GLIDES Year 1-3: Back Pain CDS Implementation

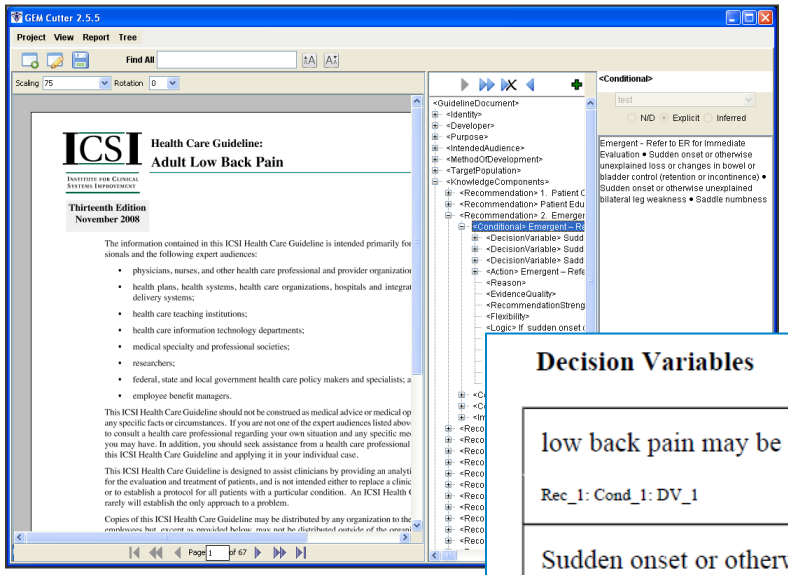
ADOPTION LESSONS LEARNED

GEISINGER
HEALTH SYSTEM
REDEFINING BOUNDARIES®

GLIDES CDS Implementation Activities

- Year 1
  - Codified the Institute of Clinical Systems Improvement (ICSI) guidelines on primary care management for back pain using GEM
  - Designed the electronic questionnaire and CDS tool using the coded guidelines
- Year 2
  - Translated the coded guidelines into rules for real-time application of back pain management recommendations in the CDS based on the patient-reported data
  - Developed a protocol to audio record the patient-provider conversation occurring during primary care back pain visits to determine if the content was higher in quality for patients seeing the low back pain CDS versus those who did not
  - Designed, configured, tested, and commenced deployment of the audio-recording system
- Year 3
  - Completed the deployment of the audio-recording system
  - Transcribed and coded the completed recordings
  - Evaluated the CDS implementation and created lessons learned for dissemination

Examples of Codified ICSI Guideline



Decision Variables

low back pain may be related to a possible work-related injury or workers' compensation claim

Rec_1: Cond_1: DV_1

Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)

Rec_2: Cond_3: DV_3

Recommendation

2. Emergent or Urgent?

Conditional: Emergent – Refer to ER for Immediate Evaluation • Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence) • Sudden onset or otherwise unexplained bilateral leg weakness • Saddle numbness {Rec_2:Cond_ 3 }

IF

Decidable	Vocab
Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)	
Sudden onset or otherwise unexplained bilateral leg weakness	
Saddle numbness	

Translation of Coded Guidelines into Rules

Decision Variables

low back pain may be related to a possible work-related injury or workers' compensation claim Rec_1: Cond_1: DV_1
Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence) Rec_2: Cond_3: DV_3

Recommendation

2. Emergent or Urgent?

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IF	Decidable	Vocab
Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)		
Sudden onset or otherwise unexplained bilateral leg weakness		
Saddle numbness		

