

User Perceptions of a Corrections Electronic Health Record

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Departments of corrections and electronic health records

KyDOC Medical

- 12 state operated facilities
- 2 contracted facilities
- Diverse patient population, facility size, staffing mix
- Designated medical facility for unhealthy
- Ambulatory (and some specialty) services
- Contracted pharmacy, lab, and other services

KyDOC & EHR

- Leadership
- Business case/decision
- Expertise
- A process
- Staff participation
- Flexibility

Office of the National Coordinator

- Created in 2004 by Executive order
- Dept. of Health and Human Services (DHHS)
- Mandated by HITECH Act of 2009
- Coordinates nationwide efforts to adopt and meaningfully use HIT
- Advances purpose of EHRs

Certification Commission for Healthcare Information Technology

- Private non-profit group
- Funded in 2005 by DHHS
- Developed a set of standards for EHRs
- Defined meaningful use
- Set standards for interoperability among systems
- Features & functions
- Incentive dollars

Kentucky meeting federal
“push” to meaningfully use
hit?

Study Purpose

- What is meaningful use for medical staff (users)?
- Does KyDOC have a system that users find meaningful?
- Are users satisfied with the KyDOC EHR?
- What is the relationship between satisfaction and meaningful use (usability)?
- How their EHR can be improved?

Methods

- Protocol approved by KyDOC and University of Kentucky
- Developed draft instrument to measure perceptions of usability and satisfaction
- Piloted and revised instrument
- Administered survey online via SurveyMonkey
- Participation was anonymous

What did we measure?

- Satisfaction
- Perception of usability
- Staff position
- Computer literacy
- Length of employment
- Experience using EHR
- Experience with other EHRs

Instrument Scale

Satisfaction (14 items)



Unsatisfied
(1)

Very satisfied
(4)

Not usable
(1)

Very usable
(4)



Perceptions of Usability (13 items)

Results – demographics

- 50% response rate

Position	Identified Users	Number of Respondents	Percent Response Rate	Category as Percent of Sample
Nurse administrators	12	9	75	5
Primary care ¹	47	24	51	14
Dentists	13	9	69	5
Nurses	167	80	48	47
Psychologists	29	13	45	8
All other staff	77	34	44	20
Total	345	169	49	100

¹ Primary care (ARNP, PA, MD, DO, OD)

Mean Satisfaction and Usability Scores¹

	N	Min	Max	Mean	S.D.
Satisfaction score	167	1.17	4.00	3.00	.58
Usability score	173	1.54	4.00	2.80	.45
Total Perception Score	167	1.50	4.00	2.89	.45

¹ Satisfaction and usability scores are averages of 14 satisfaction items and 13 usability items and the total perception score is mean satisfaction + usability scores divided by 2.

Satisfaction with EHR Features

Items	VD	D	S	VS	Mean
Vital signs options	0	15	75	44	3.21
Document episodic visits	1	11	78	36	3.17
Document chronic care visits	0	13	59	27	3.12
Vital signs flow sheet	5	12	79	34	3.08
Structured data into clinical notes	4	20	74	39	3.07
Create medication orders	3	15	71	27	3.04
Create lab orders	1	12	51	17	3.02
Reports for medication orders	5	16	62	24	2.98
Document multiple chronic disease states	5	19	43	21	2.91
<i>Sign-off on lab results.</i>	5	12	41	13	2.86
<i>Lab reports</i>	6	15	42	12	2.77
<i>Track clinical notes</i>	10	25	34	18	2.69
<i>System alerts for panic lab values.</i>	10	13	41	10	2.68
<i>Track health maintenance</i>	14	41	52	25	2.67

Perception of Usability

Items	SD	D	A	SA	Mean
Electronic records are preferable	8	12	76	66	3.23
EHR has improved quality of care	2	20	101	42	3.11
Clinical notes enhance documentation	4	13	108	39	3.11
EHR enhances productivity	6	23	89	46	3.07
Help desk resolves my questions	14	23	88	36	2.90
EHR has not improved ability to document	11	33	82	38	2.89
Electronic lab results enhance productivity	19	18	89	35	2.87
Ability to customize based on preferences	8	36	91	28	2.84
<i>Features are introduced effectively</i>	8	52	84	23	2.73
<i>EHR has not decreased the use of paper</i>	29	46	58	32	2.56
<i>Users are not updated about new features timely</i>	17	58	75	14	2.52
<i>EHR has not decreased duplication</i>	16	64	63	17	2.50
<i>There should be more training</i>	41	77	38	5	2.04

