IOBS Triage System Overview
Spring 2016
Barbara McAneny MD, CEO

www.innovativeobs.com
Assumptions: Episode Definition and Measures

• Episode of Care:
  – Start: First visit to medical oncologist on or after first qualifying cancer diagnosis
  – Length: 6 months

• Time periods:
  – Patients assigned to time periods based on diagnosis date
  – Pre-COME HOME: July 2011 – August 2012
  – Post-COME HOME: October 2012 – March 2013 (most recent available data)
  – Green dashed line on each graph shows start of COME HOME Program

• Cost/Utilization Measures
  – % of patients with ED Visit during 6 month episode of care
  – % of patients with IP Admission during 6 month episode of care
  – Average number of IP days per patient per 6 month episode of care
  – 6 month total cost of care
COME HOME Project Partners

• Innovative Oncology Business Solutions (IOBS) – managing organization formed for the purposes of administering project
• Seven community oncology practices
  – New Mexico Cancer Center
  – Center for Cancer & Blood Disorders (Ft. Worth)
  – Dayton Physician Network (OH)
  – Space Coast Oncology
  – Maine Center for Cancer Medicine
  – NW Georgia Oncology Centers
  – Austin Oncology Group
• NantHealth – HIT company creating customized quality & pathway performance dashboards using claims data and integrated EHRs
• KEW Group – integration of genetic markers into diagnostic and therapeutic pathways
• UTHSC – evaluation, cost, quality measurement expertise; using claims data for rapid-cycle feedback of cost/utilization performance
COME HOME Vision

Patient Experience:

Triage System: Can speak to someone with access to their health records 24/7. Encouraged to call

Seen same day at their oncology practice when they are experiencing symptoms.

Fewer ED Visits & Fewer days in the hospital

Reduced out of pocket expenses, improved quality of life, greater peace of mind.

Practice Experience:

Triage System: Aggressive, Standardized Symptom Management

Increased Same Day Appointments (Revenue)

Decreased ER Visits

(Shared) Savings
IOBS Triage System

• 38 Symptom Specific Pathways
  – E.g. pain, nausea & vomiting, fatigue, cough
  – Many also include follow ups for patients that can be managed at home
  – Nurses working to top of license
  – Consistent, systematic triage of patient symptoms

• Real time dashboard visible to all triage staff

• Standard order sets for defined patient groups
  – E.g. pts on chemo with fever are scheduled for same day appointments and have chemistry and CBC ordered without needing physician sign-off for every patient.
What contributes to total cost of care?

• Chemotherapy and other treatments
  – Medical Oncologists have little control
  – Pass through costs

• ED Visits and Inpatient Admissions
  – North Carolina 2008 data¹: 37,760 ED Visits
    • 63.2% resulted in admissions
    • Mostly for symptom control
      – GI, Pain, Neurological Symptoms, Malaise, Injury Fever
  – COME HOME Data: 32 - 53% of ED Visits result in admissions

• Medical homes have been shown to reduce inpatient admissions by 15-50%

• COME HOME Practices saw a 9.5% reduction in IP admissions in the first year of the program (from 38.28% to 34.63%)

¹J Clin Onco 29:2683-2688
COME HOME results: avoided ED visits and IP admissions

• 1,223 same day visits (SDAs) per month
  – Of those, 245 (20%) would have gone to the ED
  – Of those, 152 (62.3%) would have been admitted

• Average encounter costs (CH data):
  – SDA: $108
  – ED encounter: $1,034
  – IP Admission: $9,878

• Total monthly savings (estimate): $1.6M
  – Approximately $175K per practice per month
Distribution of infrastructure costs for cancer care

**Community Oncology Practice**
- $10,000/month supports:
  - 1 triage nurse plus all associated infrastructure
    - Physical Space
    - Health IT
    - Support Staff
  - Triage support for 250 patients on active chemo OR 2,000 total active patients

**Hospital**
- $10,000/month supports
  - ~8 ED Visits OR
  - 1 hospitalization
There are two types of users who operate the Triage System.

- **First Responders** (Phone Operators)
- **Triage Nurses**
The user interface will be changing in the near future.

