Development of a Clinical Decision Support System (CDSS) for Chronic Pain in Primary Care

McMaster Family Health Team

October 16, 2012

The Challenge

I think I would say one of the most challenging things is dealing with the <u>suffering part of the chronic pain.</u> And there's some kind of relationship with the patient where they feel like I have pain you have the medications that can control my pain, so you're the, if I can't get medications from you, you are a barrier to me relieving my suffering. And you get into a real negative relationship with the patient if you sort of allow that to sort of center and occur in the encounter. [FG2: P3; 83-92]

Our Proposed Solution

- Clinical Decision Support System (CDSS) that can provide evidence-based guidance regarding management of chronic pain
  - Current focus is low back pain and NeP
- Inclusion of personal health record 'app' where patients can record information related to pain management

Why CDSSs Typically Fail*

- Completeness and accuracy of evidence used
- CDSS needs to be aligned with organization's goals
- Clinicians do not agree on how prescriptive CDSS applications should be
- Clinicians beliefs regarding the value of guidelines or CDSSs
- **Not well integrated into workflow**; further challenges are lack of standards related to workflow

*__Taken from__: Eichner J and Das M. *Challenges and Barriers to Clinical Decision Support (CDS) Design and Implementation Experienced in the Agency for Healthcare Research and Quality CDS Demonstrations*.2010. AHRQ National Resource Center for Health Information Technology

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Hypothesis

A process of systematic consultation, feedback and process analysis with all types of proposed CDSS users (physicians, allied health and patients) will result in a tool aimed at improving evidence-based quality of care, _with high usability and satisfaction among users_.

Our Setting: McMaster Family Health Team

- 2 clinics (McMaster Family Practice and Stonechurch Family Health Centre) located in Hamilton, Ontario

- Approximately 30,000 rostered patients, 30 family physicians, 10 nurse practitioners, 2 occupational therapists, 3 pharmacists, 2 dieticians, 6 mental health therapists, as well as consulting psychiatrists and other specialists

- Recent hiring of System Navigator

- About 35 new family physicians graduate from the FHT yearly, and 70 are based in the clinics at any given time

Research Questions

- What are the needs of both interprofessional primary care clinicians, and patients with chronic and neuropathic pain, for function and format of a CDSS?

- What are the barriers and facilitators for the effective implementation of a CDSS for pain management?

- How acceptable and usable is a CDSS for an interprofessional primary care team and for patients after systematic development involving multiple stakeholders?

- What are the perceived barriers and facilitators for using the developed CDSS in routine clinical care?
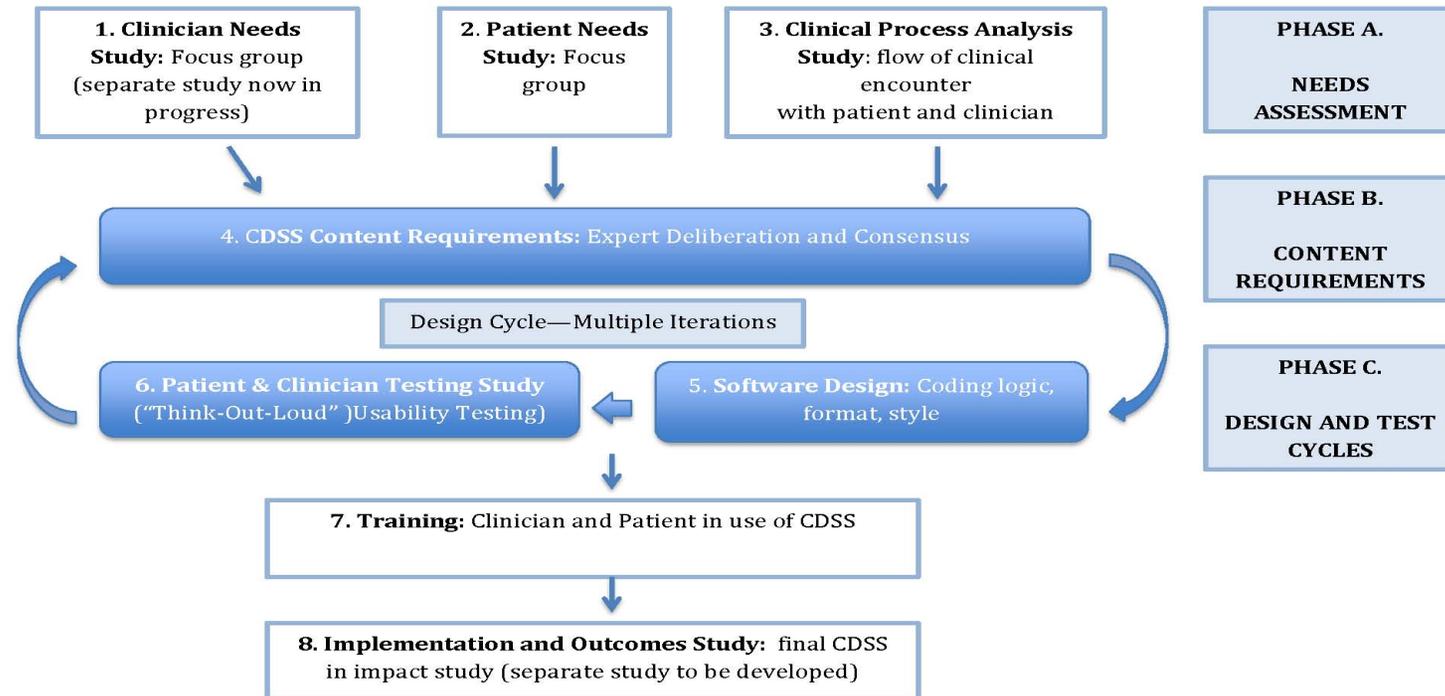
Study Co-Investigators

