Implementing PROMIS for Routine Screening in Ambulatory Cancer Care

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OBJECTIVES

Symptom Screening in Oncology
- background research
- need & importance
- clinical mandates → standard care

Lurie Screening Initiative
- incorporated PROMIS measures into EHR for routine screening in outpatient care for adults with cancer

Next Steps
- implementation system-wide
- evaluating implementation + impact on patient- & system-outcomes

Focus on promoting & evaluating quality cancer care
Why Screen for Symptoms in Oncology?

- >15 million cancer survivors in the U.S. → > 20 million by 2026
- 5-yr survival rate close to 70% → chronic illness that requires symptom management

- Patient symptoms are often under-recognized → under-treated
  - limited time for discussion in medical visits
  - patients not wanting to “distract” oncologists or have treatment decreased

- Common symptoms are best captured by patient-report:
  - anxiety, depression, pain, fatigue, physical dysfunction

- Routine screening identifies symptoms that can go under-reported by pts to providers
  - Screening alone is not enough

- Timely intervention → better outcomes
  - RCT: Screening + triage VS Minimal Screening → ↓ Emotional distress @ 3mo

Carlson et al. JCO 2010
Leading organizations have promoted PROs & symptom screening in quality care

- **IOM**'s recommendations for quality patient-centered care:
  - ensuring patients' physical comfort
  - providing patients w/ emotional support

- **IOM** recommended that PRO data be collected in real time as part of routine health care delivery → improving the health care system & patient outcomes

- **NCCN & ASCO** have recommended routine distress screening in cancer care

- (2015) **ACoS COC** new standard of care: all cancer patients must be screened for emotional distress at accredited institutions (treat > 70% pts)
What Has it Been Like to Implement These New Guidelines?

IT’S NOT ABOUT IDEAS
IT’S ABOUT MAKING IDEAS HAPPEN!
Routine Distress Screening as An Example of Widespread Implementation

• **Readiness survey** of CoC- accredited institutions’ confidence in being able to implement Standard 3.2 (1 yr after guideline issued)
  - 58% completely confident
  - 35% somewhat confident

• **Survey of NCCN institutions**
  - 70% conducting routine distress screening (50% all outpatients, 50% certain subgroups)

• **Most common screening tool** = NCCN Distress Thermometer
  - Single item: rate distress in the past week (0-10)
  - Sensitivity & specificity detecting depression = not optimal
  - Checklist of common concerns:
    - practical, family, emotional, spiritual & physical problems

✓ Significant room for improvement upon status quo
Trying to Make Improvements in Busy Health Care Settings

No thanks!

We are too busy
# Collaboration with Health Care System Toward Feasible Solutions

<table>
<thead>
<tr>
<th>Decisions - ISQOL User Guide for PROs in Clinical Practice</th>
<th>Lurie Screening Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Identify goals</td>
<td>Meet CoC standard using advanced measurement</td>
</tr>
<tr>
<td>2) Select patients, setting &amp; timing</td>
<td>Medical Oncology outpatients; prior to MD visit</td>
</tr>
<tr>
<td>3) Determine which PROs</td>
<td>PROMIS CATs</td>
</tr>
<tr>
<td>4) Choose administration mode</td>
<td>Web-based to allow for at-home completion</td>
</tr>
<tr>
<td>5) Design processes for reporting results</td>
<td>Responses, scores &amp; severity levels → EHR</td>
</tr>
<tr>
<td>6) Identify aids for score interpretation</td>
<td>Severity levels formatted like lab results</td>
</tr>
<tr>
<td>7) Develop strategies for responding to identified issues</td>
<td>Scores above thresholds triaged to provider pools</td>
</tr>
<tr>
<td>8) Evaluate impact of PRO intervention on practice</td>
<td>Analysis of relationship to health care utilization &amp; satisfaction</td>
</tr>
</tbody>
</table>

Snyder et al., Qual Life Res. 2012
The Lurie Screening Initiative

• GOALS:
  - meet CoC emotional distress (anxiety & depression) screening guideline
  - BUT ALSO
    - assess other priority symptoms (fatigue, pain physical function)
    - apply state-of-the-science measurement & tools
    - feasibly integrate the process into existing workflows

• Large scale undertaking: > 10,000 patients treated yearly
  - How can we use HIT to facilitate universal distress screening?
Lurie Cancer Center Screening Initiative
(Central Region of Northwestern Medicine)

*Bringing more advanced measurement science to clinical practice.*

**PROMIS Computer Adaptive Tests (CATs):**

- Depression
- Anxiety
- Pain
- Fatigue
- Physical Function

**Discipline-Specific Measures:**

- Social work needs
- Informational needs
- Nutritional needs

**Integration in EHR (Epic)** so results can inform clinical care delivery in real time

→ Clinician notification & triage
Measures of priority HRQoL domains in cancer

- Compare across chronic conditions & general population
- Clinically valid, w/ severity thresholds
- Allows computer administration & real-time scoring
- Based in IRT → CATs
  - Precise measurement
  - Brief (4-12 items)
MyChart – Epic pt portal (1/3 actively use)
At home prior to visit
~ 40 items (8-10 min.)

