Position Paper on EHR
White paper on EHR
MSSNY's recommendations to improve EHR satisfaction : based on findings from New York Physician's survey on EHR

Introduction:

Despite the government's incentive of nearly $27 billion to digitize patient records, nearly 70% of physicians say electronic health record (EHR) systems have not been worth it.[17] While EHRs promise to improve patient safety, quality of care and efficient delivery of care; we are still waiting to see such effects. In fact, multiple surveys show dissatisfaction is growing among the physician community. There no doubt that electronic health records (EHRs) spark strong emotions in doctors and many of those emotions are negative. There is a clearly digital divide among the physician community and forces pushing for mandatory use of electronic records.

MSSNY HIT committee decided to find out the state of EHR use and views of NY state physicians to find out their satisfaction and needs.

Methods

A questionnaire with 24 questions was sent out via email to all physicians in the database of MSSNY. Questions were pertaining to Practice size, geographical location, duration of use of EHR, satisfaction, factors impacting their satisfaction, IT support, expectation from EHR etc.645 physicians responded to the survey. One of the survey questions was a free text section asking physicians to write their comments about EHR. In order to further analyze comments we did a key word search within comments section by typing "time consuming" .Another key word search was done with a key word "patient care" Many of them mentioned that EHR is mainly created for billing purposes, it does not help much to improve patient care and safety.

Statistical analysis was performed using SAS 9.4. Outcome measure was level of satisfaction among users of EHR.As we wanted to know views of physicians using EHR, physicians who are not using EHR were not included in the analysis. Satisfaction levels were divided into 3 categories (1-disappointed or very disappointed, 2-neutral, 3-satisfied or very satisfied). Satisfaction levels were compared with various predictors of EHR satisfaction using univariate logistic regression analysis. Results with p-value <0.05 were considered statistically significant.

Results:
More than 53% of physicians are disappointed or very disappointed with their EHR.
Top 3 reasons for disappointments are
1) Takes too much time (66.85%)
2) Distracts from patient care (62.92%)
3) Negative changes to workflow (43.82%)

21% physicians said they are not interested in using EHR.
Top 3 reasons for not choosing EHR are
1) Interference with doctor –patient relationship (59%)
2) Incentives and Penalties are not worth it (44%)
3) Costly (42%)

Analysis of free text section showed that 27 physicians talking about EHR interfering with patient care and workflow and 18 physicians say that EHR is more time consuming.

Results of univariate analysis: comparing physicians who are satisfied or very satisfied or neutral to physicians who are disappointed or very disappointed, are given in table 1.

Satisfaction level	Predictors for satisfaction among users of EHR	Odds Ratio Estimates	Odds Ratio Confidence Intervals	P-value
satisfied vs disappointed	EHR can e-prescribe vs does not e-prescribe	2.313	1.2-4.458	0.0122
neutral vs disappointed	EHR can e-prescribe vs does not e-prescribe	0.806	0.430 - 1.511	0.5019
satisfied vs disappointed	EHR can generate reports vs unable to generate reports	4.466	2.659-7.503	<.0001
neutral vs disappointed	EHR can generate reports vs unable to generate reports	1.671	0.976-2.861	0.0612
satisfied vs disappointed	EHR support p4p vs do not support p4p	3.825	1.935-7.562	0.0001
neutral vs disappointed	EHR support p4p vs do not support p4p	1.316	0.596-2.907	0.4971
satisfied vs disappointed	participating in p4p programs needing EHR reports vs not needing EHR reports	1.735	1.129-2.666	0.0119
neutral vs disappointed	participating in p4p programs needing EHR	0.925	0.542-1.58	0.7767

	reports vs not needing EHR reports			
satisfied vs disappointed	EHR prompts gaps in patient care vs do not prompt gaps in patient care	3.118	2.01-4.837	<.0001
neutral vs disappointed	EHR prompts gaps in patient care vs do not prompt gaps in patient care)	0.838	0.482-1.456	0.531
satisfied vs disappointed	EHR support and guide MU-2 vs do not support and guide	3.523	1.997-6.215	<.0001
neutral vs disappointed	EHR support and guide MU-2 vs do not support and guide	1.572	0.862-2.869	0.1401
satisfied vs disappointed	EHR use duration >5 years vs <1 year	4.415	1.408-13.844	0.0109
neutral vs disappointed	EHR use duration >5 years vs <1 year	1.329	0.407-4.344	0.6377
satisfied vs disappointed	EHR use duration 1-5 years vs <1 years	1.309	0.416-4.122	0.6458
neutral vs disappointed	EHR use duration 1-5 years vs <1 years	1.183	0.374-3.738	0.7748
satisfied vs disappointed	EHR type- web vs server	0.757	0.476-1.204	0.2395
neutral vs disappointed	EHR type- web vs server	1.066	0.613-1.856	0.8204
satisfied vs disappointed	EHR use-independent practice vs hospital and independent practice	1.382	0.889-2.149	0.1503
neutral vs disappointed	EHR use-independent practice vs hospital and independent practice	0.791	0.45-1.39	0.4151
satisfied vs disappointed	EHR use-hospital vs hospital and independent practice	0.382	0.186-0.785	0.0089
neutral vs disappointed	EHR use-hospital vs hospital and independent practice	0.368	0.155-0.872	0.0231
satisfied vs disappointed	IT support-IT department vs own IT service	0.498	0.256-0.971	0.0406
neutral vs disappointed	IT support-IT department vs own IT service	0.269	0.125-0.58	0.0008
satisfied vs disappointed	IT support-hired IT services vs own IT	1.023	0.496-2.113	0.9501

