfeld-Tanenbaum Research Institute Sinai Health System, Toronto CA, [3]Institute for Health Policy, Management and Evaluation Dalla Lana School of Public Health University of Toronto, Toronto CA, [4]Mount Sinai Academic Family Health Team, Toronto CA

BACKGROUND

- Older adults with multi-morbidity and complex care needs (CCN) are among those most likely to experience frequent care transitions between settings, particularly from hospital to home.
- Poor communication or incomplete information transfer between clinicians (inpatient and primary care) or organizations during the transition from hospital to home can lead to medication errors, readmissions, decreased patient satisfaction, further morbidity and even mortality.
- Establishing digitally supported communication that enables person-centred care and self-management can offer advantages for patients transitioning from hospital to home.

OBJECTIVES

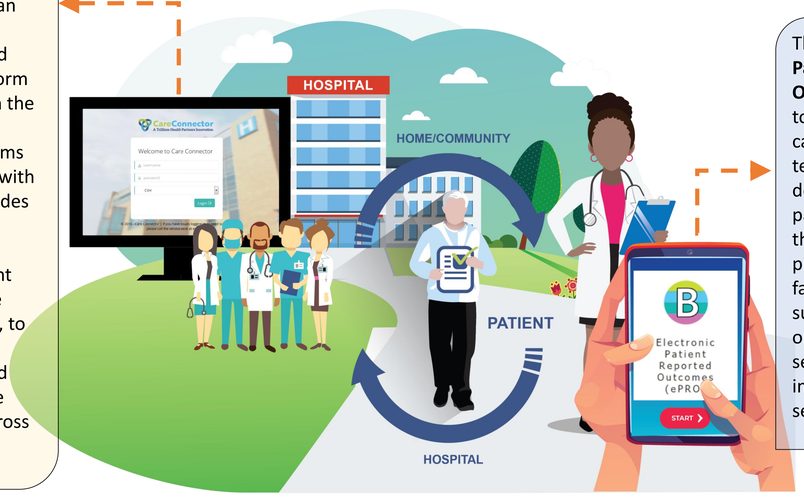
- To support effective transitions from hospital to home for people with CCN through the design, development, implementation & evaluation of a digital communication platform – **the Digital Bridge**

SETTING & POPULATION

- Two hospital systems in Ontario, Canada that provide acute, rehabilitation and primary care
- Patients ≥60 years of age with ≥3 chronic conditions transitioning from hospital to home (n=300) and their family caregivers; hospital providers on the general medicine and rehabilitation services; primary care providers (PCPs) of recruited patients

Care Connector is an interprofessional communication and collaboration platform initially designed in the hospital setting to support clinical teams caring for patients with CCN. The tool includes discharge communication supports like Patient Oriented Discharge Summaries (PODS), to support clinician communication and collaboration in the community and across care settings.

Figure 1. Digital Bridge - Building on the foundation of Care Connector and ePRO



The **electronic Patient Reported Outcomes (ePRO)** tool is a primary-care facing technology, co-designed with patients with CCN, their primary care providers and family caregivers to support patient-oriented goals and self-management in primary care settings.

INTERVENTION

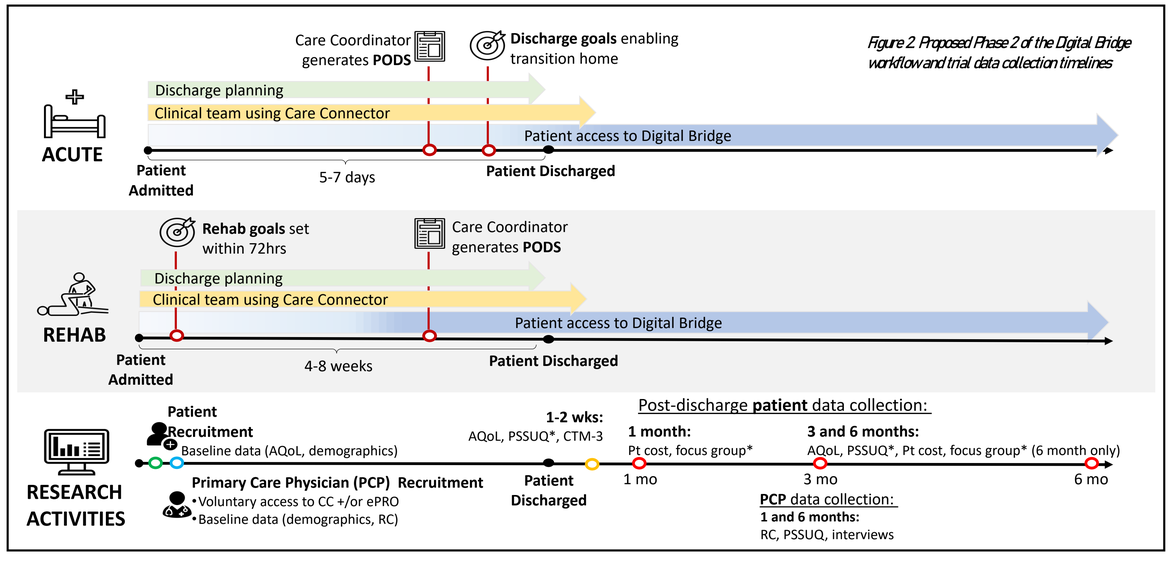
The **Digital Bridge** builds on the foundation of two validated technologies currently in use in hospital and community settings: **Care Connector** & **electronic Patient Reported Outcomes (ePRO)** *(fig. 1)*. Bringing the solutions together to create the Digital Bridge will build in new functionality and workflows that are, as yet, untested. Digital Bridge will support care transitions by:

1) inviting primary care physicians (PCPs) to access Care Connector while the patient is in hospital, allowing for asynchronous communication via messaging feature for proactive discharge planning,
2) facilitating the inclusion of inter-professional recommendations in the discharge module (e.g. diet and mobility) typically missing from traditional physician generated discharge summaries,
3) electronic generation of Patient Oriented Discharge Summaries (PODS) for use in patient-centred discharge teaching,
4) providing patients electronic access to PODS post discharge to facilitate use of information at home,
5) adoption of digital enabled goal-oriented process to engage patients and families in discharge, and
6) providing ongoing self-management support for patients using ePRO post discharge

STUDY DESIGN

- PHASE 1: Iterative co-design working groups with patients, caregivers, hospital providers and primary care providers to inform the development of the Digital Bridge transition workflow.
  - Patient/Family and Knowledge Translation Advisory Committees will provide guidance and feedback on the project to ensure value to stakeholders and enable future scale and spread
- PHASE 2: Pragmatic, real-world implementation, and developmental evaluation *(fig. 2)*
  - Non-randomized control trial to understand the impact of the intervention; we will collect baseline data from control and intervention units during PHASE 1. After co-design is complete, the technology enabled workflow will be rolled out to intervention units

Figure 2. Proposed Phase 2 of the Digital Bridge workflow and trial data collection timelines



OUTCOME MEASURES

- Care Transitions Measure-3 (CTM-3) to assess transition quality, # of days at home, goals-achieved (captured through the ePRO Goal-Attainment Scale), health related quality of life (AQoL-4D), costs, Post-Study System Usability Questionnaire (PSSUQ) to assess feasibility and usability
- Relational Coordination to evaluate communication and relational aspects of teamwork
- An embedded ethnography will be conducted to capture context and process data to inform the implementation assessment and the development of a scale and spread strategy

jason.nie@thp.ca