MyChart acces PLUS
Epic hyperlink – non-MyChart users
In clinic, when roomed by an MA
< 30 items (6-7 min.) – not slow clinic flow
Your medical team at the Robert H. Lurie Comprehensive Cancer Center of Northwestern University is interested in your well-being. Please take a few minutes to answer the following questions. Your answers to these questions will help us know how to best support you during your care at our center. We encourage you to answer all of the questions, however you can return at a later time to finish if needed.

- Medical & Gynecological Oncology outpts received MyChart message 72 hours prior to MD visit
- Message web-link connects pts to web-based administration
- Assessment results immediately populate Epic (HL7 format)
Patients made aware that results are visible in Epic by their providers may not be reviewed for 72 hrs & what to do in case of emergency

Thank you for completing this assessment. Our Supportive Oncology Program at the Lurie Cancer Center provides resources to patients and their families during all stages of treatment and survivorship. Our team includes social workers, clinical psychologists, psychiatry, registered dietitians, medical librarians and additional health care professionals to address emotional, practical, financial and other concerns.

For information on our Supportive Oncology program, please visit our web-site at www.cancer.northwestern.edu/support or by calling 312-695-0990.

Please visit our online Health Resources Library. It contains helpful educational materials about cancer and related topics.

Health Resources Library
<table>
<thead>
<tr>
<th>Medical Needs</th>
<th>Department / Pool</th>
<th>Action Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain, Fatigue, Physical function</td>
<td>oncologist / RN pool</td>
<td>sent Epic inbox message&lt;br&gt;call / MyChart message pt OR note issue @ next visit</td>
</tr>
<tr>
<td>Depression, Anxiety</td>
<td>Social work pool</td>
<td>sent Epic inbox message&lt;br&gt;SW call / MyChart message pt &amp; maybe referral to Psychology&lt;br&gt;oncologist / RN pool copied</td>
</tr>
<tr>
<td>Psychosocial health needs</td>
<td>Social work pool</td>
<td>sent Epic inbox message&lt;br&gt;call / MyChart message pt</td>
</tr>
<tr>
<td>Informational needs</td>
<td>Health Learning Center pool</td>
<td>sent Epic inbox message&lt;br&gt;call / MyChart message pt&lt;br&gt;Patient directed to online Resource library through Epic MyChart</td>
</tr>
<tr>
<td>Nutritional needs</td>
<td>Dietician pool</td>
<td>sent Epic inbox message&lt;br&gt;call / MyChart message pt</td>
</tr>
</tbody>
</table>
Clinician Notification of Elevated Score in Epic

Results

Result Information

<table>
<thead>
<tr>
<th>Exam Date and Time</th>
<th>Status</th>
<th>Final result</th>
<th>Result Date and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/20/2012 12:00 AM</td>
<td>Abnormal</td>
<td></td>
<td>5/20/2012 9:25 PM</td>
</tr>
</tbody>
</table>

Assessment Results:

**Question**

- In the past 7 days how often did you have to push yourself to get things done because of your fatigue?
- In the past 7 days how run-down did you feel on average?
- In the past 7 days how fatigued were you on average?
- In the past 7 days what was the level of your fatigue on most days?

**Fatigue Bank Score**: 72.98 (Severe)

**Question**

- In the past 7 days how much did pain interfere with your day to day activities?
- In the past 7 days how much did pain interfere with your ability to participate in social activities?
- In the past 7 days how much did pain interfere with your enjoyment of social activities?
- In the past 7 days how much did pain interfere with work around the home?

**Pain Intensity Bank Score**: 63.09 (Moderate)

**Question**

- Does your health now limit you in doing two hours of physical labor?
- Are you able to do chores such as vacuuming or yard work?
- Are you able to carry a shopping bag or briefcase?
- Does your health now limit you in walking about the house?

