Improving Episode Management and Patient Engagement with Telehealth Programs

Aurora at Home
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Aurora Health Care at a Glance

- Private, not-for-profit integrated health care provider
- 31 counties, 90 communities
- 16 hospitals
- 159 clinic sites
- 70 retail pharmacies
- 30,000 caregivers – including 1,600 employed physicians
- Largest homecare organization in Wisconsin
- More than 1.2 million patient encounters
- $4.1 billion in annual revenue
Our mission is to help you live well by bringing the future of health care to you, in the place you call home.

Presentation Objectives

- Discuss remote patient monitoring strategies implemented at Aurora
- Explain the program scope and roles of the home care team
- Demonstrate program outcomes
Telehealth Program

Educated health care providers to recognize program scope and care impact

- Culture change
- Transition program as a self-awareness monitoring tool
- Allows patients to identify trends
- *Not intended* an emergency response device

Predictions

The prevalence of chronic disease is projected to increase; over 157 million Americans are expected to be living with one or more chronic diseases by 2023.

According to Center for Medicaid and Medicare (2012), 1 out of every 5 older adults age 65 and older are admitted to the hospital is readmitted within 30 days.

More than 50% of patients hospitalized for heart failure are readmitted to the hospital within 6 months after their most recent hospital discharge.

COPD is also a highly prevalent condition that is expected to be the third cause of death worldwide by 2020 and is also associated with risk of disability and high use of health care resources.
Management

Disease management programs typically involve a multidisciplinary, integrated approach to care for patients with a chronic illness or multiple chronic conditions.

Telehealth is becoming increasingly utilized within the community setting and is a form of promoting chronic disease self-management.

Interventions such as patient education, health programs, pharmacological strategies and Telehealth can be utilized:
- Detect worsening health status
- Assist in implementing timely interventions

Health care expense

Health care expenditures increase with the number of chronic conditions with nearly 80% of Medicare expenditures for individuals with at least four chronic medical conditions.

Hospital readmissions for patients within 30 days of their last hospital stay are burdening, and costs the healthcare system over 5 billion dollars annually.

Healthcare organizations have a responsibility to attempt to reduce adverse outcomes such as hospital readmission rates and increase patient self-efficacy and quality of life to improve patient care and patient outcomes.
Prevalence of chronic conditions

Older adults with multiple chronic conditions endure functional decline and loss of independence placing them at high-risk for hospitalization.

Often times the burden of accessing healthcare is placed on individual patients.

Telehealth programs are being implemented due to enhancements with patient self-management.

Aurora at Home Telehealth

Combines technology and disease management to enhance and extend case management techniques

Facilitates and improves the health of designated population

Provides care coordination and support for patients with chronic conditions to avoid unnecessary hospitalizations

Self-awareness program with monitoring tools for patients to identify trends while providing transitional care support in the home
Program Enhancements

- Wireless medical devices
- Option to manually enter vital signs
- Multiple choice responses, not limited to yes/no
- Customize-able clinical content and questionnaires
- Daily and weekly disease management surveys
- Risk assessments
- Transmits over analog, VOIP, cellular

Our summary dashboard allows us to quickly identify patients that are out of range with either vitals or survey responses
Multidisciplinary Team approach to care

Registered Nurses, Therapists, Advanced Practice Nursing, Registered Dietitians, Medical Social Workers, Hospital Liaisons, and Leadership

Utilization of workflows to track high-risk patients follow-up
• Interventions may include
  ✓ Follow-up phone calls
  ✓ Tuck-in calls
  ✓ Increased monitoring frequency or RN home visit
  ✓ Frequent collaboration with the RN Case Manager
  ✓ MD collaboration

Self-Management Promotion Model

Enhanced patient education and support through structured teach-back interactions
• Individualized Action Plan
• Medication management
• Disease specific education
• Transition to own equipment

“To be sure that I have explained myself clearly, can you please repeat back to me in your own words how you will take your daily weight”
Education tools

My Telemonitor Program Action Plan

The nurse is a self-management tool to teach your family how to detect early signs. This is an emergency management device. For any symptoms, you or a family member can dial 911. If not, call 1-800-662-2212. You make contact with the hospital with an episode of 8-10 days or 1-2 of the 10 symptoms listed below.

Red
- Weight gain of 5 lbs or more
- Increased cough or sputum
- Persistent fever above 100° F

Yellow
- Weight gain of 2 lbs or more
- Persistent cough
- Increased or more sputum
- Persistent fever above 100° F

Green
- No change in symptoms
- Breathing is normal
- Energy is normal
- No change in appearance

Contact your doctor immediately if your symptoms are worsening or if you are experiencing symptoms associated with severe respiratory disease. If you call the hospital with symptoms, please provide immediate action and when you expect to see improvement.

Daily Vital and Symptom Log

Take your vital signs and check for any symptoms that you have. Keep a record of any symptoms or changes.

