Change Your Stars: Telehealth Remote Patient Monitoring Nursing

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Remote Patient Monitoring
Change Your Stars
Objectives

This session will address approaches to the use of telehealth and remote patient monitoring to maximize nurse-led patient education. We will:

• Analyze how nurses using cutting edge technology such as remote patient monitoring can expand patient education and support.

• Describe how a nurse-led project at a distance can build relationships and partner with people and improve healthcare outcomes.

• Examine how at–the–moment individualized patient education and daily home self monitoring can assist people with Type 2 Diabetes and hypertension make and sustain healthy behavioral changes.
Telehealth: an Umbrella term

- Teleconsultation (i.e. Tumor Boards)
- Asynchronous Services (i.e. Teleradiology, Telepathology)
- Acute Care Services: TeleStroke, TeleICU, TeleTrauma
- Remote Patient Monitoring
- Direct to Consumer Illness Visits
- Telemedicine Provider Office Visits
Traditional distribution of care

Hospital
- Acute Needs - Hospitalization Needed:
  - Acute Abdominal Pain
  - Acute Pelvic Bleeding
  - Chest Pain
  - Complex Fractures
  - Gunshot wounds
  - Shortness of Breath
  - Sepsis

Immediate Care
- Acute Needs - No Hospitalization Needed:
  - Asthma
  - Minor Lacerations
  - Minor Eye Injuries
  - Possible Broken Bones
  - Sports Injuries
  - Sprains and Strains
  - Suturing
  - Falls (less than 7 ft)

Clinic/Ambulatory
- Preventative visits
  - Annual Wellness
  - Walk-In Labs
  - Imaging Follow Up
  - School Physicals
  - RN Visit Injections
  - Post Hospitalization F/U
  - Patient Education
  - Ongoing vital sign Monitoring
  - Chronic Condition Management
  - Colds, Rashes, Flu...

Home
- Palliative Care
  - Home Health Care
It’s time to think outside the box

CONNECT THESE 9 DOTS WITH 4 STRAIGHT LINES.
Redistribution of care

Hospital
- Acute Needs - Hospitalization Needed:
  - Acute Abdominal Pain
  - Acute Pelvic Bleeding
  - Chest Pain
  - Complex Fractures
  - Gunshot wounds
  - Shortness of Breath
- Acute Needs - No Hospitalization Needed:
  - Asthma
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  - Minor Eye Injuries
  - Possible Broken Bones
  - Sports Injuries
  - Sprains and Strains
  - Suturing
  - Falls (less than 7 ft)

Immediate Care
- Preventative visits
- Annual Wellness
- Walk-In Labs
- Imaging Follow Up
- School Physicals
- RN Visit Injections
- Scraps
- Wound Care

Clinic/Ambulatory
- Patient Education
- Ongoing vital sign monitoring
- Palliative Care
- Home Health Care
- Post Hospitalization F/U
- Chronic Care management (shared with Clinic)
- Colds, fever, flu, sore throat
- Sinus Problems
- Rashes and Sores
- UTI

Home
What Telehealth Services can be offered at home?
Virtual Home Visit

- Confirm medication reconciliation and compliance
- View post op wounds
- Evaluate home environment
- Build relationships
- Early identification of abnormal disease/healing process
- Prevent unnecessary trips to ER and readmissions
- Limit social loneliness
Telemedicine Visit (Home)-
“the remote diagnosis and treatment of patients by means of telecommunications technology.”

• Provider to Patient
• Reimbursement varies by Payer and by state
• Potentially billable service depending on state regulations
  • Center for Connected Health Policy to review state specific information: http://www.cchpca.org/
  • American Telemedicine Association’s (ATA) report, State Telemedicine Gaps Analysis
  • HRSA Medicare Telehealth Payment Eligibility Analyzer

• Currently not billable for Medicare (not eligible location).
  • Starting 2019, some exceptions S. 870 Chronic Care Act
    • Details currently being interpreted (i.e. dialysis care, independent care at home)
Remote Patient Monitoring use of “digital technologies to collect medical and other forms of health data from individuals in one location and electronically transmit that information securely to health care providers in a different location for assessment and recommendations.”

- Collect Biometric, Medical, and Symptom Data
- Monitor Configurable Alerts
- Provider Intervention
- Report and Care Team Handoff to PCP/Specialist Teams
- Provide Patient Support and Education
What is included in RPM?

