Telehomecare: Keeping Chronic Care Patients at Home

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President and Chief Executive Officer
Montreal Health and Social Service Agency
BACKGROUND

Population of 200,000

16% were age 65 or over in 2006

By 2019, seniors will represent 20.4% of the population
4 dominant chronic diseases

Heart failure (2,066 pers.)
Diabetes (10,498 pers.)
COLD (3,226 pers.)
Hypertension (24,357 pers.)
BACKGROUND

Increased demand

Scarcity of resources

Difficulty in meeting the demand
THE SERVICE

120 home patient stations

Client enters his health data on the screen

Learning to manage symptoms

Self-management of the disease
SOLUTION

Improve performance

Optimize the resources

Dare to innovate!
SERVICE

1 nurse monitors 80 clients at once

Average of 2.2 home visits per patient

Monitoring over a period of 3 months

A clear picture of clients’ state of health, in real time
BENEFITS FOR THE CLIENT

Personalized and frequent service

Security of being at home

Fewer visits to emergency

High rate of satisfaction
BENEFITS FOR THE HEALTH AND SOCIAL SERVICE CENTRE

More people monitored at the same time

Fewer home visits

Number of people monitored by one nurse

- Regular follow-up: 20 people
- Remote follow-up of patients: 80 people

Optimization of resources
POINTE-DE-L’ÎLE
Health and Social Service Centre
Seeing things differently!
Virtual Wards
Irfan Dhalla, MD, MSc, FRCPC
Imagine a 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?
Insanity: doing the same thing over and over again and expecting different results.
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)
Post-discharge health outcomes

Rehospitalizations among Patients in the Medicare Fee-for-Service Program

Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H.
Post-discharge health outcomes

21.1% of US Medicare patients with a medical hospitalization readmitted within 30 days of discharge

Total cost to US Medicare estimated to be $17.4 billion (in 2004)

Jencks et al, NEJM 2009; 360: 1418-28
Post-discharge health outcomes

Three key points:

1. In 50.2% of cases with readmission within 30 days, no outpatient physician visit between discharge and readmission

2. No single disease accounts for more than 8% of readmissions

3. Even in patients with heart failure, most readmissions are for conditions other than heart failure

Jencks et al, NEJM 2009; 360: 1418-28
Summary of evidence

Evidence base remains underdeveloped

Post-discharge health outcomes probably can be improved

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
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)
The Virtual Ward – at the intersection of clinical care, research and quality improvement

**Virtual Ward**
- Housed at Women’s College
- Multidisciplinary team hired by CCAC
- Dedicated general internist, family physician or geriatrician

**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**
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
Randomized controlled trial – interim progress

First 606 patients (en route to target of 1510)

- Average age: 69.5 years
- Male: 54%
- Homeless: 3%
- Alcohol misuse: 17%
- Drug misuse: 10%

- Readmission within 30 days: 18% (both groups together)
- Median length of stay on VW: 29 days
Back to the patient...


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

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Continues to smoke. Non-adherent with medications.

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ER physician diagnoses patient with COPD exacerbation and refers patient to internal medicine.
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
The Virtual Ward – at the intersection of clinical care, research and quality improvement

Five lessons at the midpoint of the Virtual Ward trial
Lesson #1

Organizations can partner to collaborate at the point of care
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

HomeViVE Program

“Home Visits to Vancouver’s Elders”
TARGET: FRAILTY
911
The Alternative:
BETTER CARE (our belief):

- AVOID INSTITUTION
- Care at home
- PRIMARY care
- multidisciplinary
- 24/7
- Flexible caregiver Support
The Mandate

1. Good care for frailty at home as alternative to acute and long-term institution

2. “Patient-centered”
2-Level Program

Home ViVE: frail homebound
Home ViVE PLUS: frailest of the frail
Home VIVE Plus

- 6 part-time doctors (VIVE and VIVE Plus)
- 2 RN/Case Managers
- 1.5 PT
- 2 PT Assistants
- 1 OT
- 1 secretary
Program Funding

Medical Plan Fee-for-Service
Regional Budget Funding
Patient Focused Funding (PFF)
Demographics

- Approximately 400 patients
- Average age 85
- Multiple medical and/or cognitive-psychiatric issues
Burden of Illness - 114 patients

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<th>Type of Disease</th>
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<tr>
<td>Dementia</td>
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PROOF OF CONCEPT:
(pre- and post-program comparison)

1. ViVE: 131 patients 1 year (2009-2010)
   74 ER visits prevented

2. Dr. Ted Rosenberg (comparable practice Victoria BC 2008-2010): 248 patients 1 year,
   46 admissions, 26 ER, 639 hospital days prevented

