Panel #7: “Scaling up” PROs

Implementing Patient Reported Outcomes in Routine Clinical Care

HIV as an example to improve clinical care and facilitate research

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University of Washington
On behalf of CNICS and UW PROMIS
Created “to better define the relationship between patient and treatment factors and long-term clinical outcomes among HIV-infected patients in the HAART era”
>27,000 HIV-infected individuals across the US
### CNICS Clinical Assessment

<table>
<thead>
<tr>
<th>Domain</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARV adherence</td>
<td>ACTU-4, VAS, 30-day rating</td>
</tr>
<tr>
<td>Depression</td>
<td>PHQ-9 from PRIME-MD</td>
</tr>
<tr>
<td>Anxiety</td>
<td>PHQ-4</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>AUDIT-C</td>
</tr>
<tr>
<td>Substance use</td>
<td>ASSIST</td>
</tr>
<tr>
<td>Health related quality of life</td>
<td>EuroQOL-5D</td>
</tr>
<tr>
<td>Symptom burden</td>
<td>HIV Symptoms Index (HIV-SI)</td>
</tr>
<tr>
<td>Body morphology</td>
<td>Adapted from FRAM instrument</td>
</tr>
<tr>
<td>HIV Risk Behavior</td>
<td>HRAP</td>
</tr>
</tbody>
</table>

Assessments on tablet PCs with touch screens every 4-6 months, contains between 69 and 127 items depending on responses. Selected to improve clinical care, inform research, minimize patient burden.
Assessment

- We use an open-source, non-proprietary web-based survey software application designed by Dr. Lober and colleagues.
- Surveys are completed on touch-screens.
  - Facilitate data collection, decrease staff burden eliminating scoring and data-entry time compared with the use of paper forms, and also allows immediate access to results.
  - Highly acceptable and feasible among HIV-infected patients in routine clinical care.
- Skip patterns based on PRO results, clinical and demographic data, time since last completed an instrument.
- Encrypted SSL/TLS.
- English and Spanish.
- Tracks patient eligibility and time since last assessment, time to complete each assessment as well as time to complete each item and instrument for each patient.
The interface is designed for ease of navigation with questions displayed with large, easy to read type, and clearly labeled radio buttons to indicate responses, no typing to answer questions or navigate, and no keyboard available. No double or ambiguous answers by allowing only one response per question but permits mistakes to be easily corrected.

How many doses of your medications did you miss in the last 4 days?
Tailored feedback based on clinic flow and practices: paper-based, electronic, integrated, often with specific resources and options

### Patient-Based Measures Provider Feedback

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9 Overall depression score last 2 weeks</td>
<td>Moderate depression (10-19)</td>
</tr>
<tr>
<td>PHQ-9 Suicidal ideation score last 2 weeks</td>
<td>Not at all</td>
</tr>
<tr>
<td>Substance use within last 3 months</td>
<td></td>
</tr>
<tr>
<td>Cocaine/Crack</td>
<td></td>
</tr>
<tr>
<td>Opiates</td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td></td>
</tr>
<tr>
<td>Tobacco use</td>
<td>Currently (Between 1 and 2 packs a day)</td>
</tr>
<tr>
<td>Alcohol Score (AUDIT/AUDIT-C)</td>
<td>At-risk alcohol consumption (≥5, AUDIT questionnaire)</td>
</tr>
<tr>
<td>MINI Score</td>
<td>Is Not a Dependent Drinker</td>
</tr>
<tr>
<td>Antiretroviral adherence</td>
<td></td>
</tr>
<tr>
<td>Adherence in the past 4 weeks</td>
<td>Fair</td>
</tr>
<tr>
<td>Last missed</td>
<td>Within the last week</td>
</tr>
<tr>
<td>High risk behavior-last 6 months</td>
<td></td>
</tr>
<tr>
<td>Anal sex condom use: Had anal sex with 0 people in the last 6 months</td>
<td></td>
</tr>
<tr>
<td>Vaginal sex condom use: Never had vaginal sex</td>
<td></td>
</tr>
<tr>
<td>Oral sex partners: Question not answered</td>
<td></td>
</tr>
<tr>
<td>Sharing needles or injection equipment: never used non-medical drugs by injection</td>
<td></td>
</tr>
</tbody>
</table>
Provider assessment of adherence: enhancing clinic buy-in