• Onboarding
  • Assessment medical
  • Eligibility, Informed Consent

• Behavior Change Management
  • Evidence-based health coaching
    • Motivational interviewing, action planning, goal setting
  • Self-management education
    • When and who to call
    • Keeping link with PCP

• Alerts Management
  • Medication management
  • Symptom management

• Care Navigation
  • Links to other resources
    • Case managers, pharmacists, social work, community resources
  • Discharge readiness
RISCC Trial
Remote Interventions
Improving Specialty Complex Care

Grant # 1C1CMS331344 from Department of Health and Human Services, Centers for Medicare and Medicaid Services
Description of the Program

**Mission statement:** Develop and test a new care delivery and payment model, utilizing remote patient monitoring in the home, for complex diabetic patients discharged from Nebraska Medicine.

**CMS has provided funding for 3 years:** Project started September 2014; we are currently planning for its sustainability beyond Year 3.

**Who are the patients in the program:**
- Diagnosis of type 2 diabetes
- At least 19 years of age
- English speaking
- Discharged from the hospital within the last month
- Not pregnant
- No liver disease
- Not on a waiting list for organ transplant
# Why Diabetes?

<table>
<thead>
<tr>
<th>Fast Facts on Diabetes</th>
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<tbody>
<tr>
<td>29.1 million people or 9.3% of the U.S. population have diabetes.</td>
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<tr>
<td><strong>Diagnosed</strong></td>
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<tr>
<td>21.0 million people</td>
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<tr>
<td><strong>Undiagnosed</strong></td>
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<tr>
<td>8.1 million people</td>
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(27.8% of people with diabetes are undiagnosed). All ages, 2012
## Costs

### Estimated Diabetes Costs in the United States, 2012

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tbody>
<tr>
<td><strong>Total (Direct and Indirect)</strong></td>
<td>$245 billion</td>
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<tr>
<td><strong>Direct Medical Costs</strong></td>
<td>$176 billion</td>
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<tr>
<td>After adjusting for population age and sex differences, average medical expenditures among people with diagnosed diabetes were 2.3 times higher than people without diabetes.</td>
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<tr>
<td><strong>Indirect Costs</strong></td>
<td>$69 billion</td>
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<td>(disability, work loss, premature death).</td>
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Techniques for partnership
## Basic Health Care Behaviors

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<thead>
<tr>
<th>Healthy Behaviors</th>
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<tr>
<td>1 Reducing Risks</td>
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<tr>
<td>Monitoring: How to monitor, best times to monitor, what do the results mean/when to report</td>
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<tr>
<td>3 Healthy Eating: Goals, Label Reading, Eating out, Meal Planning, etc.</td>
</tr>
<tr>
<td>4 Adding Activity to your life</td>
</tr>
<tr>
<td>5 Medications</td>
</tr>
<tr>
<td>6 Healthy Coping</td>
</tr>
<tr>
<td>7 Problem Solving/Overcoming Barriers</td>
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Gain Trust
Shared Goal Setting
In the moment Education:
Open-Ended Teach Back
Eating too much sugar causes diabetes.

All overweight people will develop diabetes.

Diabetes really is not all that serious.

People with diabetes must eat special diabetic foods.

People with diabetes can never eat candy, chocolate, starches, bread and potatoes.

If you have Type 2 diabetes and need to start insulin it’s your own fault.
Case Study #1

35 yr. old male working as night—shift guard seen in ER 1 year ago for dental infection blood sugar 388. Does not recall being diagnosed with DM but was placed on metformin BID, unsure of dose. No PCP. Stopped med after a few months because he was “lowering his carbohydrate intake. “

Wife has DM 2 so he occasionally “checked glucose”; elevated to 500, so he “borrowed” wife meds, then restarted metformin 1000 mg bid. On study/seen at PCP after 3 ER/immediate care visits for recurrent infections in 60 days. A1C 13.0.

Increased exercise, decreased use of vending machines at night. Began daily checking glucose and was available and open to coaches calls.

