



# **CDS In Community Hospitals**

## **Fieldwork Manual**



Date/Time:  
 Site/Unit:  
 Qualifications/Role:  
 Years at institution:

## Clinical Decision Support & Knowledge Management Assessment Tool

### Site Inventory

<b>Hospital characteristics</b>	<b>Value</b>	
Hospital Type (not-for-profit; for-profit; gov't; VA)		
Number staffed in-patient beds		
Annual in-patient discharges		
Annual Emergency Department visits		
Clinical service profile (adult, peds, ICU, OB)		
Hospital Organizational structure (stand alone; integrated delivery system; multi-hospital)		
<b>CPOE Availability</b>		
Maker of CPOE system		
Time since first in-patient go-live (yrs:months)		
Duration of implementation period (yrs:months)		
<b>Hospital Locations with CPOE (% of units)</b>	<b>Have?</b>	<b>% implemented</b>
ICUs		
General Nursing units		
Emergency Department		
Ambulatory clinics		
Overall % orders entered by provider responsible for decision		
<b>Order Entry System Attributes</b>		
Medications/Therapeutics i.e., IV Medications, Blood products, Chemotherapy, Parental nutrition		
Diagnostic tests (i.e., Pathology laboratory, Radiology)		
Clinical consults/referrals (i.e., Specialty in-patient consultations, out-patient, community nursing)		
Patient Care or Ancillary Therapies (i.e., Nursing, Dietary, PT, OT, RT)		
<b>Coded clinical data availability</b>		
Medications		
Clinical laboratory tests results		
Problem list diagnosis		
Allergies		
Clinical procedures (e.g., health maintenance)		
Vital signs		
Surgical history		
Advanced Directives		

<b>Clinical Decision Support Types Available</b>	<b># years live</b>	<b>CDS supplier</b>	<b># meds/tests included</b>
Medication ordering			
Subsequent or Corollary orders (e.g., order ACE inhibitors prompts for serum creatinine level)			
Context-sensitive information retrieval (e.g., Info based on patient or drug-specific information)			
Patient-specific relevant data displays (e.g., potassium levels when ordering digoxin)			
Dose adjustments based on Renal impairment, Age (either pediatrics or elderly), weight, height			
Automatic Formulary checking			
Order by indication (e.g., enter hypertension, get suggested medications)			
Drug-drug interaction checking			
Drug-allergy interaction checking by specific drug or by drug family?			
Display of medication cost			
Alternative/substitute Medication suggestions			
Order sets			
Hospital-wide			
Departmental			
Personal			
Alerts on RN interventions			
<b>Diagnostic test ordering</b>			
Duplicate order checking			
Display past results before ordering new test			
Charge display			
Preventive care reminders			
Automatic order termination			

<b>CPOE-related applications</b>	<b># years live</b>	<b># units live</b>
e-Medication Administration Record		
Barcode Medication Administration		
e-Prescribing (communication to the external pharmacy)		
Clinical results review		
Nurse charting systems		
Scheduling		

<b>CDS-related Personnel support</b>		
Chief Medical Informatics/Information Officer		
Chief Nursing Informatics Officer		
Hospitalists	<b>24 hr coverage?</b>	<b>Total #</b>

<b>CDS-related Organizational support</b>	<b>Have?</b>	<b>Mtg freq.</b>
Multi-disciplinary CPOE review committee		
Multi-disciplinary Clinical Decision Support review committee		
Organization's By-laws modified because of CPOE/ CDS		
IT support in clinical areas, how available		
CIS/CDS measures regularly reviewed by Execs	<b>#:</b>	<b>Interval:</b>
Organizational policy allows sharing of CDS content		

<b>Knowledge Management Features</b>	<b># years live</b>	
Repository of clinical content		
Regular review of clinical content		
Automatic reminders that content review date is approaching		
Regular reports of clinical content usage available		
Automatic notifications when clinical guidelines underlying CDS change		
System in place to "learn" from patient database		

<b>CDS-related measurement system</b>	<b># years live</b>	<b>Value?</b>
CIS/CDS measures regularly reported		
CDS override rate		
Percentage of system uptime		
Mean response time		
Total number and percentage of order sets that are actually used		
Percentage of all orders whose default values are modified		
Percentage of all (and total number of each) clinical alert(s) that actually fire		
Percentage of orders for medications for which the dose exceeds recommended dose ranges		
Percentage of orders for medications to which an allergy has been documented		
Percentage of orders for medications that pose a known dangerous interaction		
Percentage of all orders that are entered as "miscellaneous"		

## Schedule for each site visit:

**Preparation:** Results from **site inventory** will generate a list CDS features to be observed and confirmed by fieldworkers

### Day one:

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Each fieldworker will:

- Use observation guide (with results of site inventory)
- Use informal interview questions opportunistically to gather additional information about CDS
- Write notes on observations and discussions in a notepad
- Administer field survey using “CDS Field survey”
- Transcribe your notes at the end of the day

Two team members will interview “key informants” at the site using Formal Interview Guide

Team meeting at end of day

- Compile individual findings into a preliminary description of the site
- Identify targeted observation/informal interview goals for day two. Day two’s goal is to “fill in the blanks,” confirm/refute day one findings
- Create a new observation guide table for day two (if necessary)
- Create new informal interview questions for day two (if necessary)
- Debrief on field survey administration

### Day two:

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Each fieldworker will:

- Use revised observation and informal interview guides
- Write notes on observations and informal interviews in a notepad
- Administer field survey using “CDS Field survey”
- Type up your notes at the end of the day

Two team members will complete formal interviews with key informants

Team meeting at end of day:

- Compile individual findings to revise site description
- Debrief about process, suggest changes for next site visit

## CDS Observation Guide—Day One

**DAY ONE:**

*Use results of the site inventory as a checklist:*

FEATURE	OBSERVED (tally)	DISCUSSED (tally)	COMMENTS
Drug-drug interactions			
Order sets			



## CDS Observation Guide—Day One DISCUSSION GUIDE

### Discussion question guides:

#### ■ I noticed you were using X.

- Can you tell me what you think of this feature?
- Is this the way you usually use it?
- How does it help you do your work?
- What would you like to change about how this feature works?
- Are there things that make it difficult for you to use this?

#### ■ I've been told that Y is available at this hospital but I haven't seen it used (much/by you, by residents, etc).

- Is it a feature that you use? (Why/why not).
- How does it help you do your work?
- Are there others who use this more commonly?
- What would you like to change to make this feature more useful?
- Are there things that make it difficult for you to use this?

## TEAM MEETING GUIDE

### END OF DAY ONE—COMPARE NOTES, MAKE “TO DO” LIST FOR OBSERVATIONS:

- Come up with tentative description of day one findings.

- Create a new table to fill out.

- Divide up into assignments—find out more about specific users/features/barriers/locations...

- Goals for meeting:

- Notes





## CDS Observation Guide—Day Two DISCUSSION GUIDE

### Discussion question guides:

#### ■ I noticed you were using X.

- Can you tell me what you think of this feature?
- Is this the way you usually use it?
- How does it help you do your work?
- What would you like to change about how this feature works?
- Are there things that make it difficult for you to use this?

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## CDS Formal Interview Guide

### Culture:

- What seems to be the motivation for CDS?
- What are the cultural barriers and facilitators here?
- How have attitudes towards CDS shifted over the years?

### Control, autonomy, trust:

- What is the organizational structure (either formal or informal) that relates the quality and IT groups?
- How do they relate to clinical staff?
- What are the clinical priorities?
- Who sets the clinical priorities?
- How stable is this staff?
- Who is on CDS committees and why?
- How do CDS-related committees interact with one another?
- How do the committees communicate with users?
- How have they changed over the years?
- In your estimation, who holds the power here?

### Cognition, emotions:

- What are the barriers and facilitators to use?
- What is the training for CDS like?
- How do clinicians keep up to date about CDS?
- How do people feel about CDS?

### Content:

- Where does the organization get its clinical decision support logic from?
- How customized is the CDS and who does it?
- How often is the clinical content reviewed?
- What would motivate this hospital to share its content with others?
- What was implemented when and why?

### Human-computer interface:

- What are the issues surrounding presentation of CDS to clinicians?



## CDS Field Survey

(Sample Questions—Final questions to be determined)

Could you take a few minutes to talk with me about your views concerning CPOE and the decision support it includes? I'm defining decision support very broadly to include either information you look for or information automatically given to you that helps you make decisions about patient care—things like reminders, order sets, alerts, and information resources.

How much do you use CPOE?

1

How many years have you worked here?

2

How much does CDS technology add to your (or the organization's) ability to provide high quality patient care?

NOT AT ALL

 1 2 3 4 5

IMMEASURABLY

3

In your view, is the CDS oversight committee effective?

NOT AT ALL

 1 2 3 4 5

HIGHLY EFFECTIVE

4

How involved have you (or your colleagues) been in the CDS knowledge management activities?

NOT AT ALL

 1 2 3 4 5

INTIMATELY INVOLVED

5

How smoothly does it go when they implement new CDS interventions in your organization?

NOT VERY SMOOTHLY

 1 2 3 4 5

VERY SMOOTH

6

Is the CDS provided in your CDS system worth the extra time and effort it takes?

NOT WORTHWHILE

 1 2 3 4 5

EXTREMELY WORTHWHILE

7

What could make it better?

8

(Additional question probes designed to uncover unique aspects of each organization will be added)

9