The patient demographics and basic clinical information.
### The “My Patient’s” Dashboard

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Age</th>
<th>MRN</th>
<th>Last Consultation</th>
<th>Current Issue</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnathan D. Webb</td>
<td>65</td>
<td>2902571</td>
<td>01/01/1950</td>
<td>Cancer Care Program; Recent hospital discharge</td>
<td>CALL BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nina Phillipson, RN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Please call John back between 10am-1pm today on his cell phone about his nausea</td>
<td>13:00 Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due 13:00 Today Original Contact 10:32 Today Last Update 2 hrs ago</td>
<td></td>
</tr>
<tr>
<td>Tyler A. Pullman</td>
<td>49</td>
<td>38209091</td>
<td>02/07/1966</td>
<td>HTN Home Monitoring Program</td>
<td>CALL BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Darlene Mathers, RN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Check in on lab results</td>
<td>13:00 Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due 13:00 Today Original Contact 07:37 Today</td>
<td></td>
</tr>
<tr>
<td>Ellen R. Marshall</td>
<td>35</td>
<td>2902571</td>
<td>01/01/1950</td>
<td>Recent hospital discharge; Combative attitude</td>
<td>CALL BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nina Phillipson, RN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>vomiting, headaches, dizziness</td>
<td>13:00 Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due 13:00 Today Original Contact 10:32 Today Last Update 2 hrs ago</td>
<td></td>
</tr>
<tr>
<td>Boris D. Eckelberg</td>
<td>49</td>
<td>38209091</td>
<td>02/07/1966</td>
<td>HTN Home Monitoring Program</td>
<td>OUTREACH NEEDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nina Phillipson, RN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blood pressure trending high for 5 days. Latest reading 168/99 (goal 150/90)</td>
<td>13:00 Today</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Due 13:00 Today Original Alert 07:37 Today</td>
<td></td>
</tr>
</tbody>
</table>
Scenario: The First Responder receives a call from Mr. Webb. He has not been feeling well since his last chemotherapy treatment.

The First Responder begins a search on the system to begin the triage process.
The General Assessment

1. Thank you for calling Lanningham Cancer Center, this is Shelly, how can I help you today?
   Type the reason for the call here....
   Call Back Number*  Name of Caller
   - 555-543-5010 (mobile)
   - 555-101-3911 (home)
   - Other

2. Are you calling because you are sick or any variation of not feeling well?*
   - YES  NO

3. Have you...
   - recently travelled to or from West Africa, specifically Congo, Guinea, Liberia, Nigeria, Senegal or Sierra Leone?
   - been in contact with anyone who has recently been to these areas?
   - any reason to believe you could have been exposed to or contracted Ebola?*
   - YES  NO

4. Do any of the following apply?
   - Did you lose consciousness at any time prior to calling us?
   - Are you having any chest pain?
   - Are you having any trouble breathing?
   - Are you bleeding?
   - None of the above

   Document any necessary information, and schedule call back.

   Save
The Patient Assessment

**BASIC NAUSEA ASSESSMENT**

1. Has your nausea lasted longer than 24 hours?*
   - YES
   - NO

2. Have you been vomiting?*
   - YES
   - NO

3. Are you taking any medications for nausea?*
   Records indicate the patient has no current nausea medications
   - YES
   - NO

   3.a.1 What are you taking? Are you taking it as prescribed?
   Type medications here....

Document any necessary information and triage to physician

[Save]
In the event the triage nurse is directed to schedule a follow-up call the Triage System has the functionality to schedule that call directly into the “Follow Up” dashboard.

**Add New Encounter**
- Start Date: 06/11/2015
- Encounter Reason/Description: Call patient back about low-grade fever.
- Communication Medium: Please Select
- Activities to include:
  - Follow Up: Constipation Assessment
  - Follow Up: Diarrhea
  - Follow Up: Dizzy, V
  - Follow Up: Fall Assessment
  - Follow Up: Fever and Chills Assessment
  - Follow Up: Nausea and Vomiting Assessment
  - Follow Up: Rash Assessment

**Follow Up Pathway:** Fever and Chills Assessment

**Follow Ups**
- Date: 06/11/2015 - 12:00 AM
- Patient: Patient, Angela
- Encounter Type: Follow up
- Contact: Triage Nurse
- Status: Scheduled
- Reason: Call patient back about low-grade fever.
Summary of Findings

• NMCC Post-COME HOME compared with NMCC in the Pre-COME HOME period:
  – 35.9% drop in % of patients with ED Visits
  – 43.1% drop in % of patients with IP Admissions
  – 23.8% drop in inpatient days
  – $4,784.08 (22.4%) drop in six month total cost of care

• NMCC Post-COME HOME compared with contemporaneous data from the Albuquerque MSA:
  – COME HOME patients are 50.2% as likely to have an ED Visit
  – COME HOME patients are 43.6% as likely to have an IP Admission
  – COME HOME patients spend 2.71 fewer days in the hospital
  – COME HOME patients cost Medicare $2,149.28 (11.5%) less

Disclaimer: The research presented here was conducted by the awardee. Findings might or might not be consistent with or confirmed by the independent evaluation contractor.