Final (90 days later) A1c 7.9
# Nebraska Medicine Transition of Care Diabetes Type 2 Program Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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<tbody>
<tr>
<td>Decrease HgbA1C&gt;9</td>
<td>Mean drop of 2.54 points (average A1C from 11 to 8.46 after 90 days of monitoring</td>
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<td>Re-Admission Rates</td>
<td>4.3% - All cause 30-day readmission rate (RPM participants)</td>
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<tr>
<td></td>
<td>15.5% - All cause 30-day readmission rate (Nebraska Medicine, per Vizient)</td>
</tr>
<tr>
<td>Decrease in # of inpatient days if readmitted</td>
<td>3.77 days on program vs 5.1 days off program at one month of participation;</td>
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<td>4.5 days on program vs 6.28 days off program after 90 days of participation</td>
</tr>
<tr>
<td>Decrease cost of care in re-admitted patients</td>
<td>$2,086 less at 30 days and $4,192 less at 90 days for participant’s vs comparison groups</td>
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<tr>
<td>Increase Visits to PCP</td>
<td>Participants sought follow up care with PCP 51% more often than non-participants (n=1,110)</td>
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<tr>
<td>Improve Patient Activation Measures</td>
<td>PAM13 increased from 64.16 to 69.68 from program initiation to 90 days after being on program. Each point increase in PAM represents a 2% increase in medication compliance, and a 2% decreased risk of hospitalization</td>
</tr>
<tr>
<td>High patient satisfaction</td>
<td>94% of participants (n=844) would recommend this program to a friend.</td>
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Pilot Program

NMC Clinics

- Based on Ambulatory Patient Population Locations
- Leadership Support
- Expansion
Case Study #2

64 yr old male with DM and hypertension.

Over one weekend, weight up 5 pound and diastolic blood pressure >110 for the first time. Glucose stable.

Called to check on medications, taking them as directed.

At phone call, lots of Sardines x 2 days.

At-the-moment label readings and instructions about sodium restrictions.
Case study #3

65 yr old man with DM 2 calls and is angry about our glucose meter. As I was making breakfast this morning my sugar on my meter was 120, on yours it was 225, what’s the deal? “Your meter is no good. “

What questions would you ask?
Case Study #4

82 yr. old lady collapses at Clinic Visit for syncopal episode 3/8/18. She suffers from diabetic polyneuropathy, stroke x3, COPD. Glucose on arrival to ER @ 1330 27 mg/dL. She did have her usual breakfast. She felt no symptoms of low glucose prior to collapse. Remained confused after bolus D10 by squad. A/O on arrival to ER.

Her A1c on 10/17 was 10.1 (insulin glargine increased to 40 units every am) Appointment 11/30/18 post hospital for COPD. Glucose in house 184. No labs A1c on next visit 3/1/18 was 8.6. She was restarted on metformin 500 mg in am and RPM. Continued on Lantus 40 units, insulin lispro SS2. (2 units insulin lispro (Humalog) for every 50 mg above 150 mg before meals

She is currently taking insulin glargine (Lantus) 25 units with morning meal and metformin 500 mg every am, no GI upset. She “can’t figure out that mealtime stuff” so she not taking SS2.

What are your concerns?

What should her target A1c be?
## Current outcomes

<table>
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<th>Nebraska Medicine Primary Care Remote Patient Monitoring</th>
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<td><strong>Success</strong></td>
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<td>As of 3/9/2018, 182 patients were offered to enroll in the program with referrals being sent by 50 Providers.</td>
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<tr>
<td>We are seeing about a 76% Participation rate with 24% of patients signing onto the program, passively declining enrollment. This is compared to a 50% decline rate compared to the RIISSC grant</td>
</tr>
<tr>
<td><strong>Decrease HgbA1C&gt;9</strong></td>
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<tr>
<td>n=13 70% of patients who had a starting A1C greater than 9 were less than 9 at end of intervention</td>
</tr>
<tr>
<td>For those with only Diabetes, Mean drop of 2.2 points (average A1C from 10.87 to 8.7 after 90 days of monitoring)</td>
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<tr>
<td>For those with complex Diabetes (nurses managing DM and HTN), Mean drop of 1.5 points (Average A1c from 10.86 to 9.36 after 90 days of monitoring)</td>
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<tr>
<td><strong>Hypertension</strong></td>
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<tr>
<td>N=60 72% of patients who were displaying Hypertension at start of program (Systolic &gt;= 140, Diastolic &gt;=90), were not displaying hypertension at end of program</td>
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<tr>
<td>Patients who were displaying Hypertension at start of the program, had an average weight loss of 3.3 lbs</td>
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<tr>
<td><strong>Controlled Patients</strong></td>
</tr>
<tr>
<td>Patients enrolled in the program who were not battling current HTN, had a baseline A1C &lt;9, patients experienced an average weight reduction of 6.05 lbs</td>
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And always remember, Telehealth is a tool for care, not a different type of care.