3. Proposed Study: will include cost comparison and proof of quality
What Stymies Us?

1. Professional turf issues
2. HOSPITAL going in coming out
3. Lack of trust
What Helps Us?

1. Regional per-patient funding
2. Good MD housecall fee item
3. Demonstrating system savings
4. Building trust
A BITTER PILL

HOW THE MEDICAL SYSTEM IS FAILING THE ELDERLY

JOHN SLOAN, MD

FOREWORD BY GABOR MATÉ, MD

sunshiners.ca
Nurse Practitioner-Led Clinics
An innovative primary care model: Enhanced care for patients with complex needs

NP Tammy O’Rourke, BS/MS, PhD(c)
Clinical Lead NP
Professor: Brock University/Loyalist College Collaborative Undergraduate Nursing Program
Nurse Practitioner-Led Clinics

- New model for the delivery of primary health care (PHC)
- One of three models: FHTs, CHCs, NPLCs
- Goal: improve access to care for vulnerable populations
- Collaborative team-based approach

Evidenced based model of care (DiCenso & Bryant-Lukosius, 2010; Edward, Rowan & Grinspun, 2011; Kleinpell, 2009; Thille & Rowan, 2008)
Accepting New Patients
Nurse Practitioner-Led Clinics: What’s the difference

- Nurse Practitioners: main providers of PHC
- Governance model: 51% representation by NPs
- NP Clinical Lead

(Butcher & Heale, 2010)
How is our clinic different from traditional models of care?

- Provider ratio
- Rapid Access Appointments (within 24 hours)
- Evening and weekend appointments
- Salaried professionals: decrease pressures associated with fee for service model
- Interactive interdisciplinary referrals
- Chronic Disease Management Programs
  - Hypertension
  - INR monitoring
  - Diabetes
The Premier Visits and lauds Nurse Practitioner Facility in Belleville

- McGuinty called the clinic a "remarkable evolution of primary healthcare in Ontario," before adding that he takes pride in knowing that the nurse practitioner-led clinic is the "first of its kind in North America."

*Belleville Intelligencer*, August 14, 2010
People in the Belleville area now have better access to frontline health care thanks to a new, innovative clinic led by nurse practitioners.

Nurse practitioner-led clinics offer a team-based approach to frontline health care. Nurse practitioners treat common illnesses and injuries, and order lab tests, X-rays and other diagnostic tests. They can also refer patients to specialists. The team also includes doctors, nurses and other health care providers.
Let’s look at the number and the even more important data... what are the patients saying....

• The Numbers
  • In the last quarter of 2011
  • Two NPs
    • Chronic care
      • Initial treatment: 378 patients
      • Adjustment: 68 patients (433 encounters)
      • Monitoring: 471 patients
  • Alternative hours
    • 276 visits
- 84 year old female
  - Family physician retired
  - eGFR 20 when she was first screened at our clinic
- Medical history
  - Un-controlled hypertension
  - Chronic pain: arthritis and lumbar stenosis
  - COPD
  - Osteopenia
  - Angina
  - Hypercholesteremia
  - Irritable Bowel
  - GERD
Time to ponder

- Past medical history: Excision of colon adenoma
- RN for intake, NP for physical and Pharmacist for polypharmacy
- Referral to nephrology
- Immediate reduction and deletion of medication that were nephrotoxic
- BP medication was further adjusted to compensate for loose stools
- BP is now controlled
Patient’s Perspective

• “I’m more than happy with the services and care I have received so far. I feel much better and I’m sleeping better at night. Before my BP medications were changed I had very vivid dreams that left me feeling fatigued the following day. I have confidence in my NP and the clinic pharmacist……..I’m amazed and impressed at how quickly the NP was able to arrange an appointment with me to see a nephrologist.”
Community Facilitators and Challenges

- **Facilitators**
  - Large # of unattached
  - Shortage of physicians
  - Availability of NPs
  - Local media coverage
  - Working relationship with collaborative physician
  - Patient satisfaction
  - NP-led governance

- **Challenges**
  - Complexity of patients
  - Longer visits
  - # of patients seen was less than anticipated
  - Organized medicine opposition
System Leverages and Blockages  
“A window of Opportunity”

- **Processes**
  - Lobbying and advocacy
  - Leadership
  - Partnering and networking
  - Knowledge development and exchange

- **Structures**
  - Professional practice
  - Legislation and legalities
  - Education
  - Resources

References