Mean Satisfaction and Usability Scores by Position

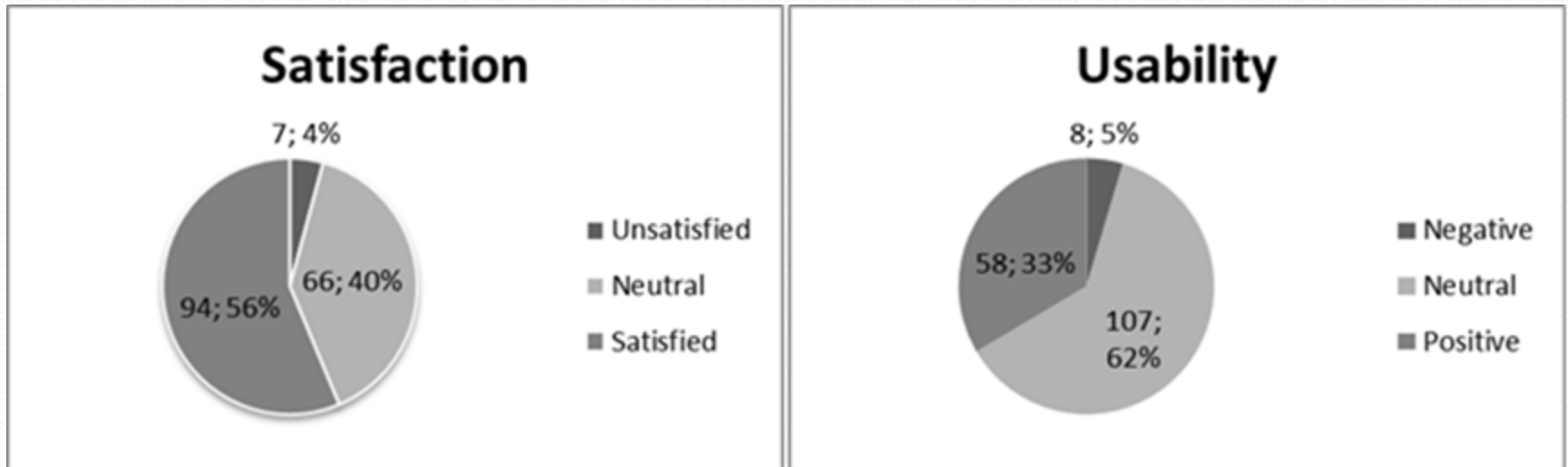
Position	Satisfaction			Usability		
	N	Mean	95% confidence interval	N	Mean	95% confidence interval
Nurse Administrators	9	2.78	(2.63 - 2.91)	9	2.60	(2.20 - 3.00)
Primary care	24	2.95	(2.74 - 3.16)	24	2.91	(2.74 - 3.09)
Dentists	8	2.78	(2.19 - 3.37)	9	2.48	(2.13 - 2.84)
Nurses	79	3.05	(2.92 - 3.17)	80	2.79	(2.69 - 2.89)
Psychologists	11	3.54	(3.22 - 3.86)	13	3.20	(2.96 - 3.44)
All other staff	33	2.90	(2.67 - 3.13)	34	2.75	(2.62 - 2.88)
Total	164	3.00	(2.92 - 3.09)	169	2.80	(2.74 - 2.87)

Discussion

- Significant
 - Staff position
 - Relationship between satisfaction and usability
- No significance
 - Computer literacy
 - Length of employment
 - Experience using EHR
 - Experience with other EHRs

Discussion (continued)

- Satisfied > Usability



- A need for further development ...

Suggestions from users...

- Order management system
- Usable reports (clinician & administrative)
- An advance alert/reminder system
- Electronic medication administration
- Features specific to specialties

Conclusions

- ONC has defined more clearly what meaningful use is
- Overall clinic staff ideas coincide with meaningful use
- Meaningful use guidelines helpful for selection
- Differences across clinic staff
- Expectations \neq Reality or past experience
- Adoption is complicated
- Findings are cautiously positive

Complete paper see:

Gates, ML & Roeder, PW. (Spring 2011). A case-study of user assessment of a corrections electronic health record. Perspectives in Health Information Management.