	service			
neutral vs disappointed	IT support-hired IT services vs own IT service	0.864	0.393-1.903	0.7174
satisfied vs disappointed	IT support-Provided by combination of IT services vs own IT service	1.441	0.692-2.998	0.3291
neutral vs disappointed	IT support-Provided by combination of IT services vs own IT service	0.703	0.299-1.653	0.4189
satisfied vs disappointed	practice type->50 physician group vs <10 or solo physician group	0.571	0.327-0.999	0.0497
neutral vs disappointed	practice type->50 physician group vs <10 or solo physician group	0.473	0.231-0.968	0.0403
satisfied vs disappointed	practice type-11-50 physician group vs <10 or solo physician group	0.688	0.399-1.186	0.1782
neutral vs disappointed	practice type-11-50 physician group vs <10 or solo physician group	0.319	0.137-0.744	0.0081

Table 1: showing results of univariate analysis comparing physicians who are satisfied or very satisfied or neutral to physicians who are disappointed or very disappointed.

Discussion:

While electronic health records are now an inherent part of health care, physicians tend to have a hard time accepting their usefulness. There are many predictors which decide physicians' acceptance and satisfaction to EHR use. Some of the predictors we found significantly associated with physician's satisfaction with use of EHR are below in the table.

Predictor of satisfaction	odds ratio	P Value
EHR can generate reports vs unable to generate reports	4.466	<.0001
EHR use duration >5 years vs <1 year	4.415	0.0109
EHR support p4p vs do not support p4p	3.825	0.0001
EHR support and guide MU-2 vs do not support and guide	3.523	<.0001
EHR prompts gaps in patient care vs do not prompt gaps in patient care	3.118	<.0001
EHR can e-prescribe vs does not e-prescribe	2.313	0.0122
participating in p4p programs, need EHR reports vs not needing EHR reports	1.735	0.0119

Table 2: Predictors of EHR satisfaction among users of EHR

Time factor:

Majority of physicians who are not satisfied with EHR are mainly due to more time consumption in documenting patient's' and billing related information. [1-4] our results also support this finding.

In the past, medical records were primarily used in order to document the patient's narrative and the physician's thought process. Pointing and clicking, along with standardized macros, often will not adequately or accurately replicate a patient's story in his words, nor does it explain what the provider was thinking at the time of the interaction. Similarly, the increased volume of the current EHR adds little value to the clinical practice of a physician or the helpfulness of his documentation. In order to find pertinent information regarding the topic at hand, a physician will often have to dive deep into a patient's chart and wade through a mass of irrelevant documentation prior to finding the information he needs. Though EMRs make reports readable, they simply demand too much time - time that is dedicated to reading documents that do not add current or clinically relevant knowledge.[23]

There is a significant reduction in productivity due to EHRs as well. While it is acknowledged that such problems exist due to poor workflow and that significant efforts are being made to improve such workflow, these efforts have not reached most EHR users. Face to face time is important, and better systems must be developed in order to allow physicians to use handheld devices, though such innovations are unlikely to be available in the near future.

Duration of EHR use:
Our results also showed that physicians who are using EHR for more than 5 years are more likely to be satisfied while compared with physicians who are using it for less than a year of duration which further supports the fact EHR satisfaction among users also depends on their expertise and comfort with EHR.

Solo practice vs Group Practice: Who makes the decision?
Our results also found that solo physicians or group of less than ten physicians who are using EHR tend to be more satisfied than group of physicians who are more than 50.A study published in 2013 showed that smaller practices need more assistance to implement EHR. [1, 2, 5] and another study published by Al Alawi and colleagues showed that solo practitioners are less likely to adopt EHR when compared with group practitioners. [1, 2, 5, 6]. As there are ambiguities in findings from other studies, we still need more studies to conclude anything about practice size and satisfaction among users of EHR.