- 62 of initial 500 patients self-reported very poor adherence
- Providers documented (same day):
  - Inadequate adherence for only 17 (27%)
  - No mention of adherence for 25 (40%)
  - Good adherence for 20 (32%)
- Furthermore, among the 17 in whom providers correctly documented inadequate adherence
  - 5 (29%) had moderate depression that was not acknowledged
  - 4 (24%) had current substance abuse that was not acknowledged

RESULT: PROs as a VITAL SIGN: Part of routine clinic procedures
Study design and methods

- Observational workflow studies
- Semi-structured in-depth 1:1 interviews with clinic providers and staff at roll-out and 1 year
- Focus group with a user-centered design
- Field-based software usability testing (patient participants)
  - Used the open-source CamStudio screen + audio capture software [http://camstudio.org/](http://camstudio.org/)
  - Patients completed the CASI while “thinking aloud” and being verbally interviewed and video recorded for qualitative analyses to identify recurring themes
Findings: recurring themes from provider & staff interviews

- System is promoting awareness of previously unrecognized/under-recognized issues
- Reports serve as “conversational icebreakers” for MD’s to engage patients
- System implementation has been minimally disruptive to clinic workflow
“You probably have patients who feel more comfortable putting that down on a computer generated survey than they do telling people straight up. And I should say that yes, there have been things that have come forward on that assessment tool that I didn't know about my patients.”

“Unexpected effects? Well, um – I have been stunned by how many people function on some levels with active depressive symptoms.”

“….he drank a lot more than I realized, and I think the way I will just say that to him again, is ‘I see that you answered this, can we talk more about that’. So it’s sort of a conversation starting point.”

“I think it's been a nice tool to kind of engage around real issues.”

“I'm actually surprised at how quickly it's gotten to be this streamlined. That's surprising to me.”
Findings: recurring themes from patient usability tests

- System (hardware & software) is easy to use:
  - (Minor) criticisms were limited to the wording of a few items
  - “Straightforward” questions are appreciated
- System elicits information that is:
  - Useful
  - Relevant
  - Important
- Completing a CASI session is an inherently positive, useful, and valuable experience by:
  - heightening/promoting my self-awareness, and
  - challenging me to be honest with myself and with others about my health-related behaviors and symptoms
Incorporating key stakeholders

### Rank order of General Care Domains

<table>
<thead>
<tr>
<th>PROMIS Existing Domain</th>
<th>Provider ranking</th>
<th>Patient ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Physical function</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Pain</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Fatigue</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Anger</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

### Rank order of HIV care domains

<table>
<thead>
<tr>
<th>Potential New Domain</th>
<th>Provider ranking</th>
<th>Patient ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication adherence</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>HIV &amp; Treatment Symptoms</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Cognition</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Sexual risk behavior</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>HIV stigma</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Positive affect</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Sexual function</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Social roles</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Spirituality/meaning of life</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

* Provider findings similar for ranking for both clinical research and clinical care*
Study Design: Improving Clinical Care

PRO assessment integrated into care 1/09

- ~600 pts completed since integration, with report delivery
- ~800 pts completed without report delivery, prior to 1/09

Chart reviewers

- Blinded to whether or not provider received report
- Reviewed same-day provider documentation of awareness and/or action within 5 domains 8 months before and after integration
Provider Documentation: Before vs. After PRO Delivery

![Bar chart showing trends in depression, inaccurate adherence, at-risk alcohol, and substance use before and after PRO delivery.](chart.png)
Findings

- PRO collection improves:
  - Accuracy in assessing ARV adherence
  - Identification of at-risk alcohol use
  - Action to address at-risk alcohol use
  - Identification of moderate-to-severe depression

- Actions needed:
  - Improve provider ability and/or willingness to assess and respond to known sexual risk behavior
  - Partner with providers to further tailor and promote PRO assessment as a useful, relevant clinical tool
  - Build referral options into PRO assessment to stimulate more proactive provider response across all domains
Lipoatrophy among HIV-infected patients is associated with higher levels of depression than lipohypertrophy. *HIV Med.*

Lipoatrophy and lipohypertrophy are independently associated with hypertension. *HIV Med*

Routine, self-administered, touch-screen, computer-based suicidal ideation assessment linked to automated response team notification in an HIV primary care setting. *Clin Infect Dis.*

Measuring depression levels in HIV-infected patients as part of routine clinical care using the nine-item Patient Health Questionnaire (PHQ-9). *AIDS Care.*