F13 qCurEpisodeLT6Wks

	A	B	C	D	E	F	I	J	K	L	M	R	T
1	GUIDELINE CONTENT			VARIABLE								CONCEPT SEVERITY	ORDER PANEL MESSAGES
2	ORDER	CONCEPT ID	TEXT	TYPE	NAME	CONDITIONS	SET	Field Value	PRIORITY WITHIN	BINARY #	SUM		GUIDELINE REC
9			Adult)	Q	qIntensity	qIntensitySev	B		7	262144			
10		4	new onset (less than 6 wks) of progressive pain with distal (below the knee) numbness of leg(s) (ICSI Adult)	Q	qCurEpisode	qCurEpisodeLT6Wks	B	≤ 1	2	1	7	2.5	• Spine Rehab or PT is rec for new onset progressive LBP with below the knee leg numbness.
11				Q	IntensityChange	IntensityChangeProg	B	≥ 3	1	2			
12	Appt w/i 24 hrs			Q	qNeuroNumb	qNeuroNumbDistal	B	1 or 2	1	4			
													• Spine Rehab or PT is rec for new

Integration with eLowBackPain CDS

- GLIDES has been integrated into an application called **eLowBackPain (eLBP)**, which has received funding outside of GLIDES
- eLBP pilot in 5 Family Practice primary care departments
- eLBP is an RCT, **web-based** care model tool that integrates patient-reported data collection and treatment goals into primary care management of LBP and further fosters a shared discussion between the patient and provider
- eLBP consists of:
  - Patient back pain questionnaire
  - Provider clinical decision support (CDS) tool
  - After visit summary letter
  - Follow-up assessments to measure satisfaction and outcomes at 3 months

Outside Funded Work

- The following tasks and activities are supported by outside funding and do not rely on funding from GLIDES:
  - RCT study design of 300 patients in 5 Geisinger clinic sites
  - Development of study database for real-time use and data updates
  - Design and development of electronic patient questionnaire
  - Design and development of CDS web tool and content
  - Programming and testing of study tools
  - Mailed after-visit-summary letter to provide patients with tailored information of their back pain visit
  - Patient satisfaction interview to assess patients' satisfaction with the care they received for their back pain visit
  - 3 month follow-up interview to assess patients' pain, functioning, and quality of life after the initial back pain visit

GLIDES Audio Protocol: Geisinger Setting

- Primary care back pain visits
- Integration with eLowBackPain application
- Electronic health record (EHR)
- Pilot in one Family Practice department
- 3 of 6 clinical providers agreed to pilot recording

Patient Consent to GLIDES

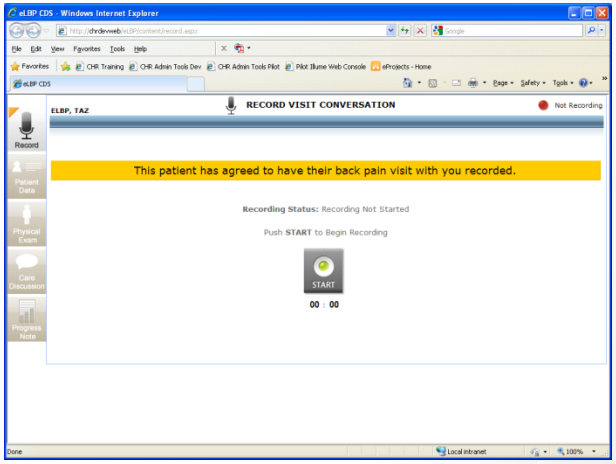
- Only patients who consented and completed eLBP could participate in GLIDES
- Both intervention **and** usual care patients were included
- **Patient consent** to audio-recording was obtained at the completion of the web-based back pain questionnaire

Provider Consent to GLIDES

- **Provider consent** to audio-recording was obtained prior to implementation
- Blanket approval; Provider does not have to consent each time

GLIDES Audio Recording Protocol

- Patient-provider dialogue was **audio-recorded** using an omni-microphone through a web-application for consented patients and providers
- The audio recordings were **evaluated** using the Roter Interaction Analysis System (RIAS) to determine if the dialogue is higher in quality for patients who received the intervention vs. those who received usual care



