
POSTER ABSTRACT**Health System Modelling and Notation: A Method for Standard Care Pathway Design**

1st North American Conference on Integrated Care, Toronto, 4 - 7 October 2021

Alexander Smith¹, Nancy Dool-Kontio, Adam Dukelow, Sarah Jarman, Matthew Meyer¹ LHSC, Canada

Introduction

Care pathways and process maps are a common tool in health system planning and transformation, but approaches vary significantly making existing care pathways difficult to compare and scale. Health system modelling and notation (HSMN) aims to standardize a method of capturing care pathways by leveraging Business Process Model and Notation (BPMN), a standard “consolidated graphical notation used to outline process activities, their logical and temporal ordering, and the resources responsible for their execution.” HSMN further expands on this standard notation by describing a specific approach to healthcare care pathway design and application.

Aims Objectives Theory or Methods

Care pathways can be used for a variety of purposes, including: documenting and standardizing disease pathways, clarifying healthcare provider roles, developing patient individualized care plans, and as a quality improvement tool for making collaborative adjustments to current models of care. The HSMN approach also includes capacity for simulation, whereby health systems can simulate patient flow and resource utilization through a developed care pathway by inputting process data such as activity-based timing, patient distribution, available resources, and activity-based costs. These simulations can inform system capacity planning.

Highlights or Results or Key Findings

The HSMN approach builds pathways through a layered method within each disease group. HSMN begins with building a co-design team to include all perspectives and guide pathway development (refer to Abstract: Co-Designing Patient Care Pathways for Population Health Management). Information is added to pathways including:

- Examining available literature and best practice guidelines to seek alignment
- Co-designing a series of “always for everyone events”, or a minimum standard set of care activities that should be completed for all patients on any given step of the pathway
- Defining and prioritizing which roles can fulfill each activity

- Simulating the proposed future state system to assess impact on patient flow, capacity planning, and resource utilization
- Iterating design through a process of continuous quality improvement

At each step through the HSMN approach, Delphi panel surveys can be used to develop consensus through a co-design method with patients, caregivers, providers, and system administrators.

Conclusions

Care pathways are a powerful tool for system transformation and planning. HSMN differs from traditional pathways in that it focuses on the patient's perspective, can be expanded/minimized to the appropriate level of detail for each user, includes administrative and non-clinical flow elements, and has capacity planning functionality.

Implications for applicability/transferability sustainability and limitations

The use of the BPMN notation and HSMN methodology are key enablers towards transferability. A standard approach to care pathways allows for the sharing of pathways across health system jurisdictions as well as the comparison of pathways for different disease groups.