Best Practices: Optimizing Supportive Care Interventions in Electronic Health Records

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Mary E. Cooley, PhD, RN, FAAN; David F. Lobach, MD, PhD, MS

* = Presenter
## Presenter Disclosure Information

### Faculty Disclosure

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Honoraria/Expenses</th>
<th>Consulting/Advisory Board</th>
<th>Funded Research</th>
<th>Royalties/Patent</th>
<th>Stock Options</th>
<th>Ownership/Equity Position</th>
<th>Employee</th>
<th>Other (please specify)</th>
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- UptoDate: No, nothing to disclose
- Pfizer: Yes, please specify
- Johns Hopkins University Press: Yes, please specify

*Note: UptoDate and Johns Hopkins University Press have disclosed something.*
True Patient-Centered care

- Patient distress must be visible to clinicians
- Easy for patients to report; easy for clinicians to respond
- Assessed and managed with evidence-based protocols
- Outcomes tracked
Patient-Reported Outcomes
Clinical Decision Support (CDS)*

- The act of providing clinicians, patients and other healthcare stakeholders with pertinent knowledge and/or person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care\(^1\)

The right information to the right person at the right time in the right setting in the right format

* Lobach D et al. with permission
Improvements with use of PROs + CDS$^2$

- Patient-clinician communication
- Clinician awareness of symptoms
- Symptom management
- Patient satisfaction, QoL, and OS
- Tolerance of treatment
- Fewer unplanned admissions or ED visits for uncontrolled symptoms
Use of PROs³

Referral
Outpatient appointment
ED visit
Improved survival with Sentinel PRO⁴

Figure 2. Kaplan-Meier Curves for the Overall Survival (OS) Analysis

A Intention-to-treat analysis

B Censoring of crossover analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>Median OS</th>
<th>12-mo OS, %</th>
<th>24-mo OS, %</th>
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</thead>
<tbody>
<tr>
<td>Web-based monitoring</td>
<td>22.5 mo</td>
<td>75</td>
<td>50</td>
</tr>
<tr>
<td>Control</td>
<td>14.9 mo</td>
<td>56</td>
<td>34</td>
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</tbody>
</table>

Source Median OS 12-mo OS, % 24-mo OS, %
Web-based monitoring 22.5 mo 75 50
Control 13.5 mo 53 26
eRapid²

SEVERITY-TAILORED ADVICE or CONTACT YOUR ONCOLOGY TEAM

Velikova G, MD, PhD
NLP in symptom control

Referral

Outpatient appointment

ED visit
Clinical Guidelines often not used

- Innovative approaches are needed to integrate evidence-based palliative care into routine oncology care
- Clinical guidelines (CG) can enhance symptom management but often are not used in the practice setting\(^6\)
- It takes an average of 5 years for a CG to be adopted into the practice setting\(^7\)

* Cooley ME Et al. with permission
CDS can integrate Clinical Guidelines

- Clinical Guidelines for symptom assessment and management
  - NCCN; ESMO; MASCC; ASCO
- Clinical Decision Support can facilitate the dissemination and adherence to these Clinical Guidelines\(^8\)
What’s needed if CDS systems are to improve practice$^{9-11}$

- Clinical Decision Support as part of the workflow
- **Specific recommendations** rather than assessment alone
- Clinical Decision Support at the time and location of decision-making
- Computer-based Clinical Decision Support
Sample Algorithm for Moderate Pain -- Proposed

Lobach DF et al. with permission
Sample Algorithm for Moderate Pain– Actual

Lobach DF et al. with permission
Data needed by algorithms

- **EHR**
  - Co-morbidities
  - Laboratory data
  - PRO data from patient
  - Medications prescribed
  - Oncology Treatment history (chemo, radiation, surgery)

- **Patient report**
  - PRO of Symptoms
  - Medications actually taken
Symptom Management Toolkit

• Promotes self-care for symptoms

* Cooley ME et al. with permission
Coordinated View of SAMI-L System*

* Cooley ME et al. with permission
SAMI Process\textsuperscript{12, 13}
Report delivered to Clinicians...

### Lung Cancer Symptom Assessment and Management Intervention

<table>
<thead>
<tr>
<th>SUPPORTIVE CARE MEDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRESCRIBED MEDICATIONS</strong></td>
</tr>
<tr>
<td>Metrazapine 15 MG Disintegrating Tablet, 1 gm</td>
</tr>
<tr>
<td>Lorazepam 5.5 MG Oral Tablet, 1 tab pm</td>
</tr>
</tbody>
</table>

**Medication Allergies and Risk for Alcohol Use Disorder**

| NSAIDs | Alcohol Use Disorder: LDN risk |

**SYMPTOM AND SUGGESTION** (if normal hepatic function)

- **Pain**
  - Period: Today
  - Scale: 0-10
  - Description: Please assess the need for opioid analgesia.

- **Dyspnea**
  - Scale: 1-5
  - Description: Consider referring patient to a Pulmonary specialist in symptom management.

- **Depression**
  - Period: Past 1 week
  - Scale: 0-7
  - Description: Social workers for rehabilitation exercises and/or Respiratory therapy consult.

