Initiation of pharmacy virtual visits for Heart Failure medication education follow-up post discharge

May 2, 2017
Objectives

• Describe Pharmacy Telehealth / virtual visits
• Explain patient population selection
• Show workflow process
• Summarize the current state of program
Heart Failure Facts

- Chronic disease described by frequent exacerbations, progression of illness, often resulting in hospitalization and death
  - Leading cause of hospitalization for Americans over age 65
  - Upwards of 50% of HF patients readmitted within 6 months of discharge
  - Reduced payment for patients readmitted within 30 days of hospitalization
• Incentivize payer models to promote higher-value care
• Encourage greater teamwork and coordination of providers
• Utilization of information technology to improve care
Ambulatory and Transitions of Care Pharmacy Services – National Trends

- Consistent increases in services offered
  - Hospitals with pharmacists in ambulatory setting
  - Growth in inpatient TOC services
  - Medication reconciliation and discharge counseling
  - Discharge prescription services
- 11.8% in 2012 to 21.5% in 2014
Numerous risk factors, broken down into pre-hospital, post-discharge, and transitioning

- 30-40% of medication reconciliation errors associated with admission med orders
  - Pharmacist interventions and education shown to reduce errors
- 20-30% of all new prescriptions upon discharge never filled from community pharmacy
- Medication nonadherence and ADRs post-hospital discharge associated with increased readmission rate

Cleveland Clinic Vision

• Improve access through distance health
  – 2% of visits in 2017 per Institute
  – Strategic goal for Pharmacy Institute
Goals of HF virtual visits

- Improve clinical outcomes and access to care
  - Reduce medication related errors
  - Improve patient understanding and adherence
  - Reduce complications and repeat hospitalizations
Current Pharmacy Initiatives

- Expanding format across enterprise
- Enactment of HB 188 increases scope of practice for pharmacists
  - Collaborative practice
  - HF Dosing titration clinic
  - Ambulatory pharmacy drug and disease state management
  - HF coordination of care visits
HVI HF Distance Health Team

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- Brittany Florczykowski, PharmD RPh BCPS-AQ Cardiology
- Dan Lewis, PharmD RPh BCPS
- Kim Bischel-Dunn, RN
Current Process

• Inpatient medication education
  – Individual
  – Class based
• Heart Failure checklist (Hard Stop)
• Lack of post discharge pharmacy follow-up
• Transition of care
  – Bedside delivery
  – Inconsistent medication reconciliation
• RN Clinical coordinator follow-up phone call
Current Process

- HF Hard Stop checklist criteria
  - Current diagnosis of HF
  - Admission to HF team
  - RN disease state education inpatient
  - Pharmacy driven medication education inpatient
  - Nutrition therapy dietary education inpatient
Current follow-up

- RN clinical coordinator
  - Checks on patient symptoms
    - SOB
    - Edema etc
  - Reminders for follow-up appointments
  - Goes over medications
    - Time consuming for Clinical Coordinator
    - Opportunity for Pharmacists
Current Process

1. Admission with Diagnosis of HF
2. Heart Failure hard stop list
3. Patient receives medication counseling
4. Patient discharged
5. Follow up call from RN clinical coordinator
6. Patient has in-person 7day follow up appointment
Current Studies

• Telehealth by an interprofessional team with patients in CKD n=600
  • Interprofessional team
    – Included Physicians, Pharmacy Specialists and RN’s
    – Allied Health professionals
  – Utilization of touch screen computer for video visits
  – No difference in primary outcome
  – Feasible care delivery system

Ishani et al, Am J Kidney Dis. 2016;68 (1) 41-49
Current Studies

- Effect of Home BP Telemonitoring and Pharmacy Management on Blood Pressure n=450
  - Pharmacist case management
  - Pharmacists provided education, individualized goals on initial in person visit
  - Follow-up done via telephone
    - Included further medication education
    - Included medication regimen titration
  - After 12 months patients continued usual care with physician
  - Primary outcomes met
    - Significant number of patients with controlled Hypertension vs usual care
    - Significant reduction in blood pressure

Margolis et al. JAMA 2013;310 (1) 46-56
### Current Studies

#### Table 2. Composite and Blood Pressure (BP) Control

<table>
<thead>
<tr>
<th></th>
<th>Telemonitoring Intervention</th>
<th>Usual Care</th>
<th>Differential Change From Baseline, % (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
</tr>
<tr>
<td>Composite BP control</td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
</tr>
<tr>
<td>At 6 and 12 mo</td>
<td>113</td>
<td>57.2 (44.8-68.7)</td>
<td>58</td>
<td>30.0 (23.2-37.8)</td>
</tr>
<tr>
<td>At 6, 12, and 18 mo</td>
<td>96</td>
<td>50.9 (36.9-64.8)</td>
<td>42</td>
<td>21.3 (14.4-30.4)</td>
</tr>
<tr>
<td>BP control</td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
<td>No. of Patients</td>
<td>% (95% CI)</td>
</tr>
<tr>
<td>At 6 mo</td>
<td>148</td>
<td>71.8 (65.6-77.3)</td>
<td>89</td>
<td>45.2 (39.2-51.3)</td>
</tr>
<tr>
<td>At 12 mo</td>
<td>141</td>
<td>71.2 (62.0-78.9)</td>
<td>102</td>
<td>52.8 (45.4-60.2)</td>
</tr>
<tr>
<td>At 18 mo</td>
<td>135</td>
<td>71.8 (65.0-77.8)</td>
<td>104</td>
<td>57.1 (51.5-62.6)</td>
</tr>
</tbody>
</table>