**Physical Function Bank Score**: 23.47 (Severe)

© Epic Systems Corporation
Lurie Screening: MyChart Messages

Approx 1000 / month

Total messages sent 38,839

Unique patients messaged 6,868  Approx 1000 / month
5,909 patients with either Lurie Screening Assessment OR Distress Thermometer

3,568 patients with a completed Lurie Screening Assessment

2,868 patients with a completed Distress Thermometer

52% of those messaged
# Lurie Screening Demographics

<table>
<thead>
<tr>
<th></th>
<th>Declined</th>
<th>Screened</th>
<th>chisq p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1094 (33%)</td>
<td>1125 (32%)</td>
<td>0.2684</td>
</tr>
<tr>
<td>Female</td>
<td>2205 (67%)</td>
<td>2401 (68%)</td>
<td></td>
</tr>
<tr>
<td><strong>Hispanic or Latino</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2822 (86%)</td>
<td>3137 (89%)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Yes</td>
<td>210 (6%)</td>
<td>143 (4%)</td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>267 (8%)</td>
<td>246 (7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2164 (66%)</td>
<td>2685 (76%)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Black or Af American</td>
<td>407 (12%)</td>
<td>246 (7%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>155 (5%)</td>
<td>124 (4%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>284 (9%)</td>
<td>217 (6%)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>278 (8%)</td>
<td>244 (7%)</td>
<td></td>
</tr>
</tbody>
</table>

**Declined:**
Received MyChart message, but did not complete screener

**Screened:**
Received MyChart message and completed at least one screener

**NO significant difference in gender distribution**

**Significant differences in proportion Hispanic/Latino and in participation by race**
PROMIS Scores

- use a T-score metric
  - $M = 50$
  - $SD = 10$

- Pt’s score defined by how it compares to the scores of large representative sample

- High scores = more of the domain being measured
  - High / more fatigue – bad
  - High / more physical function - good

*These are general guidelines to aid in interpreting PROMIS® T-scores. Within a given condition or PROMIS domain, thresholds may differ.*

HealthMeasures.net/PROMIS
Lurie Screening: CAT Scores

**Anxiety score distribution**
7.200% had a score >= 65

**Fatigue Score distribution**
2.630% had a score >= 70

**Depression score distribution**
7.714% had a score >= 60

**Pain Interference score distribution**
1.898% had a score >= 70

**Physical function score distribution**
4.959% had a score <= 30

Legend:
- Anxiety
- Fatigue
- Depression
- Pain Interference
- Physical Function

Average CAT Score:
- 2015
- 2016
- 2017

Cancer site: All

% assessments above set alert thresholds
## PROMIS SCORES & CLINICAL ALERT THRESHOLDS

### % ASSESSMENTS

<table>
<thead>
<tr>
<th></th>
<th>Within threshold</th>
<th>Outside threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety (&gt;=65)</td>
<td>93.03</td>
<td>6.97</td>
</tr>
<tr>
<td>Depression (&gt;= 60)</td>
<td>92.53</td>
<td>7.47</td>
</tr>
<tr>
<td>Fatigue (&gt;= 70)</td>
<td>97.41</td>
<td>2.59</td>
</tr>
<tr>
<td>Pain Interfer (&gt;=70)</td>
<td>98.16</td>
<td>1.84</td>
</tr>
<tr>
<td>Phys Function (&lt;=30)</td>
<td>92.82</td>
<td>7.18</td>
</tr>
</tbody>
</table>

### % PATIENTS ever at / above threshold

<table>
<thead>
<tr>
<th></th>
<th>Within threshold</th>
<th>Outside threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety (&gt;=65)</td>
<td>88.09</td>
<td>11.91</td>
</tr>
<tr>
<td>Depression (&gt;= 60)</td>
<td>87.8</td>
<td>12.2</td>
</tr>
<tr>
<td>Fatigue (&gt;= 70)</td>
<td>94.9</td>
<td>5.1</td>
</tr>
<tr>
<td>Pain Interfer (&gt;=70)</td>
<td>96.4</td>
<td>3.6</td>
</tr>
<tr>
<td>Phys Function (&lt;=30)</td>
<td>86.36</td>
<td>13.64</td>
</tr>
</tbody>
</table>
NEEDS ASSESSMENT ALERTS

**Percent of all assessments that triggered an alert**

- **Social Work**
  - Alert not triggered: 68.25%
  - Alert triggered: 31.75%

- **Nutrition**
  - Alert not triggered: 41.81%
  - Alert triggered: 58.19%

- **HLC**
  - Alert not triggered: 79.9%
  - Alert triggered: 20.1%

**Percent of patients that ever triggered alert**

- **Social Work**
  - Alert not triggered: 48.88%
  - Alert triggered: 51.12%

- **Nutrition**
  - Alert not triggered: 38.93%
  - Alert triggered: 61.07%

- **HLC**
  - Alert not triggered: 66.67%
  - Alert triggered: 33.33%
- Epic queries confirming follow-up contact to assessments triggering clinical alerts is occurring

- Dieticians: w/in 2 days

- Social workers: w/in 3 days

- HLC: w/in 4 days
Ongoing & planned analyses:

- relationships between assessment results & health care usage
- changes in CAT scores & psychosocial needs over time

Expanded implementation:

- switch to NM PRO platform
- in-clinic + at-home administration
- Medical + Surgical Oncology in Central Region (Sept. 2017)
- Radiation Oncology + North & West Regions (planned 2018)
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Questions?

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