A structural equation model of HIV-related stigma, depressive symptoms, and medication adherence. *AIDS Behav.*

Somatic symptoms and the association between hepatitis C infection and depression in HIV-infected patients. *AIDS Care*

Migrating from a legacy fixed-format measure to CAT administration: calibrating the PHQ-9 to the PROMIS depression measures. *Qual Life Res.*

Routine depression screening in an HIV clinic cohort identifies patients with complex psychiatric co-morbidities who show significant response to treatment. *AIDS Behav.*

Evaluation of the single-item self-rating adherence scale for use in routine clinical care of people living with HIV. *AIDS Behav.*


Body mass index, immune status, and virological control in HIV-infected men who have sex with men. *J Int Provid AIDS Care*


Body mass index, depression, and condom use among HIV-infected men who have sex with men: A longitudinal moderation analysis. *Archives of Sexual Behavior.*
Lessons learned

- We have demonstrated the feasibility of collecting PROs in busy, multi-provider HIV clinics with a number of different flow patterns, EHRs, etc.
- We found a high prevalence of poor medication adherence, moderate-to-severe depression, active substance abuse, and high symptom burden.
- Additional features such as real-time, automated pager notification when patients indicate suicidality are especially valuable to providers. Important to integrate entire health team (case managers, etc.) for addressing PRO feedback.
- Qualitative evaluation methods can contribute to and/or validate optimized integration of information technologies in clinical settings.
- Important to include all key stakeholders in design stages.
- Provider feedback raises awareness and actions regarding a number of key domains such as at-risk alcohol use, depression, substance use, etc., reinforcing idea of implementing PROs not only as outcome measures but also as tools for enhancing the care process.
- Feasible to focus on improving clinical care and conducting clinical research simultaneously: not mutually exclusive goals, very related!
- Flexible implementation methods required with tailoring based on each clinic’s flow pattern and EHR.
Acknowledgements

- Many many colleagues from across CNICS
- Patients, providers, and staff members
- University of Washington Madison HIV clinic
- University of Alabama Birmingham 1917 clinic
- CFAR
- CNICS
- NIH NIMH R01
- PROMIS
Use of PRO’s in the Primary Care Setting to Support Care for Patients with Chronic Pain on Long Term Opioid Therapy

Lynn L DeBar, PhD MPH
Kaiser Permanente Center for Health Research
Agenda

• “Scaling Up” PRO Use in Routine Clinical Care for Patients with chronic nonmalignant chronic pain
  • Facilitating Conditions (safety concerns, REMS, Opioid Treatment Plans)
  • IT Infrastructure to Support Clinical Work Flow: Centrality of the Panel Support Tool
  • Important Characteristics of the PRO in Clinical Care: Logistics of Administration and Potential Reactivity

• Expanding Beyond a Single PRO: Patient and Clinician Centered Design
  • Embedding PRO Summaries into the EHR: A Work in Progress
  • Patients with Multiple and Complex Chronic Conditions: Summary PRO Reports to Facilitate Clinical Care and Patient Activation
  • Considering Patient Priorities and Values: the MySupport Profile
Rising prevalence of chronic pain
- 1/3 of the US pop. has chronic pain
- Annual US cost of $560-600 billion in health care costs and lost productivity

Primary care plays a central role in managing CNMP
- Primary care oversees & coordinates care
- Primary care providers (PCP) are faced with a paucity of systematic resources and support
- This gap leads to a reliance on opioids as a monotherapy

Use of opioids to treat CNMP rising
- Opioid prescriptions for CNMP doubled since 1980
- Opioid related morbidity and mortality have increased in past 2 decades
- Opioids are associated with significant efficacy-limiting side effects

Optimal management relies on supporting patient self-care and partnership with PCP: utilizing patient reported outcomes an important element of this
- Chronic illness management necessitates an activated patient
- PCP/patient partnership to support focus on improving functioning critical and consistent with recent IOM/DoD reports

CNMP = Chronic non-malignant pain
Unintentional overdose deaths involving opioid analgesics parallel per capita sales of opioid analgesics in morphine equivalents by year, US, 1997-2007

Source: National Vital Statistics System, multiple cause of death dataset, and DEAARCOS
*2007 opioid sales figure is preliminary
The FDA’s Risk Evaluation and Mitigation Strategies (REMS) for ER or LA Opioids

Goal: Reduce serious adverse outcomes resulting from inappropriate prescribing, misuse, and abuse of ER/LA opioid analgesics while maintaining patient access to pain medications.