*Study group difference for composite BP control and at each individual time point.

#### Table 3. Blood Pressure (BP) Reduction From Baseline

<table>
<thead>
<tr>
<th></th>
<th>Telemonitoring Intervention</th>
<th>Usual Care</th>
<th>Differential Change From Baseline, % (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reduction From Baseline, Mean (95% CI)</td>
<td>Reduction From Baseline, Mean (95% CI)</td>
<td>Differential Change From Baseline, Mean (95% CI)</td>
<td></td>
</tr>
<tr>
<td>Systolic BP, mm Hg</td>
<td>Mean (95% CI)</td>
<td>Reduction From Baseline, Mean (95% CI)</td>
<td>Mean (95% CI)</td>
<td>Reduction From Baseline, Mean (95% CI)</td>
</tr>
<tr>
<td>At baseline</td>
<td>148.2 (146.3 to 150.0)</td>
<td>-21.5 (-23.9 to -19.1)</td>
<td>47.7 (145.8 to 149.5)</td>
<td>-10.8 (-13.3 to -8.3)</td>
</tr>
<tr>
<td>At 6 mo</td>
<td>126.7 (124.4 to 129.0)</td>
<td>-22.5 (-25.1 to -19.9)</td>
<td>34.8 (132.5 to 137.2)</td>
<td>-12.9 (-15.5 to -10.2)</td>
</tr>
<tr>
<td>At 12 mo</td>
<td>125.7 (123.4 to 128.0)</td>
<td>-21.3 (-24.2 to -18.4)</td>
<td>33.0 (130.4 to 135.5)</td>
<td>-14.7 (-17.6 to -11.8)</td>
</tr>
<tr>
<td>At 18 mo</td>
<td>126.9 (124.3 to 129.4)</td>
<td>-21.3 (-24.2 to -18.4)</td>
<td>33.0 (130.4 to 135.5)</td>
<td>-14.7 (-17.6 to -11.8)</td>
</tr>
<tr>
<td>Diastolic BP, mm Hg</td>
<td>Mean (95% CI)</td>
<td>Reduction From Baseline, Mean (95% CI)</td>
<td>Mean (95% CI)</td>
<td>Reduction From Baseline, Mean (95% CI)</td>
</tr>
<tr>
<td>At baseline</td>
<td>84.4 (82.3 to 86.6)</td>
<td>-9.4 (-11.1 to -7.6)</td>
<td>85.1 (82.9 to 87.3)</td>
<td>-3.4 (-5.2 to -1.5)</td>
</tr>
<tr>
<td>At 6 mo</td>
<td>75.0 (72.9 to 77.2)</td>
<td>-9.3 (-11.0 to -7.7)</td>
<td>81.7 (79.5 to 84.0)</td>
<td>-4.3 (-5.9 to -2.7)</td>
</tr>
<tr>
<td>At 12 mo</td>
<td>75.1 (72.8 to 77.4)</td>
<td>-9.3 (-11.7 to -7.0)</td>
<td>80.8 (78.5 to 83.2)</td>
<td>-4.3 (-5.9 to -2.7)</td>
</tr>
<tr>
<td>At 18 mo</td>
<td>75.1 (73.0 to 77.2)</td>
<td>-9.3 (-11.7 to -7.0)</td>
<td>78.7 (76.6 to 80.9)</td>
<td>-6.4 (-8.7 to -3.9)</td>
</tr>
</tbody>
</table>

*Calculated using time x study group interaction term, indicating differential reduction from baseline by study group.
Current Studies

- **BEAT-HF study n=1437**
  - RN driven health coaching telephone calls
  - Telemonitoring
    - Blood Pressure
    - Heart Rate
    - Symptoms
  - Data signaled potential difference 30 day readmissions
  - Large number of patients were missing guideline recommended medications at discharge
- **Opportunity for Pharmacist intervention**