If you have any of the symptoms in the yellow section, call your doctor within 24 hours. Do not return to the hospital for a check-up. Do not take any medications or antibiotics. If you call your doctor, please make sure you have:
- Your prescription
- Your medications
- Your appointment

When you call your doctor:
- Tell them everything they need to know.
- Do not call your doctor for unrelated issues.
- Do not call your doctor when you are feeling well.
- Do not call your doctor when you are not having any symptoms.
- Do not call your doctor when you are using any medication. However, if you have any side effects, call your doctor immediately.

Structuring the episode

HOME HEALTH COPD CARE GUIDELINES

Wellness
Asthma Action Plan
- Personal action plan
- Use of medications
- Use of environmental control
- Use of other strategies
- Use of oxygen therapy

Thoracic
- Personal action plan
- Use of medications
- Use of environmental control
- Use of other strategies
- Use of oxygen therapy

Exercise
- Personal action plan
- Use of medications
- Use of environmental control
- Use of other strategies
- Use of oxygen therapy

Medication
- Personal action plan
- Use of medications
- Use of environmental control
- Use of other strategies
- Use of oxygen therapy

Symptoms
- Personal action plan
- Use of medications
- Use of environmental control
- Use of other strategies
- Use of oxygen therapy
Episode Management Plan

- Nursing support when not making a home visit
- Provides structure to care and discharge planning

Risk Stratification with LACE

**LACE Model Screening Tool**
Screening method to identify patients who are at high-risk for hospital readmission within 30 days of their last hospital discharge.

**Length of Stay**
Less than 1 day (0), 1 day(1), 2 days(2), 3 days(3), 4-6 days (4), 7-13 days(5), 14 + days(6)

**Acute Admission**
Inpatient(3), Observation(0)

**Comorbidity**
(0) No history
(1)DM no complications, Cerebrovascular disease, Hx of MI, PVD, PUD
(2)Mild liver disease, DM with end organ damage, CHF, COPD, Cancer, Leukemia, Lymphoma, Tumor, Mod-severe renal disease
(3)Dementia or connective tissue disorder
(4)Mod-severe liver disease or HIV
(6)Metastatic cancer

**ED utilization**
visits (0), 1 visit (1), 2 visits (2), 3 visits (3), 4 or more visits (4)
Validated Screening Tools

- **Patient Health Questionnaire**
  Assesses for Depression

- **Orientation Memory Concentration Test**
  Assesses for Cognitive Impairment

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### Depression Questionnaire (PHQ-9)

<table>
<thead>
<tr>
<th>Item</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>2. Feeling down, depressed or hopeless</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>3. Trouble falling asleep, staying asleep, or sleeping too much</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>5. Feeling bad about yourself or that you're a failure or have failed something important to you</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>6. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>7. Moving or speaking so slowly that other people could have noticed. Or just the opposite—being so restless or agitated that you have been noticed</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
<tr>
<td>8. Thoughts of dying or being dead, or suicide</td>
<td>0-1 = None; 2-6 = Mild; 7-9 = Moderate; 10-14 = Severe</td>
</tr>
</tbody>
</table>

**PHQ-9 Total**


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### Orientation Memory Concentration Test (OMCT; Katzman et al., 1983)

<table>
<thead>
<tr>
<th>Item</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What year is it now?</td>
<td>3 = Correct; 4 = Incorrect</td>
</tr>
<tr>
<td>2. What month is it now?</td>
<td>0 = Correct; 3 = Incorrect</td>
</tr>
<tr>
<td>3. Without looking at your watch, tell me what time it is</td>
<td>0 = Correct; 3 = Incorrect</td>
</tr>
<tr>
<td>4. Count backwards 20 to 1.</td>
<td>0 = Correct; 2 = 1 error; 4 = 2 or more errors</td>
</tr>
<tr>
<td>5. Say the months in reverse order. Start with the last month of the year.</td>
<td>0 = Correct; 2 = 1 error; 4 = 2 or more errors</td>
</tr>
<tr>
<td>6. Repeat the name and address that you just remembered.</td>
<td>0 = Correct; 2 = 1 error; 4 = 2 or more errors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>Brown</td>
<td>42 Main St, Chicago</td>
</tr>
</tbody>
</table>

**OMCT Score**

**Depression Symptom**

- Low: No symptom; normal mental status, 7-15 = Possible moderate cognitive impairment, greater than or equal to 16 = severe cognitive impairment.

**OMCT Score Interpretation**

- Scores less than or equal to 8 = normal mental status; 7-15 = possible moderate cognitive impairment; greater than or equal to 16 = severe cognitive impairment.


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### Patient Activation Measure

Extent in which individuals are able to manage their own healthcare and encompasses a range of elements important in self-management that extend beyond any single health behavior

- Older adults with chronic disease may lack the ability and willingness to manage aspects of their health and health care.

- This lack of activation by the patient is associated with a higher use of acute care services and rehospitalization shortly after discharge.

- **PAM 13-Item Questionnaire**
Patient Activation Model

Strategy review

Developed episode management plan
- Structured sequential patient education
- Visit set for in-home RN and Telehealth RN

Identified workflow needs based on risk stratification
- LACE High-Risk Screening Tool

Integrated validated screening tools
- Patient Activation Measure
- Orientation Memory Concentration Test
- Patient Health Questionnaire (PHQ-9)
Scope and Roles

*The patient and their home health team*

Self-management goals

Patients with chronic illness require a balance between medical care, patient participation, and cooperation with self-management abilities.
Aurora at Home

Telehealth is considered to be a vital component of transitional care coordination for patients.