• Elements to assure safe use:
  • Training for providers who prescribe ER/LA opioids
    • Specific requirements for training along with audits of the educational material
  • Medication guide: Dispensed with each ER/LA opioid
Clinical Context: KPNW Operational Response to Opioid Use

• Motivating factors for systematic clinical response (safety & efficacy concerns)
  • High dose opioid prescribing
  • Primary care in need of assistance
• Opioid Use Improvement Project (OUI)

Objectives:
• Improve patient safety
• Improve provider and team support
• Improve outcomes with chronic pain management

Opportunity for implementation of pain-related PRO
## Opioid Therapy Plan (OTP) Operational Criteria

<table>
<thead>
<tr>
<th>PATIENT CRITERIA</th>
<th>BASIC GREEN</th>
<th>COMPLEX YELLOW</th>
<th>COMPLEX RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follows plan reliably</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No history of opioid abuse</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No history of other substance abuse within past 2 years</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No current behaviors indicating drug misuse</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current behaviors raise questions about the ability to follow the OTP</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>History of opioid abuse</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>History of other substance abuse within past 2 years</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Calculated overall opioid dosing level at 180mg morphine equivalent or higher</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Have demonstrated repeated problems following the OTP (e.g. unexpected UDS)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Active substance abuse</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Have current behaviors which raise concerns about possibility of diversion</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

## PCP REQUIREMENTS

<table>
<thead>
<tr>
<th>OFFICE VISIT FREQUENCY</th>
<th>BASIC GREEN</th>
<th>COMPLEX YELLOW</th>
<th>COMPLEX RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office visit frequency (minimum)</td>
<td>Semi-annually (1 may be TAV)</td>
<td>Quarterly (2 may be TAVs)</td>
<td>Quarterly (no TAVs)</td>
</tr>
<tr>
<td>Office visit required for any dosing changes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Brief Pain Inventory (BPI) completed (minimum)**

*(Recommended to be administered at every office visit)*

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>BASIC GREEN</th>
<th>COMPLEX YELLOW</th>
<th>COMPLEX RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresh pain diagnosis on problem list</td>
<td>Yearly</td>
<td>Yearly</td>
<td>Yearly</td>
</tr>
<tr>
<td>Verify current dosing level is reflected on OTP on the problem list</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Discuss with the patient their use of opioid, non-opioid and non-pharmacological modalities to control pain</td>
<td>Each visit</td>
<td>Each visit</td>
<td>Each visit</td>
</tr>
<tr>
<td>UDS ordered and resulted (minimum)</td>
<td>Yearly</td>
<td>Quarterly</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Confirm random pill counts completed</td>
<td>PRN</td>
<td>2x/Year &amp; PRN</td>
<td>2x/Year &amp; PRN</td>
</tr>
<tr>
<td>Create AVS or send letter with patient's dosing and instructions after dosing change</td>
<td>Yes</td>
<td>Yes – AVS only</td>
<td>Yes – AVS only</td>
</tr>
<tr>
<td>Create separate monthly opioid prescriptions, no refills and no mail order</td>
<td>No</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Early refills for travel</td>
<td>Yes</td>
<td>Yes</td>
<td>Up to 2/year</td>
</tr>
<tr>
<td>May refill prescriptions early for lost or stolen reasons (Police report needed before receiving refill of stolen medications)</td>
<td>Yes</td>
<td>Limited supply only</td>
<td>No</td>
</tr>
<tr>
<td>New OTP required when prescriber changes or OTP color changes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Kaiser Permanente’s Patient Panel Support Tool

- Web-based software that extracts information from KP HealthConnect EMR (Epic) to help physicians improve and manage patient care
- Highlights “gaps” between delivered care and national guidelines pertaining to chronic disease management and preventive care (includes “gaps” associated with OTP such as the regular administration of the Brief Pain Inventory)
- Specifies the actions a primary care team must take to resolve these gaps both for individual patients and across PCP panel
## Utilization Profile

Last Discharge: 10/27/08  
MYALGIA AND MYOSITIS NOS  
Last ER Visit:  

### Preventive Care

Last Flu Date:  
Last H1N1 Date:  
Last Pneumo: 7/22/08  
Last Td:  
Last Tdap: 7/22/08  
Last Mamm: 12/20/10  
Last Pap: 5/19/10  
Last Flex Sig: 5/6/08  