Ong et al, JAMA 2016;176 (3) 310-318
## Current Studies

### Table 3. Primary and Secondary Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (N = 1437)</th>
<th>Intervention (n = 715)</th>
<th>Usual Care (n = 722)</th>
<th>P Value</th>
<th>Adjusted P Value&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Readmission, No. (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 d</td>
<td>318 (22.1)</td>
<td>162 (22.7)</td>
<td>156 (21.6)</td>
<td>.63</td>
<td>.63</td>
</tr>
<tr>
<td>180 d</td>
<td>718 (50.0)</td>
<td>363 (50.8)</td>
<td>355 (49.2)</td>
<td>.54</td>
<td>.39</td>
</tr>
<tr>
<td><strong>Mortality, No. (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 d</td>
<td>63 (4.4)</td>
<td>24 (3.4)</td>
<td>39 (5.4)</td>
<td>.06</td>
<td>.04</td>
</tr>
<tr>
<td>180 d</td>
<td>214 (14.9)</td>
<td>100 (14.0)</td>
<td>114 (15.8)</td>
<td>.34</td>
<td>.30</td>
</tr>
<tr>
<td><strong>Readmission or Mortality, No. (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 d</td>
<td>359 (25.0)</td>
<td>173 (24.2)</td>
<td>186 (25.8)</td>
<td>.49</td>
<td>.44</td>
</tr>
<tr>
<td>180 d</td>
<td>792 (55.1)</td>
<td>393 (55.0)</td>
<td>399 (55.3)</td>
<td>.91</td>
<td>.93</td>
</tr>
<tr>
<td><strong>Quality-of-Life Score, No. (Mean)&lt;sup&gt;b&lt;/sup&gt;</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 d</td>
<td>988 (31.23)</td>
<td>485 (30.28)</td>
<td>503 (32.21)</td>
<td>.25</td>
<td>.34</td>
</tr>
<tr>
<td>180 d</td>
<td>796 (30.49)</td>
<td>383 (28.50)</td>
<td>413 (32.63)</td>
<td>.02</td>
<td>.02</td>
</tr>
</tbody>
</table>
Clinical Transformation

- Cleveland Clinic Express Care® Online
- EPIC Scheduling
Patient Selection

- Heart Failure Diagnosis
- Readmission risk stratification tool
  - Target patients with >30% risk of readmission
- Initial patients eligible for only phone call
- Additional patients screened for use of distance health technology
  - Readiness survey
  - Patient/Family trained on how to use Express Care® online
  - Patients scheduled for distance health visit
## Metrics to be collected

<table>
<thead>
<tr>
<th>Metric Name</th>
<th>Calculation/How Analyzed</th>
<th>Source</th>
</tr>
</thead>
</table>
| 1. Count of Visits                       | Total number of patient visits documented  
Number of “No Shows”/total number of visits | Epic Report  
Epic Report                     |
| 1. Medication Issues/Errors identified   | A. Chart review, follow up notes                                                      | A. EPIC Smart data element      |
| 1. Medication Compliance                 | A. Prescriptions filled after/before discharge                                           | A. SCC/pharmacist report        |
| 1. Average Visit Time                    | Total of call time/number of calls                                                     | Smart Data Element- EPIC         |
| 1. Inclusion/Exclusion                   | Number of Patients with scheduled counseling/number of patients screened (% capture rate)  
Breakdown of exclusion reasoning (ex. Denied vs. Did not have technology, etc.) as %’s of total | Patient Eligibility Screening Documents  
Patient Eligibility Screening Documents |
| 1. Patient Satisfaction                  | A. Review of American Well comments and metrics                                        | A. ExpressCare Online           |
| 1. Number of Discrepancies found in d/c summary | Review of EPIC d/c summary and comparison to notes and Prior to admission medications | A. Pharmacist and SCC           |
| 1. Number of patients with bedside delivery | A. E-script and Outpatient Prescription filling data                                | A. EPIC                         |
| 1. HF readmission at 30 days             | A. Chart Review, review of EPIC data                                                   | A. Manual review/EPIC report     |
Planned Process

Patient identified for distance health visit

Patient ready for discharge

Patient offered distance health visit

Disagree

Patient receives inpatient medication education

Care coordinator call

Patient discharged

Patient has in person follow up appointment
Planned Process

- Patient identified for distance health visit
- Patient ready for discharge
- Patient offered distance health visit
  - Agree
    - Appointment scheduled in EPIC
    - Patient discharged
    - Patient has in person follow up appointment
    - Patient has Combined virtual visit
Experience to Date

• Started April 22, 2017
• 3 Patients have had Pharmacy-Nursing care coordination phone calls
• 20-45 minutes length of visit
• 1 Patient taking incorrect doses at discharge
• 1 patient had not filled post discharge medications
• 1 Patient receiving assistance with expensive medication
Future Directions

• Advanced function decentralized technicians
  – ID patients for Virtual Visits
  – Does initial evaluation for patients eligibility for virtual visits
  – Sign patients up for CC ExpressCare® online

• Incorporation into a larger institute initiative
Special Thank You’s

• Holley Boren
• Bethany Frampton
• Brad Milius
• Allyce Butara
• Kristin Homoki
• Amy Magee
Questions?
Cleveland Clinic
Every life deserves world class care.