The Virtual Ward
*At the Intersection Clinical, Research & Quality Improvement*

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Consider this patient…


Medical problems include COPD, previous stroke, atrial fibrillation, previous bypass surgery, ICD for ventricular tachycardia.

At least 3 admissions and 4 emergency department visits in previous year.

Continues to smoke. Non-adherent with medications.

Brought to St. Michael’s by EMS because of shortness of breath.

ER physician diagnoses patient with COPD exacerbation and refers patient to internal medicine.
The internal medicine resident thinks to herself at 2 a.m…
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It is going to be easy to treat the COPD exacerbation
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It is going to be easy to treat the COPD exacerbation

But then, she asks herself:
The internal medicine resident thinks to herself at 2 a.m…

It is going to be easy to treat the COPD exacerbation

But then, she asks herself:

Won’t this patient just be back here again in a few weeks or months?
Insanity: doing the same thing over and over again and expecting different results.
Why focus on care after discharge?

Disease intensity vs. Care intensity

Time

Hospital
Rehab
Home

Too much care
Not enough care

Long-term care
Why focus on care after discharge?

Hospital admissions have become shorter and shorter, so patients are sicker at discharge

Large “voltage drop” in the intensity of care at the time of discharge

Readmissions are
- Common (10-25% of patients are readmitted within 30 days)
- Costly (~$700 million per year in Ontario)
- Sometimes preventable (disagreement about what proportion)
Systematic review of interventions to reduce 30-day readmissions

Overall, however, no single intervention or bundle of interventions consistently associated with reduced risk

- Patient hotline
- Bridge
  - Transition coach
  - Patient-centred discharge instructions

Summary of evidence

Overall, not much evidence

Several reasons to believe that post-discharge health outcomes probably can be improved
  • Lots of anecdotal and “low-quality” evidence
  • Variability in readmission rates
  • High-quality evidence from single-centre trials

May be able to reduce readmission rate well below current rates, since no interventions have been comprehensive

As in other areas of medicine, impact is likely to be greatest if we focus on those at highest risk
A tool to estimate the risk of readmission – the LACE index

Clinical prediction rule derived and internally validated using data collected from 4812 patients at 11 hospitals

48 potential predictors considered, including functional status and home supports

Externally validated using data from 1,000,000 patient records

L = length of stay
A = acuity of admission
C = Charlson comorbidity index
E = number of ER visits in last 6 months
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Performance of the LACE index

Van Walraven et al, CMAJ 2010
What is a Virtual Ward?

Method of providing care to people in the community

“Ward” – Borrows elements of hospital care (team-based, shared notes, single point of contact)

“Virtual” - Patients remain at home (nothing “high-tech” about it)
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Virtual Ward
- Housed at Women’s College
- Multidisciplinary team hired by CCAC
- Dedicated general internist, family physician or geriatrician

Discharge to primary care

Communicate with non-Virtual Ward care providers (family doctor, non-Virtual Ward CCAC staff, social supports, specialists, etc.)

Discharge to primary care occurs quickly if all supports in place

St. Michael’s Inspired Care, Inspiring Science.
TGH University Health Network
Sunnybrook Health Sciences Centre
TWH University Health Network

Women's College Hospital
Toronto Central CCAC CASC
University of Toronto Faculty of Medicine
St. Michael’s Inspired Care. Inspiring Science.
Randomized controlled trial – design

P = Population
• High-risk adults (LACE ≥ 10) discharged to home or long-term care

I = Intervention
• Virtual Ward

C = Control
• Usual Care

O = Outcome
• Primary: readmission or death within 30 days
• Secondary: readmission, death, ER visits, death at 30, 90, 180 and 365 days
Back to the patient…


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What the Virtual Ward team did

Over many visits, our care coordinator helped patient become more engaged in his own care

Medications reviewed and blister packed. Now using one pharmacy only

Care coordinator arranged for OT assessment – now using walker

Greater confidence to leave home – easier for him to see his family doctor

Improved relationship with family doctor

No ED visits or admissions in 6 months after admission to Virtual Ward
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Five lessons from the Virtual Ward trial
Lesson #1

Organizations can partner to collaborate at the point of care

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Lesson #2

People who are in and out of hospital are very complicated
Lesson #3

New models of care can and must be rigorously evaluated
Lesson #4

Lack of integration in healthcare is a major problem
Lesson #5

Access to physicians is very poor for patients who are home-bound
Acknowledgments