Patient Data from GLIDES Pilot Site

Study Period: 3/21/2012-3/31/2013

Study Downtime due to IT Error: 4/9/2012-9/9/2012

- 52 chief complaints of “back pain” (indicated by nurse in EHR)
- **112** back pain visits (indicated by nurse in eLBP tool)
  - eLBP Participation:
    - **61** patients consented to eLBP; 51 declined eLBP
      - **35** were in the intervention arm and **26** in the usual care arm
  - GLIDES Participation:
    - **15** patients consented to GLIDES; 5 declined GLIDES
      - **10** were in the intervention arm and **5** in the usual care arm

Provider Participation & Training at GLIDES Pilot Site

- eLBP was enabled for 6 of 6 clinical providers, but not all used the tool
  - 3 PA-Cs
  - 1 DO
  - 2 MDs
- GLIDES was enabled for 3 of 6 clinical providers, but not all used the tool
  - 1 PA-C
  - 1 DO
  - 1 MD
- All providers received onsite training and a training manual
- Additional trainings were provided throughout implementation based on use rate

Provider Data from GLIDES Pilot Site

- eLBP Provider Participation (intervention only)
  - **6** used tool (**35%**); 27 did not use tool; 2 unsuccessful tool loads
    - Use was defined as a page change off of the initial loaded page in the CDS tool
- GLIDES Provider Participation (intervention and usual care)
  - **3** used tool (**13%**); 9 did not use tool; 3 unsuccessful tool loads
    - Use was defined as pushing the “Record” button in the CDS tool
  - **2** successful recordings obtained

Lessons Learned

- GLIDES enrollment was impacted due to eLBP tool
- Observation and qualitative feedback obtained on GLIDES and eLBP are presented as Lessons Learned:
  - Technical
  - Patient Workflow
  - Provider Workflow

Lessons Learned: Technical

- **Advancements**
  - Real-time use of EHR data allows for capture of both scheduled in advance patients and scheduled the same day patients
  - Autolaunching of application from EHR improves exposure and use by nurse and provider
  - Technology can be used to trigger an audio recording software to record and transmit audio files to a database
  - Recording protocol requires minimal work of a user to start and stop
- **Improvements/Considerations**
  - ActiveX control needing to be 'signed' was the source of the technical issue in the recording protocol that arose at the start of implementation
  - Requires system IT departments to approve and modify existing PC classifications

Lessons Learned: Patient Workflow

- **Advancements**
  - Nurse capture of accurate reason for visit is key to allowing more patients the opportunity
  - Patients are willing to have their visit audio-recorded
- **Improvements/Considerations**
  - Consider multiple entry modes (e.g. patient portal, ipads in the waiting room, exam room) for completion of the questionnaire
    - Pros: Limit impact on provider schedules; prevent disruption; ensure more completed questionnaires
    - Cons: Some options are not ideal for patients scheduling the day of a scheduled visit; special needs patients
  - Streamline questionnaire to collect the minimally necessary data
  - A primary care visit is very rarely for one condition/issue so there is a need to account for multiple reasons of visit

Lessons Learned: Provider Workflow

- **Advancements**
  - Saves time by collecting relevant patient-reported data on back pain condition for the provider
  - Displays data in one central location rather than disparate sections in an EHR
- **Improvements/Considerations**
  - Create a minimally viable tool rather than a comprehensive tool
  - The decision support interrupts and impacts a providers practice routine
  - Rather than nuanced recommendations and decision support, build in general guideline practice or education
  - Provider wants to feel more like a provider rather than a “data processing technician”

Takeaways

- Workflow is key because primary care providers have limited time with a patient
  - Patient-collected data saves time from a provider
  - Location of questionnaire completion is key to not causing delays
  - Provider tool should be minimally viable and not so cumbersome
- A tool developed for primary care needs to account for multiple conditions rather than one specific condition
- Specialists are more easily inclined to using a condition specific tool

Next Steps

- System-level discussion on whether tool should be refined for primary care or integrated into specialty care with necessary refinements
- Determine if there is a strong system interest in obtaining patient-provider audio recordings to measure and educate on shared decision making
- Improve technical method for audio recording visits