- Martha Bauer OT (clinician in pain care, McMaster Family Health Team),

- Norm Buckley MD, FRCP (Director, Michael G Degroote National Pain Centre):

- Lisa Dolovich PharmD, MSc (Associate Professor and research director Department of Family Medicine): Interest in e-health technology, community-based health promotion, quality assurance, interprofessional models of care

- Ron Goeree PhD (Clinical Epidemiology and Biostatistics, McMaster):

- Dale Guenter MD, MPH, FCFP (PI, Associate Professor and Co-Director of McMaster Family Practice): Clinical interest in HIV and chronic pain care; experience in community-based research, mixed methods and quality assurance

- Dwight Moulin MD, FRCP (Director NepDat Project):

- Inge Schabort (Family Physician, McMaster Family Health Team):

- Paul Taenzer PhD (Psychologist; part of low back pain guideline group; knowledge transfer)

- Khaled Hassanein PhD (E-health; DeGroote School of Business)

- Joseph Tan PhD (E-health; DeGroote School of Business)

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Linked EMR and PHR Systems
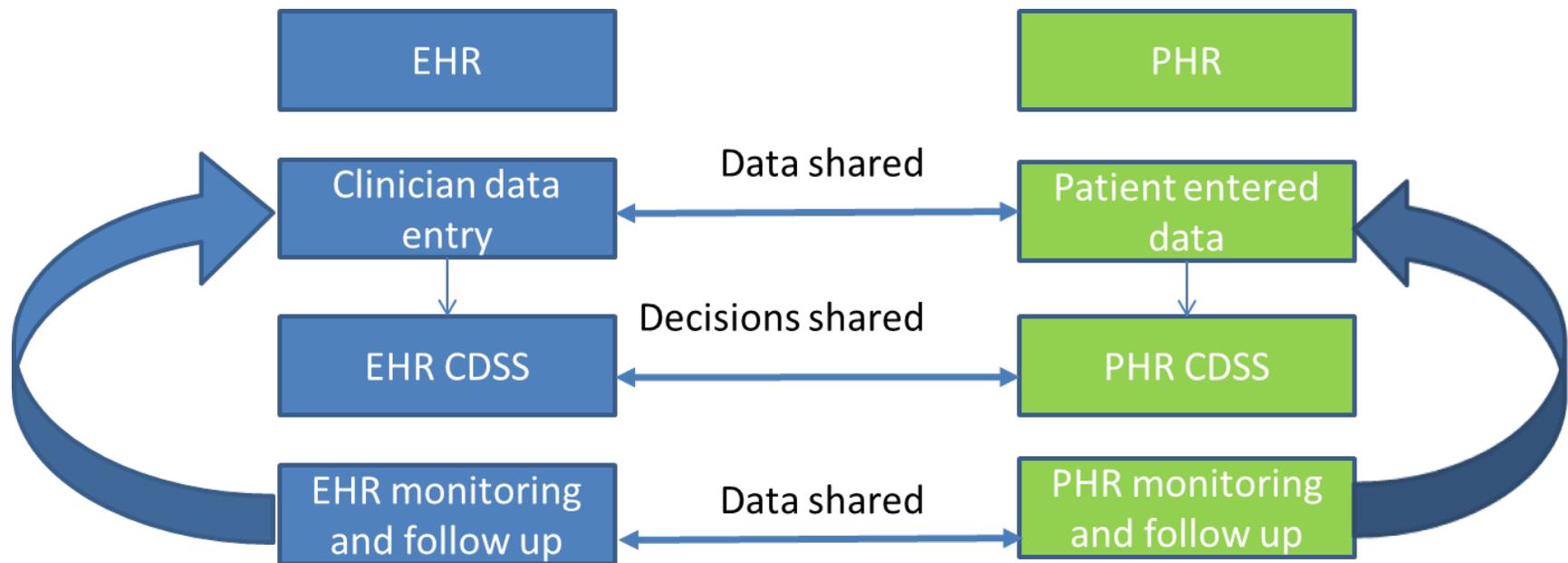
CDSS Development Process

Development Process for
Computerized Clinical Decision Support System (CDSS)

1. Clinician Needs Study: Focus group (separate study now in progress)	**2. Patient Needs Study:** Focus group	**3. Clinical Process Analysis Study:** flow of clinical encounter with patient and clinician	**PHASE A.** **NEEDS ASSESSMENT**

4. CDSS Content Requirements: Expert Deliberation and Consensus

PHASE B. **CONTENT REQUIREMENTS**

Design Cycle—Multiple Iterations

6. Patient & Clinician Testing Study ("Think-Out-Loud")Usability Testing)

5. Software Design: Coding logic, format, style

PHASE C. **DESIGN AND TEST CYCLES**

7. Training: Clinician and Patient in use of CDSS

8. Implementation and Outcomes Study: final CDSS in impact study (separate study to be developed)

CDSS Features

- Layout
- Data sharing
- Tools
- Perceived benefits
- Expected challenges
- General CDSS comments

CDSS Features: Expected Challenges

