

Integration of Electronic Health Record System



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Purpose



- The purpose of this study is to evaluate nurse's perspectives on the use of a newly implemented Cerner system across a University hospital.
- With nationwide continuing reports of a high prevalence of care errors and healthcare associated infections, there is a critical need to identify outcomes associated with implementing Cerner Electronic
- Health Record (EHR) system including nurse's perspectives on Cerner technology implementation.

Overview



- These findings are urgent priorities for hospital policy makers, clinical managers, and the University hospital organization.

If healthcare services are to meet the patient needs, provide cost-effective patient-centered care, yield high quality outcomes, and retain expert nursing staff, effective communication and shared clinical patient information is paramount.

EHR



- Several studies explored the association of EHR use with the care process and patient outcomes.
- Experts found an association between EHRs and efficiency in health care delivery.
- CPOE system was associated with reducing serious medication errors (55%) in a hospital setting. A follow-up study found that adding a CDS system to a CPOE system, yielded 86% reduction in medication errors.
- A recent study found that computerization reduced error rate from 18.2% to 8.2%.

EHR



- Moreover, adding CDS use resulted in a 32% reduction in the number of days antibiotics were prescribed outside recommended dosage range.
- Researchers found that hospitals using computerized records, order entry, CDS, and computerized test results were associated with lower mortality rates, fewer complications, and lower costs.

Method



- Cross sectional prospective design was used for this study.
- Data were collected for wave one after 6 to 8 months of the initial implementation of the Cerner system and 12 to 14 months for wave two . Nurses on every unit in the hospital were recruited to complete the two pages survey on all shifts.
- Candy and pens were provided to nurses to help increase participation.
- The survey has 44 items and uses Likert scale questions. 358 and 101 nurse completed the survey for wave one and wave two, with a response rate of around 79% and 25%.

Findings



- Of 358 respondents, the average worked hours per week was 36.8 (SD 8.7) hours.
- Most of the participating nurses worked full time (83.7%). Fifty five percent of the nurses worked day shift.
- In regard to computer use experience, the average score was 5.67 (SD .88) on a scale from 1 for “never used it” to 7 for “expert user”.
- Most of the answers were in the middle point on the Likert scales at score of 5.

Findings



- Nurses reported an average score of 3.75 (SD 1.64) for “Cerner improves my productivity” on a scale from 1 for “never” to 7 for “always”.
- And an average score of 4.56 (SD 1.36) for “Cerner reduces patient care errors”.
- The average score for “overall, I am satisfied with Cerner system” was 4.01 (SD 1.63).

Survey Scales

Scale	Number of Items	Cronbach's Alpha	Mean	(SD)
EHR clinical help scale	9	.915	53.46	15.78
EHR Critical practical functions	8	.933	46.55	13.38
Cerner and Care Outcomes	15	.777	63.07	11.51



Nurses responses after 6/8 and 12/14 Month of Implementing Cerner: (<.05 Sig.)



	Pearson's R	Sig.	Kendall's tau-b	Sig.
Exploring new features by trial and error	.103	.028	.089	.022
Tasks Can be performed in a straight forward	.096	.039	.089	.036
Help Messages on screen	.121	.010	.101	.010
To document information about your patient	.108	.021	.092	.018
What are your overall reaction to Cerner	.102	.030	.089	.027
Cerner functions as I expect it	.161	.001	.145	.000
The electronic medication administration record (eMAR) functions as I expect.	.126	.008	.116	.005
The Cerner system is reliable, it does the job..	.177	.000	.175	.000
Cerner has a negative impact on patient outcomes.	.109	.021	.095	.021
When I have a problem with Cerner, I just ask someone for help	-.103	.029	-.092	.030
Overall, Cerner saves me time...	.099	.035	.081	.051
Overall, I am satisfied with the Cerner System...	.098	.037	.087	.035

Conclusions

- After 8 months of Cerner initiation, most nurses at the were not satisfied with the system.
- After 14 months there is a great improvement in Nurse's use and satisfaction with Cerner EHR.
- Further research and surveys will be implemented to assess multiple staff perspectives and care outcomes related to the Cerner system.

