Telemedicine and Remote Monitoring: A Tool for Reduction in Readmissions

Kyle G. Lavergne, APRN, FNP –BC
Exchange of medical information via electronic communications from one site to another to improve the clinical health of patient’s.

Examples:

- Two-way video conferencing /Robot
- Smart phones utilizing consumer-focused wireless applications
- Wireless tools with remote monitoring of Biometric data
- Patient portals/Email
- Nursing call centers
Modalities Differ by Recipient and Timing of Service

1. **Synchronous (real time)**
   - Provider-to-Patient
     - Common applications:
       - Virtual primary care
       - Virtual urgent care
       - Virtual pre- and post-op

2. **Provider-to-Provider**
   - Common applications:
     - Telestroke
     - TeleICU
     - Telepsychiatry

3. **Asynchronous (time lag)**
   - Common applications:
     - Secure e-messaging
     - Remote patient monitoring
     - Wearables/Implantables

4. Common applications (time lag):
   - Teleradiology
   - Telepharmacy
   - Teledermatology
The Time Is Ripe for Virtual Care/Telehealth

Year-Over-Year Medicare Reimbursement for Telehealth Services

Estimated U.S. Growth in Virtual Consults

5-YR Growth

604% Growth

(In millions)
Why Re-admissions are Top Priority

➢ **Readmission Reduction Program (HRRP):** ACA requires CMS to reduce payments to hospitals with excess readmissions in a 30 day period specific to *Myocardial Infarction, Heart Failure, and Pneumonia.*

➢ **2015:** expanded> **COPD, Total Hip Arthroplasty, and Total Knee Arthroplasty**

➢ **2016:** Expanded pneumonia to included *aspiration pneumonia* and *sepsis*

➢ **2017:** addition of **coronary artery bypass graft (CABG) surgery**

➢ **Louisiana:** 59% of hospitals receive penalties, average penalty 0.71%, number of penalized hospitals = 72
Primary Causes of Re-admissions

➢ Poor Quality of Care in the initial Hospital Admission
➢ In-adequate Discharge Planning/Teaching
➢ In-adequate post discharge follow up
➢ Poor coordination of inpatient and outpatient healthcare teams
➢ Exacerbation of Chronic conditions
Readmission Statistics

➢ **18%** of Medicare patients discharged from the hospital are readmitted within 30 days

➢ Cost **$17 billion** Annually to Medicare

➢ 2015: **3/4** of hospitals received readmission penalties

➢ only 39 hospitals (1%) are receiving the full 3% penalty for excess readmissions average hospital penalty = 0.63%.

➢ Medicare beneficiaries with **>5 chronic conditions** have a readmission rate of **25%**, compared to **9%** for those with one or no chronic conditions.
Health Industry Number second annual Reducing Hospital Readmissions e-survey
Best Practices: Reducing Readmissions

**Pre and post-discharge Risk-screening**
- Evaluation of readmission risk; Co-morbid risks
- Medicare population > average readmission day is 14 days

**Self Management**
- Assess capacity of high-risk patients to self-manage care
- Identify Family support

**Care Coordination**
- Assure Timely f/u Visit (48-72hrs)
- Medication Reconciliation and Compliance
- Home nurse visits with Nutritional screening
- Disease Management coaching
- Telehealth monitoring as needed
- Increase telephonic communication with patients/family
Telemonitoring of Fluid Status in Heart Failure: CHAMPION

(Implanted Wireless Monitor in Pulmonary Artery)

**Trial Results:**  n=559
- **Treatment group** > 270
- **Control Group** > 289

**CHF Hospitalizations:**
- 84 in the treatment group (n=270)
- 120 in the control group (n=280)

*37% reduction* in heart-failure-related hospitalization compared with the control group

Our results are consistent with, and extend, previous findings by definitively showing a significant and large reduction in hospitalization for patients with NYHA class III heart failure who were managed with a wireless implantable hemodynamic monitoring system. The addition of information about pulmonary artery pressure to clinical signs and symptoms allows for improved heart failure management. (The Lancet)
Data Research

➢ VAMC Telemedicine reduced HF readmission by 51%, and other illnesses by 41%. Estimated saving $10 billion

➢ VAMC Telemedicine yielded a reduction in length of stay ranged from 20% to 56%.

➢ Similar results were also found by Geisinger Health Plan,

➢ **Readmission Rates:**
  
  30DAY: 44%
  
  90DAY: 38%

**Total Cost of Care:** 11%
# Internal Case Study

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Total Number of Patients</th>
<th>Number of Readmissions</th>
<th>Readmission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1, 2015 through December 31, 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LGH HF readmissions</td>
<td>383</td>
<td>65</td>
<td>16.97%</td>
</tr>
<tr>
<td>PA Pressure Monitoring readmissions</td>
<td>51</td>
<td>3</td>
<td>5.88%</td>
</tr>
</tbody>
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National Average 21.6%
Impact of a Telehealth and Care Management Program on All-Cause Mortality and Healthcare Utilization in Patients with Heart Failure.

➢ University of Colorado School of Medicine telehealth system

➢ Health Buddy Program telehealth system yielded significantly better survival, improved outcomes and reduced hospitalization in Medicare beneficiaries with HF.

➢ Meta-analysis of 5702 patients (HF patients)

➢ Compared to SOC, Implantable device telemonitoring was associated with a marked reduction in planned hospital visits.

➢ Associated with lower monetary costs
Cost comparison between telemonitoring and usual care of heart failure: a systematic review.

➢ University Health Network, Toronto, Ontario, Canada
➢ Cost reductions from telemonitoring compared to SOC, = 1.6% to 68.3%.
➢ Cost reductions were mainly attributed to reduced hospitalization expenditures.
Telemedicine: Using Remote Monitoring to Reduce Hospital Readmissions

➢ St. Vincent’s Health System in Indianapolis: 300 patients with HF and/or COPD 30 days post discharge

➢ TeleHealth (Videoconferencing) group had a 5% readmission rate Versus 20% in the control group.
Telehealth program with remote patient monitoring (HF, CAP, COPD, MI, hip/knee replacement)

30-day readmission decrease of 10%, compared to a national average of 17.5 percent.
Telemedicine and Readmission

Opportunity for reduction of readmissions

Reduction in overall Cost of care

Quality in a different patient centered approach
Citations


Durr, Tim (2016, July 14), Reducing Readmission, Length of Stay & Cost of Care, The Pulse of Telehealth, MeMD Blog


MGMA Knowledge Center Resource Guide – Marti Cox, MLIS 3 © 2017 Medical Group Management Association

European Journal of Heart Failure, 18(2), 195–204.


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