### Opiate Therapy Plan

**OTP on PL: 2/22/10**  
Last APAP dispense:  
Last OTP order:  
Last Brief Pain Inventory: 8/29/11  
Last PCP visit w PAIN Dx:  
Last urine drug test: 1/13/11

## Panel Support Tool Caregaps

### Therapeutic Care Gaps:

**Statin - START at min. Simv 40. Last LDL 224 24-NOV-10 Possible interaction:**

### Chronic Condition Monitoring Care Gaps:

- **OTP yellow/red: QTRLY Urine Drug Screening DUE**
- **DM eye screen OVERDUE, previous 24 months findings unknown**
- **HBA1C DUE SOON Last: 7.1 05-APR-11.**

### Preventive Care Gaps:

- **Active Tobacco Use: Advise quitting today**
- **Ob/Gyn: REED, SANDRA**
- **Ob/Gyn Care Gaps:**
  - COTEST OVERDUE. Last result: PAP N / EC- 19-MAY-10. (no endocervical cells)

**Hover over the result to see trended results if available**
Establishing Routine BPI Administration in Clinical Workflow

**PLANNING, OBTAINING APPROVALS**

- Identify stakeholders
  - Medical Group: Associate Medical Directors, Department Chiefs
  - Health Plan: Operations, Information Technology

- Consult with stakeholders
  - BPI length: 4- vs. 12-item?
    - Health Plan: Decision: Use 4-item (short-form) version
  - New EMR build for BPI-SF vs. edit 12-item?
    - Health Plan: Decision: Build new EMR questionnaire
  - BPI-4 implementation: how to prompt completion?
    - Health Plan: Decision: Create new care gap

- Obtain regional approvals
  - • Clinical Decision Support Workgroup
  - • Care Delivery System Advisory Group
  - • Workflow Advisory Group

**DEVELOPMENT AND IMPLEMENTATION**

- Develop Care Gap
  - Identify care gap criteria
  - Provide needed data (questionnaire IDs, relevant NDC and ICD-9 codes)

- Develop Health Connect documentation
  - Develop appropriate and comprehensive search criteria
  - Develop “smart phrases” to allow for efficient documentation

- Test Care Gap
  - Identify positive and negative test cases
  - Complete BPI-SF on KPGA staff, evaluate data quality

**COMMUNICATION AND EVALUATION**

- Develop communication and training plan
  - Presentations to primary care department and operations team meetings
  - Staff messages via HealthConnect
  - Additional how-to resources available online

- Develop and implement ongoing evaluation plan
  - BPI care gap added to regional workflow efficiency report
  - BPI care gap added to panel support tool weekly reporting
  - KPGA analysts pull BPI data from EMR
Using the Personal Health Record to Collect PROs

www.KP.org

Kaiser Permanente Research

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Important Characteristics of the PRO: Logistics of Administration and Potential Reactivity

• Logistics of Administration
  • Frequency of BPI administration linked to patient’s OTP “risk” level -> need to support low burden modes of collection to encourage more frequent PRO collection (e.g., Personal Health Record / e-mail, IVR)
  • 4- versus 12-item scale improves work flow

• Consider context of PRO administration and potential reactivity
  • Patient belief: Pain severity linked to “need” for opioid medication
  • Reported PCP preference for abbreviated scale as “focuses the discussion on functioning and don’t need to explain an arbitrary summary score”
Potential Cautions for Research Use of Clinically Collected PROs

- Adoption can be largely driven by “stick” (regulation or safety concerns) rather than “carrot” (clinical utility)

- Example: Administration of BPI linked to Opioid Prescription
  - Frequency of PRO administration linked to opioid dose (morphine equivalent dose)
  - Potential loss of follow-up data for those tapering off opioids

- Timing and Amount of Data Variable
  - Heterogeneity across health care providers
  - Potential for more frequent collection of PRO among patients with higher rates of health care utilization (potential bias by medical complexity or pain severity)
Expanding Beyond a Single PRO: Patient and Clinician Centered Design

• Embedding PRO Summaries into the EHR: A Work in Progress…
PRO data entered in separate charting area

Lab data embedded directly into chart note
• Less than ideal interface and data entry

- Questionnaires
  - Current Questionnaires
  - BRIEF PAIN INVENTORY EP (PAINMG - NATL)

