LOW BACK PAIN GUIDELINES AND APPLICATION OF GEM CUTTER
Overview

• Back pain management experience at Geisinger
• Current back pain project
• Translation process including application of GEM Cutter
Geisinger Clinic Context

• 14,500 new low back visits (CY2007)
• 48,000 total low back visits in Primary Care (CY2007)
• More than 50% of low back referrals for surgical evaluation occurred within the first 6 weeks of pain.
  – Surgery is rarely indicated unless pts have failed 3 months of conservative therapy
  – 15% of referred actually had spinal surgery
Geisinger Clinic Context

• 5600 radiographs ordered (CY2007)
  – Vast majority obtained during acute phase with little clinical utility

• 8800 MRIs ordered per year (2007)
  – 70% obtained within the first 6 weeks

• RESPONSE: ProvenCare Low Back
  – System level protocol to improve primary care management of LBP
EPIC Tool Protocol For LBP

• An Epic button on the speed bar enabled the LBP workflow
• Navigator Flowsheets for new & returning patients
• Flowsheets integrate responses with automatic orders & SmartSet.
• The nurse/physician responses built the progress note for the visit
• Process failed to be used
Current LBP Project

• Current Project Objectives
  – Improve appropriate use of care (i.e., referrals, procedures, medications) for LBP patients
  – Improve patient satisfaction with care received during the visit
  – Improve patient outcomes related to pain and functionality
Current LBP Project

- Primary care based RCT
- Guideline Translation
  - Trigger
  - Input Data
  - Application of guideline to data
  - Output

- Usual vs new protocol care
- Range of options
  - Pre-coded chief complaint and randomization step
  - Patient reported & EHR data
  - GEM cutter applied to ICSI guidelines
  - Web-based application that interacts with the EHR

Defines the “space” for action
Translating Guidelines To Operational Rules

- ICSI Guidelines
  - Conditional & mandatory rules processed using GEM Cutter
- Vetting rule related decision variables & options for inputs & outputs
- Process is highly iterative
  - Rules define the “space” for action
  - The action dictates the input data needs
  - The options for action are very broad
  - The input data options are also very broad

- 1 to 13 decision “variables” per action
- A single decision “variable” is the product of one or more other variables
Translating Guidelines
Input Data: Largely Patient Reported

- Pain experience
- Treatments and response
- Depression and anxiety
- Fear avoidance
- Catastrophizing
- Care preferences and interest in treatments, imaging, etc
- EHR data from previous visits and orders

- Duration
- Location
- OTCs and Rx meds used
- Treatment response
- Side effects and overuse
Translating Guidelines
Home Self-Care Treatment Program

- Four conditional and three imperative rules
  - Example: If no previous evaluation
  - Distinguish untreated acute pain and ongoing chronic pain
- 16 patient completed questions (3 minutes)
- Now What?
  - What is it that actually helps the provider and patients get the job done?
Action Options

• Present recommendation
  – Not very useful and will not be used that often
• Add a display of the supporting data
  – A little better, but still not that useful
• Present the above in a format to be shared by provider and patient
  – Engages the patient and possibly the provider
• None of the above features focus on the needs of the provider
  – Improve productivity and simplify the delivery of high quality care
Action Options

• Voice the recommendations to account for patient factors (e.g., fear avoidance)
  – Helps provider get the job done; facilitates shared discussion

• Integrate order process with display
  – Improves getting the job done

• Make display interactive and automate manufacturing of progress notes
  – Make the best care the easiest care to deliver
<table>
<thead>
<tr>
<th>Current Medications</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>Over-The-Counter Medications</strong></td>
<td>Free Text to be included in progress note</td>
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<tr>
<td>OTC meds:</td>
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<tr>
<td>Number of days Pt takes OTC(s):</td>
<td>Free Text to be included in progress note</td>
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<tr>
<td>Tablets or pills of OTC(s): ___/day</td>
<td>Free Text to be included in progress note</td>
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<tr>
<td>How often is the pain reduced:</td>
<td>Free Text to be included in progress note</td>
</tr>
<tr>
<td><strong>Prescription Medications</strong></td>
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<tr>
<td>Rx meds for back pain: *</td>
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<tr>
<td>Other Rx meds:</td>
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<table>
<thead>
<tr>
<th>Pain Experience</th>
<th>Comments</th>
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<tr>
<td>Duration of Current Episode:</td>
<td>Free Text to be included in progress note</td>
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<tr>
<td>Duration in Past 6 Months:</td>
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<td>Location:</td>
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<tr>
<td>Overall Experience:</td>
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<tr>
<td>Numbness or tingling:</td>
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<td>Worse on some days than others:</td>
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<tr>
<td>Travels or radiates:</td>
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<tr>
<td>Chronicity Grade:</td>
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<table>
<thead>
<tr>
<th>Work Impact</th>
<th>Comments</th>
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<tr>
<td>Current status:</td>
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<tr>
<td>Days missed in past week:</td>
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<td>Return to work:</td>
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<td>Worker’s compensation:</td>
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<tr>
<td>Any restrictions in 6 months:</td>
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<table>
<thead>
<tr>
<th>Psychosocial Concerns</th>
<th>Comments</th>
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<tbody>
<tr>
<td></td>
<td>Free Text to be included in progress note</td>
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</table>

*only those that Pt says Yes to for back pain will appear*
**RECOMMENDED CARE PLAN**

**Nuanced text based on Pt fear avoidance score**

Resuming activities/work/rehabilitation

- **IMAGING RECOMMENDATIONS ("Discuss in more detail if conflict with what Pt wants")**
- **REFERRAL RECOMMENDATIONS ("Discuss in more detail if conflict with what Pt wants")**
- **MEDICATION RECOMMENDATIONS**
GEM Cutter Next Generation

• Help users fully vet the guideline implementation process
• GEM Cutter accelerates understanding of guidelines
  – However, options for the decision variables and actions are very broad
• Next Generation GEM Cutter could advance implementation by:
  – Integrating documentation for decision variables, rules, and actions
  – Linking integration to judgments about the form of action to be taken