Telehealth can coordinate and support the care of vulnerable patient populations with chronic conditions, and avoid unnecessary hospitalizations.

Inclusion Criteria

- Chronic Condition (CHF, COPD, DM, MI, HTN, Depression etc.)
- At Risk for Falls
- Age 80 or older
- 2 or more Hospitalizations/ED visits in the past 6 mo
- Taking 5 or more medications
- At Risk for re-hospitalization
Exclusion Criteria

Physically or cognitively unable to use the equipment safely and has no caregiver available.

Residence not conducive/safe for monitoring (i.e. power, extreme clutter/infestation).

Patients with low functional vision, unless there is a competent caregiver.

Patient unwilling to agree to terms as stated on installation.

eReferrals

[Image of eReferrals screen]

Patient Name: John Smith
MRN: 224567
Patient address: 42 Market St, Milwaukee, WI 53245
Phone Number: 262-885-1324
Primary Physician: Dr. James Werner

Referring Clinician Team: North 12
Primary Diagnosis: COPD
Secondary Diagnosis of Depression? Yes
Equipment: Full Health Kit
Settings: Standard Settings
Cuff Size: Medium: 9.4” - 14.2” (24 - 36 cm)

Additional communication or considerations for Telemonitor Team: Patient needs E-device
Clinical Collaboration

Admitted to Home Health Care or Home Palliative Services
- Internal or External Referral

Admitting RN sends referral to Telemonitor Program
- RN send referral Smart Text documentation template to our Team Assistant
- Risk Stratification Assessment

Welcome Call placed to patient

Trapollo notified of new referral
- Connect with patient and ship out equipment via UPS

Monitor is installed via remote support

Telemonitor RN collaborates with patient, MD, and Field RN

Monitor is sent back to Trapollo via UPS upon program completion
Virtual connections

Disease specific surveys individualized to the patient’s TeleStation

• Assists with early identification of warning signs
• Guides intervention/notification of subtle changes
• Promotes self-management and monitoring their condition

Aurora at Home STEP Pilot Study

Determine whether a telehealth program with a sequential education plan compared to standard telehealth positively impacts patient self-management through patient activation, patient satisfaction, and decreases 30 day readmission.

• There is support for use of telehealth in the home health setting to assist in promoting increased patient knowledge and adherence, and preventing rehospitalizations.

• The use of telemonitoring along with remote patient education provided by a registered nurse has been studied with varied results.

• There is a need for additional research to identify strategies to improve patient self-management that may impact clinical outcomes.
Episode Management Experimental Pilot

The Aurora at Home Sequential Telemonitor Education Pilot (STEP) study examined if there was a difference in patient activation, patient satisfaction and 30-day readmission rates between patients with CHF or COPD who received standard telemonitor home health care versus telemonitoring with a sequential education plan.

A secondary analysis was also conducted using data from the Sequential Telemonitor Education Pilot study to examine the relationship between older adults’ depression and their level of patient activation.

Outcomes Measures
- Patient Activation Measure
- Patient Experience
- 30-Day Hospital Readmission rates
- Reduction of Skilled Nursing Home Visits

Outcomes

<table>
<thead>
<tr>
<th>Clinical</th>
<th>Operations</th>
<th>Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 30 day readmits</td>
<td>• Growth</td>
<td>• Activation</td>
</tr>
<tr>
<td>• Utilization</td>
<td>• Visits</td>
<td>• Participation</td>
</tr>
</tbody>
</table>
# Statistics

<table>
<thead>
<tr>
<th>January - September 2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Enrollment*</td>
<td>1224</td>
</tr>
<tr>
<td>New Participants</td>
<td>901</td>
</tr>
<tr>
<td>Average Days Monitored</td>
<td>36.5</td>
</tr>
<tr>
<td>Onsite Appointments</td>
<td>11</td>
</tr>
<tr>
<td>Removals</td>
<td>807</td>
</tr>
</tbody>
</table>

## Time from enrollment to on service

<table>
<thead>
<tr>
<th>December 14 – February 15</th>
<th>March 15 – May 15</th>
<th>June 15 – August 15*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longest: 32 Days</td>
<td>Longest: 24 Days</td>
<td>Longest: 15 Days</td>
</tr>
<tr>
<td>Shortest: 3 Days</td>
<td>Shortest: 3 Days</td>
<td>Shortest: 1 Day</td>
</tr>
<tr>
<td>Average: 9 Days</td>
<td>Average: 6 Days</td>
<td>Average: 5 Days</td>
</tr>
</tbody>
</table>
Inventory turns

Monitored Census in 2015
Lessons learned

- Clinical leadership, oversight and support
- Transitions are overwhelming for patients, plan the timing of equipment arrival
- Front-load clinical visits and then taper back.
- Use Plain Language (*Plug-in and turn on versus Install*)
- Avoid survey fatigue
- Partnerships

Thank you!
References