- Will be difficult to keep updated and current
- CDSS may not be used as much if it only examines a few times of pain and excludes other types such as osteoarthritis, soft tissue injuries, etc..
- How will a provider know that there is a tool on the go for a patient
- Need to know where to find CDSS tool in the EMR
- How useful will CDSS tool be for clinicians (i.e. nurse practitioners) who won't be prescribing most relevant medications for chronic pain patients
- If it's a really huge tool, no one will complete it – has to be workable and usable in a time-limited interaction with a patient
- Will become cumbersome if information that you enter is not populated in other relevant areas

CDSS: Perceived Benefits

- Will help maintain/improve continuity of care for patients with pain as CDSS will hopefully provide quick synopsis of the patient
- May help provide a 'backbone' when you feel like caving – especially with use of medication contract
- CDSS may help patients know what to expect at a visit as they may hear repetition of questions at each visit; will get to understand how chronic pain is treated
- CDSS will be able to provide patient education resources for patients
- Improved confidence for health care providers as will have an evidence-based guide for chronic pain treatment
- Helpful for learners as will have access to patient history related to chronic pain

CDSS: Perceived Benefits

But I think indirectly I think you can improve the confidence of the providers by having this. And I don't mean oh because you're giving them, you're reminding them what to ask. I think it's because it reassures them they haven't missed something. That's how you always feel with; like I have I missed something here? Like why is it not working? You know why are things not working? [FG4: P2; 507-510]

Your Experiences

❑ What challenges do you experience when working with patients with chronic pain?

❑ What features who help make a CDSS appealing to you?

❑ What tools related to pain have you used that you think should be included in the CDSS?

- Function-related