- Add
- Remove

<table>
<thead>
<tr>
<th>Adv</th>
<th>Question</th>
<th>Answer</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pain at its worst in past week</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain at its least in past week</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average pain in past week</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain right now</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In the last week, how much relief have pain treatment or medications provided?</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain interference with general activities in past week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain interference with mood in past week</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Pain interference with walking ability in past week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain interference with normal work (job or house) in past week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain interference with relations with other people</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain interference with sleep in past week</td>
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</table>

© 2013 Epic Systems Corporation. Used with permission.
### Variable collection of PROs

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Worst Pain</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>8</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Least Pain</td>
<td>5</td>
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<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average Pain</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>Current Pain</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Percentage of Pain Relief</td>
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<td>30%</td>
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<tr>
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<td></td>
<td></td>
<td>Activity Interference</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Mood Interference</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Walking Interference</td>
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<td>Work Interference</td>
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<td>Relationship Interference</td>
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<td></td>
<td>Sleep Interference</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Enjoyment Interference</td>
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<td>4</td>
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</table>

© 2013 Epic Systems Corporation. Used with permission.
• Less than ideal display when viewing multiple PROs
<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Frequency</th>
<th>Positive Effect</th>
<th>Negative Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug 1</td>
<td>10mg</td>
<td>QD</td>
<td>Increased</td>
<td>None</td>
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<tr>
<td>Drug 2</td>
<td>20mg</td>
<td>BID</td>
<td>Decreased</td>
<td>None</td>
</tr>
<tr>
<td>Drug 3</td>
<td>30mg</td>
<td>TID</td>
<td>None</td>
<td>Nausea</td>
</tr>
<tr>
<td>Drug 4</td>
<td>40mg</td>
<td>QID</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

List any other medications you take such as aspirin, statins, bisphosphonates, hormone replacement therapy (HRT), and how often you take them:

- Aspirin 100mg daily
- Calcium 500mg twice daily

List any vitamins or herbal products you take and how often you take them:

- Vitamin D 2000 IU daily
- Ginkgo Biloba 240mg daily

*Note: This is a sample form and not intended for use in a clinical setting.*
Summary PRO Reports to Facilitate Clinical Care and Patient Activation

**Collaborative Care for Chronic Pain in Primary Care**

**Sponsor:** National Institutes of Health Common Fund, National Institute of Neurological Diseases and Stroke, National Institute of Drug Abuse, and Administered by the National Center for Complementary and Alternative Medicine

**Goal:** Coordinate and integrate services for helping patients adopt self-management skills for managing chronic pain, limit opioid medications, and identify exacerbating factors amenable to treatment that is feasible and sustainable within the primary care setting

**Design:** Pragmatic Trial at KP Northwest, KP Southeast, and KP Hawaii

**Target Population:** Patients with chronic pain on long-term opioid treatment (prioritized recruitment based on operational need: MED ≥ 120 mg, concurrent opioid and benzodiazepine use, or high utilization of primary care services)

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Scoring or compilation of relevant assessments
MySupport Tool

Effects of a Patient Driven Assessment Process with Complex Pain Patients

Sponsor: PCORI

Goal: Develop a patient-driven assessment process for patients with complex pain that helps them identify functional issues of primary importance to them and provides PCPs with this information at the point-of-care that can be easily tracked over time.

Target Population: Patients with widespread chronic pain or ≥ 3 pain conditions on long term opioid treatment

Design: Mixed methods with RCT pilot
### A) MyMOP

**Symptom 1:**

<table>
<thead>
<tr>
<th>As Good as it could be</th>
<th>As Bad as it could be</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Symptom 2:**

<table>
<thead>
<tr>
<th>As Good as it could be</th>
<th>As Bad as it could be</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Activity:**

<table>
<thead>
<tr>
<th>As Good as it could be</th>
<th>As Bad as it could be</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Wellbeing during the last week:**

<table>
<thead>
<tr>
<th>As Good as it could be</th>
<th>As Bad as it could be</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Symptom 1 duration:**

- 0-4 weeks
- 4-12 weeks
- 3 months-1 year
- 1-5 years
- Over 5 years

**Medication:**

- Yes
- No

**Impact on activity:**

- A bit worse
- A bit better
- Even better
- Much better

---

### B) MySupport

1. Write down the problem (physical or mental) which bothers you the most. Now consider how bad each symptom is, over the last week, and score it by marking your chosen number.

