



GEMINI | General Medicine Inpatient Registry

The Challenge: General Internal Medicine (GIM) inpatients represent the largest single group of hospital patients, however, little is known about these patients and the quality of care they receive in hospital.

Approximately 1 million people in Ontario will be admitted to a hospital this year.¹ Up to half will be admitted to a General Medicine Ward.²

Substantial variations exist in care and outcomes

- **25-60%** of patients admitted with acute myocardial infarction, congestive heart failure, and pneumonia do not receive recommended care.^{3,4}
- **1 in 5** patients will have an unexpected return to hospital or will die within 30 days of discharge.⁵

Not enough is known about treating patients with multiple chronic conditions

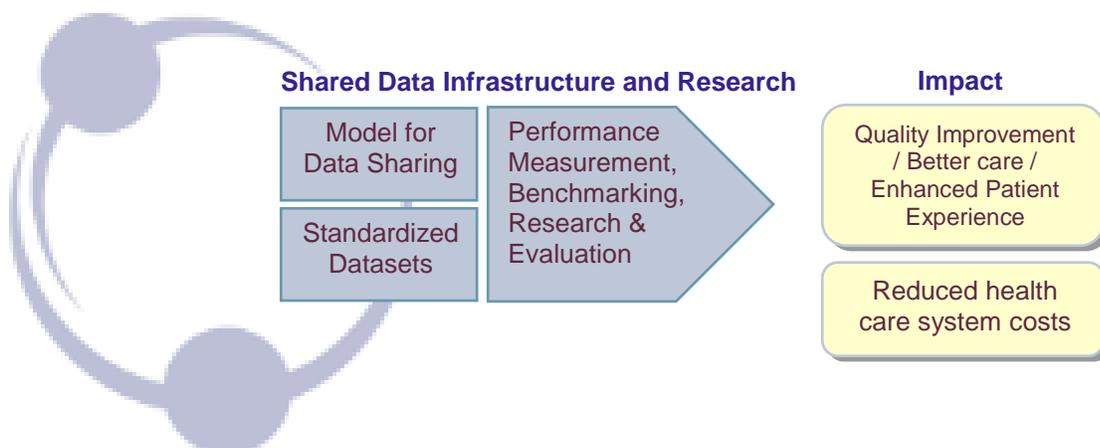
- **25%** of Ontarians have at least 2 chronic medical conditions and account for 80% of healthcare costs.^{6,7}
- Clinical practice is based on scientific understanding of isolated diseases. Quality improvement is also typically disease-specific.

Current data monitoring and reporting is inadequate

- Administrative data lack detailed clinical, social and economic information.
- There is a lack of timely reporting.
- There is limited monitoring and reporting of the quality of hospital care in Ontario.

The Opportunity

Hospitals are implementing electronic information systems, which store a wealth of untapped information. In order to take advantage of this information, our team is building a General Medicine Inpatient (GEMINI) Clinical Registry with the support of several hospitals and funding partners below. GEMINI will involve data collection across multiple hospitals based on automated electronic data retrieval where the data collected could be used for performance measurement, quality improvement, and clinical research to improve care and scientific understanding about the GIM population. This is how GEMINI is taking shape:



Timeline

As of September 2015, we are currently demonstrating the feasibility of the shared data infrastructure.

2014-2015
PHASE 1
Demonstrate Feasibility

2016+
PHASE 2
**Expand across
Ontario and
Canada:**

- We are currently demonstrating feasibility with a retrospective cohort study of patients admitted April 1 2010 – March 31 2015.
 - This involves data collection for approximately 150,000 patient electronic records at 7 partner hospitals.
 - A model for data-sharing across these hospitals has been developed.
 - Standardized dataset has been developed.
 - Will map data elements across hospitals to permit analysis.
- A number of sub-studies have also been developed that will be launched in 2016.*

**Studies include*

- Following 200 patients at 3 hospitals through the immediate post-discharge period.
- Investigating the use of wearable technology to measure key aspects of patient experience.
- Investigating delirium in general medicine patients.

Hospitals and Funding Partners



GEMINI Core Investigators

Amol Verma
Janice Kwan
Lauren Lapointe-Shaw
Shail Rawal
Terence Tang
Adina Weinerman
Fahad Razak

Advisory Group

Andreas Laupacis
Muhammad Mamdani
Peter Cram
Stephen Hwang
Irfan Dhalla
William Coke
Steve Shadowitz
Ross Upshur