A Novel Service Design for Remote Transmission of Pacemaker Data
St. Mary’s General Hospital, Kitchener
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Disclosure

• I have no actual or potential conflict of interest in relation to this presentation
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St. Mary’s General Hospital

- 150 acute care bed community hospital located in Kitchener, ON
- Home to the Regional Cardiac Care Centre (RCCC) for Waterloo-Wellington
- Has provided a full range of cardiac services including device insertions since 2000

www.smgh.ca
67% of patients live outside of Kitchener Waterloo. Highest concentration of patients in Guelph, Cambridge, Stratford, Brampton, Woodstock
Appointment Volumes

Device Clinic Visits 2000-2017

Year over Year Average Annual Growth Rate 15% (Conservative)

• Follow up Schedule:: 72 hrs after insertion, 6 months, 1 yr- ,very 3, 2, 1 month until replacement

• In comparable clinics/patient population 95% of visits are for routine follow-up, 82 % require no programming (Allen, 2014)

Remote Monitoring of Cardiac Devices

Benefits cited:

- patient convenience, with reduced use of office services
- equal safety compared with in-person evaluation
- a relative reduction in the risk of death
- shorter detection time to actionable events (arrhythmias, cardiovascular disease progression, and device malfunction)
- increased battery longevity

Objective

To assess the feasibility of offering patients who need routine pacemaker device checks the opportunity to transmit data remotely from a satellite site in the Guelph region

Key factors:

- Not all pacemaker patients candidates for continuous home monitoring
- Availability of Medtronic CareLink Express™ (un-paired) currently used primarily in EDs
Service Model

Patient enrolled in service at device insertion
↓
Given remote & in-clinic appointments
↓
Visit site in their community to transmit data
↓
Data read in-clinic within 24 hrs (Carelink portal)
↓
Patient called/report sent to physician
Implementation: PDSA Cycle

1. Work with patients, caregivers and clinic staff to design model

2. Identify those patients from the Guelph region who would benefit from/are eligible for remote monitoring

3. Monthly sessions then increase frequency to weekly (rapid feedback)
Service Design - Stakeholder Engagement

Process

- Solicited feedback and evaluation on an on-going basis
- Met with small groups of patients, caregivers & community interest groups in Guelph
- Discussed/mapped service from patient point of view (Experience-based Design method)
- Solicited feedback and suggestions on location
- Consulted with GGH Transition steering group

Patient & Caregiver priorities (must-haves/good-to haves):

- Ease of access
- Free parking
- Was not important to them that the service be based at a medical facility
“Kiosk” Remote Service Model

• ~200 patients using service
• Location: YMCA of Guelph
• 1st session May 26th, 2014
• Now held every Monday afternoon
• Average session length: 7 min
• Patients supported on-site by volunteers
• Volunteers recruited through partnership with St. Joseph’s, Guelph. Screened by SMGH.
Evaluation

No adverse clinical events

Patient Experience: 95% of participants strongly agree that they would continue to use the service, Improved attendance for Guelph patients who were no-shows at the clinic
Methods: Baseline in-clinic survey and anonymous mailed post-session

Clinic Efficiency: Service requires ~50% less resource time per visit, and has the potential to offset increase in in-clinic appointment volumes if scaled
Methods: Time study conducted in clinic and following implementation (2x)

Value for Money: No direct overhead
• YMCA partnership
• Volunteers assist patients on site

However- Reimbursement levels not established by MOHLTC for Remote Monitoring services for pacemaker patients.
Key Success Factors & Barriers

- Patient “Pull” & engagement
- Executive attention
- Partnerships
- Clinical champion
- Real time evaluation
- Reimbursement
- Availability of data
- Standards of Care/Evidence
Next Steps

Scale?  Improve In-clinic flow?

Status-quo?
Key Considerations

• Funding needed to off-set lack of reimbursement once threshold volume is met/clinic operations are optimized
• Assessment of need (volumes, patient population)
• Opportunity to scale through existing partnerships
• Integrate fully into standard of care
Questions?
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