2. Mark how many days this past week you were bothered by this problem.

3. How long have you had this problem, either all the time or on and off?

4. What one activity (physical, social or mental) is important to you, and that your problem makes difficult or prevents you from doing. Score how bad it has been in the last week.

5. Lastly how would you rate your general feeling of wellbeing during the last week?

6. List any other things of concern:
Process of “Pushing” PRO Report into EMR

PDAP – My Support Tool
Electronic-based flow

Participant → Screening/Assessment Call → Project interviewer → Entry into online MySupport tool/tracking system → Project staff run report & export as PDF/JPG → Project staff import report file via EMR Media Manager → Project file share → Project staff saves file → My Support report data file (pdf/jpg)

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**PRO Instrument Selection**
- Instrument choice
- Psychometrics
- Research focused analysis

**PRO Implementation**
- Data collection
- Health IT / EHRs
- Common data elements
- Integration into clinical care
- Real-time analytics to support clinical processes
- Research with service
“Scaling Up” a Successful Geriatrics Model of Care

Michael L. Malone, M.D.
Aurora Health Care/ University of Wisconsin School of Medicine and Public Health
November 20, 2013
George and “Sweet Potato”
The Model-Acute Care for Elders:

Functional Older Person

Acute Illness, Possible Impairment

Hospitalization

Depressed Mood Negative Expectations

ACE Programs

Prehab Program Interventions:
- Prepared environment with standard equipment for seniors
- Patient-centered, interdisciplinary care
- Multi-dimensional assessment and non-pharmacologic prescription
- Home planning/informal network
- Medical review using real-time information technology tools

Improved Mood Positive Expectations

Reduced Impairment

Decreased Iatrogenic Risk Factors

Improved Mood Positive Expectations

Reduced Impairment

Decreased Iatrogenic Risk Factors

Nursing assessment/patient reported information in the electronic health record.
The Challenge - How do we Disseminate Acute Care for Elders to All of our Older Patients?

Simplified Care for the Patient
- Simple & easy to use
- Smooth transitions coordinated care
- Complex, fragmented episodic care experience
- All patients, same care, same way
- Different services for different needs/groups
- Care designed around patient needs
- Rapid implementation of different care delivery models

Rapid Adopter
- Leading edge health care
- Best care everywhere
- Rapid adopter of best practices / services
- Best practices partially applied

Designed for You
- Best care everywhere
- Rapid adopter of best practices / services
- Best practices partially applied
- Leading edge health care

Implementation of high quality, simple care
Designing different care delivery models facilitates simplified care based on patient needs and characteristics
ACE Tracker as “a checklist”:

- Simple, brief, and to the point.
- Information comes from daily nursing assessment/interaction with the patient.
- Information is pulled from the EHR (Cerner/Epic).
- Short enough to fit on a single page.
- Step by step check for common conditions.
- Allows clinicians to assess multiple fields, which are too complex for them to carry out reliably from memory alone.

ACE Tracker software to identify vulnerable elders:

Table 1. Example of Printout from ACE Tracker Summarizing Risk Factor for Patients Age 65 or Older on a Hospital Unit

ACE Tracker disseminated to all hospitalized older patients.
Processes of Care for Older Patients in 14 Aurora Health Care Hospitals:

Measured by automated snapshot assessment of outcomes in the electronic health record.

Physical therapy: March 06: 1542/2911; 1665/2563.
Scaling Up: Successful Models

- ACE units at two hospitals in Milwaukee.
- Acute Care for Elders programs at 12 of 15 medical centers.
- Total of 44 medical surgical units within Aurora (one at Memorial Health Center- Medford, WI) practicing Acute Care for Elders model.
- “e-Geriatricians” join interdisciplinary teams for scheduled teleconferences at 8 remote/rural sites.
- ACE Tracker software integrates the model of care into the system-wide electronic health record.
Lessons Learned in Scaling Up Successful Models:

- Real-time, point of care information can be helpful to identify vulnerable older patients.
- Information collected should be actionable.
- Checklists can be integrated into the workflow of the health professionals.
- The tools can be neutral to the patients’ disease and designed to support patient safety.
- Patient Reported Outcomes in ACE Tracker:
  - Patient’s understanding of their illness and
  - Caregiver strain & readiness for discharge.
Thank you!

George and “Sweet Potato”