IT Support:
We also found that physicians who perform their own IT services for EHR are more likely to be satisfied with EHR use when compared with Physicians who have an IT department to support their EHR issues. It may be because physicians who are performing their own IT services should be more computers savvy and also more independent in solving EHR problems as they arise. Articles supporting this finding are not available so further studies are needed to support or refute our findings. Our study also found that physicians who are using EHR both at, inpatient and outpatient locations are more satisfied than physicians who are using it only in hospitals which suggest that EHR implementation to outpatient practices should increase to improve physician’s satisfaction and adoption of EHR. Our result is also supported by article published by Ash, J.S and colleagues. It mentioned that having direct flow of patient information between[7] inpatient and outpatient practices improves user's satisfaction.

Functionality of EHR: Ability to generate reports
We also found that if EHR supports generation of routine reports to help better manage patients with diabetes or hypertension or suggest for due in flu shot, supports and guides to achieve meaningful use-2 requirements, allow e-prescribing, prompting

for gaps in patient care and also assist in generating reports for p4p programs which require EHR mediated report generation; users' satisfaction increases many fold. We could not found articles confirming or refuting these findings so further testing should be done before we come to conclusion.

Cost:
Incentives offered by the government are not enough to cover the costs of EHR installation, as several studies estimate the cost of purchasing and installing an electronic health record (EHR) ranges from $15,000 to $70,000 per provider [18-22] so many physicians are hesitant to initiate use or make changes to their EHR. Our survey also found that among physicians not interested in using EHR, 40% don't want to use EHR due to higher cost of implementation and maintenance. Based on our survey and other studies, cost of EHR should come down to increase acceptance and satisfaction of users.

Interference with Patient-Doctor relationship:
EHR takes more time to document. It also at times compel provider to turn away from the patient and makes patient feel that physician is distracted and less interested in patient. The proportion of time physicians spent gazing at medical records during EHR visits was significantly more than in paper chart visits.[14] PCPs who spent more time in the consultation gazing at the computer and whose visits had more conversational silence were rated lower in patient-centeredness.[15]

Workflow:
Physicians want their EHR systems to be more user-friendly and adaptable to individual clinic workflow.[16] we also found that improper workflow is the reason for more than 40% physicians' dissatisfaction with EHR. American academy of orthopedic surgeons mentioned in their position statement ***"Recognize the different needs and uses of EHR by disparate medical specialties, especially the differences between surgical specialties and primary care specialties"***.[24]Further testing can be done using controlled clinical trials to see effect of changing workflow (according to needs of users)on EHR acceptability and satisfaction among users.

Interoperability:
The lack of interoperability among EHR systems is hampering the electronic exchange of health information and is causing both frustration and skepticism among physicians relative to the value of EMRs.[16]

Limitations:
Limitations of our study are: not knowing participants' age, sex and country of medical school training which are important recognized predictors of EHR satisfaction among its users.[6] It only has opinions of New York State physicians so it may not be applicable to physicians of other states. Larger studies with more physicians from possibly all states of United States can be carried out to improve validity and larger applicability of study findings.

Conclusion:
The survey of 600 physicians makes it clear that there is need to improve the current EHR systems.
EHRs have failed to deliver on the promise of making the life of the provider better and keeping the patient safer. The cost of implementation of EHRs adds a financial burden to physician practices, which detracts from their appeal amongst the medical community at large. We also need to reduce unnecessary burden by regulatory agencies.
While many innovative products are actively being developed, it is a crucial time to think about what physicians desire from their EMRs, and why. Currently, documentation with regards to EHRs is primarily used for billing purposes. Billing is based on a formulaic documentation of systems and bullets. This method forces a physician to create a lengthy document and to systematically repeat the same points upon every documentation. Copy and paste represents another similar problem, as such documentation does not add to the value of the EHR record. While EMRs can create a very long note for billing, they evidently do not improve the quality of patient care.

Recommendations to improve implementation and satisfaction among users' of EHR (Based on our survey findings and supported by evidence from cited articles):

1. Improve design and workflow so that
    a. EHR doesn't take away time spent with patients
    b. does not interfere with doctor-patient relationship and
    c. Reduce total time spent on EHR per patient. [7-9]
2. Workflow should be customizable not only to fulfil various needs of different specialties but also to accommodate needs of every individual physician.

3. Reduce documentation that serves functions other than care of patients and reconsider incentives and penalties [2,7,9]
4. Reduce cost of EHR [2,3,9,9]
5. EHR should help generate necessary billing reports and allow e-prescription of medications
6. EHR should prompt physicians about gaps in care of their patients and also help with clinical decision support [8,8-10,10,10,10-13]
7. Improve interoperability between physicians and all healthcare providers. Peer to peer exchange should be the goal whether it’s direct or through an exchange.
8. Improve value of notes in telling the patient’s story and the thought process of the physician rather than the volume of data.
9. EHR should capture episodes of care rather than encounters

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