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**Lung Cancer Symptom Assessment and Management Intervention**

**Supportive Care Medications**

<table>
<thead>
<tr>
<th>Prescribed Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitoxantrone 15 MG Disintegrating Tablet 0.5 mg</td>
</tr>
<tr>
<td>Lorazepam 0.5 MG Oral Tablet 0.5 mg pm</td>
</tr>
<tr>
<td>NSAIDs</td>
</tr>
</tbody>
</table>

**Symptom and Suggestions**

- **Pain** (Somatic) Scale: 0-10
  - Pain: 5 MODERATE
  - Give Morphine Sulfate Immediate Release 7.5-15 mg po q4h pm
  - OR Oxycodone 5-10 mg po q4h pm
  - OR Hydromorphone 2-4 mg po q4h pm
  - Suggest giving Senna 1-2 tablets bid, up to a maximum 4 tablets po bid, AND Docusate Sodium 1 tablet bid
  - For somatic pain, suggest giving acetaminophen 1000 mg po tid for somatic pain, not to exceed 3000 mg per day
  - Consider referring patient to Breakthrough Pain section in symptom management toolkit

- **Dyspnea** Scale: 1-5
  - Dyspnea: 5 SEVERE
  - Please see the recommendation for opioid adjustment to improve pain control. The same opioid at the same dose and frequency should be used to treat the dyspnea.
  - Suggest adding bowel recommendations that are given in pain section
  - Consider referral to Social work for relaxation exercises and/or Pulmonary therapy consult for breathing exercises and/or Pulmonary rehabilitation

- **Depression** Scale: 0-7
  - Depression: 3 MODERATE
  - Consider referral to Social work for relaxation exercises and/or Pulmonary therapy consult for breathing exercises and/or Pulmonary rehabilitation

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**Report delivered to Clinicians...**
Report delivered to Clinicians

Lung Cancer Symptom Assessment and Management Intervention

SUPPORTIVE CARE MEDICATIONS

<table>
<thead>
<tr>
<th>PRESCRIBED MEDICATIONS</th>
<th>ACTUAL MEDICATIONS</th>
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</thead>
<tbody>
<tr>
<td>Mirtazapine 15 MG Disintegrating Tablet, 1 qpm</td>
<td>Taken as prescribed</td>
</tr>
<tr>
<td>Lorazepam 0.5 MG Oral Tablet, 1 tid pm</td>
<td>Taken as prescribed</td>
</tr>
</tbody>
</table>

Medication Allergies and Risk for Alcohol Use Disorder

NSAIDs
- Alcohol Use Disorder: LOW risk

SYMPTOM AND SUGGESTION (if normal hepatic function)

PAIN
- Give Morphine Sulfate Immediate Release 7.5-15 mg po q6h pm
- OR Oxycodone 5-10 mg po q6h pm
- OR Hydromorphone 2.4 mg po q6h pm
- Suggest giving Seneca 1-2 tablets bid, up to a maximum of 4 tablets po bid, AND Docusate Sodium 1 tablet bid
- For somatic pain, suggest giving acetaminophen 1000 mg po bid for somatic pain, not to exceed 1000 mg per day
- Consider referring patient to Breakthrough Pain section in symptom management toolkit

DYSPESSIA
- Scale: 1-5
- SEVERE
- Please see the recommendation for opioid adjustment to improve pain control. The same opioid at the same dose and frequency should be used to treat the dyspepsia.
- Suggest adding bowel recommendations that are given in pain section
- Consider referral to Social work for relaxation exercises and/or Respiratory therapy consult for breathing exercises and/or Pulmonary rehabilitation

SYMPTOM | CLINICAL COURSE | CURRENT

- PAIN
  - Scale: 0-10
  - MODERATE
  - Period: Today
  - Period: Past 1 days
  - Period: Last 2 weeks

- DYSPESSIA
  - Scale: 1-5
  - SEVERE
  - Period: Today
  - Period: Past 1 days
  - Period: Last 2 weeks

- DEPRESSION
  - Scale: 0-27
  - LOW
  - Period: Today
  - Period: Past 1 days
  - Period: Last 2 weeks

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CDS integration into EHR
Automated alerts + CDS advice in EHR
Report delivered to Clinicians’ EHR

Lung Cancer Symptom Assessment and Management Intervention

**Supportive Care Medications**

**Prescribed Medications**
- Mitrazpine 15 mg Disintegrating Tab q12h
- Lorazepam 0.5 mg Oral Tablet 5-7 pm

**NSAIDs**

**Symptom and Suggestion**

**Pain**
- (Somatic)
- Scale: 0-10
- **5** MODERATE

Give Morphine Sulfate Immediate Release 7.5-15 mg po q4h prn
OR Oxycodone 5-10 mg po q4h prn
OR Hydromorphone 2-4 mg po q4h prn

Suggest giving Senna 1-2 tablets bid, up to a maximum 4 tablets po bid, AND Docusate Sodium 1 tablet bid

For somatic pain, suggest giving acetaminophen 1000 mg po tid for somatic pain, not to exceed 3000 mg per day

Consider referring patient to Breakthrough Pain section in symptom management toolkit

**Dyspnea**
- Scale: 1-5
- **4** SEVERE

Please see the recommendation for opioid adjustment to improve pain control. The same opioid at the same dose and frequency should be used to treat the dyspnea.

Suggest adding bowel recommendations that are given in pain section

Consider referral to Social work for relaxation exercises and/or Pulmonary therapy consult for breathing exercises and/or Pulmonary rehabilitation

**Depression**
- Scale: 1-27
- **2** LOW

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Potential Benefits of Tailored Recs

- Clinician support and education with tailored symptom assessment and management recommendations
- Timely referrals
- Decreased patient and family distress
- Further decrease in patient visits for symptom management and unplanned admissions
- Outcomes can be analyzed and algorithms improved/adjusted
QUESTIONS?
References

11. Lobach DF. The road to effective clinical decision support: are we there yet? BMJ 2013;346:f1616