



Improving Documentation of Electronic Health Records through Provider and Staff Training

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Purpose

- The aim of this evidence-based quality improvement project was to determine if there was an improvement in electronic health record (EHR) documentation during a six-month period after initiation of a workflow protocol and staff training on The Healthcare Effectiveness Data and Information Set (HEDIS) quality measures of patients with congestive heart failure (CHF) and/or ischemic cardiomyopathy (ICMO).

Background

- Currently 5.7 million Americans are living with CHF (Mozaffarian et al., 2016).
- The most common cause of CHF is ICMO following an injury or ischemia to the myocardium that ultimately results in decreased cardiac output (Mann & Bristow, 2005).
- HEDIS is a tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and services for patients with ICMO (Bell & Thornton, 2011).
- EHRs can improve the standardization of care for ICMO patients in congruence with national guidelines, such as HEDIS measures (Bell & Thornton, 2011).
- Despite the several benefits, inaccurate and incomplete data exist from 60.2% to 99.4% (Wright et al., 2015).
- Literature suggests inaccurate and incomplete EHR documentation may be due to lack of knowledge influenced by inadequate health care staff education and training (Jamoon et al., 2012).

Methods

Study Design:

- Retrospective chart review utilizing IRB approved data extraction form to compare improvement in missing EHR data after staff training.

Setting

- Pulmonary and Sleep of Tampa Bay at the Tampa, Brandon, and Wesley Chapel clinic sites.

Sample:

- Patients with a diagnosis of ICMO and/or CHF (n=140).
- Convenience sample of staff members (n=10).

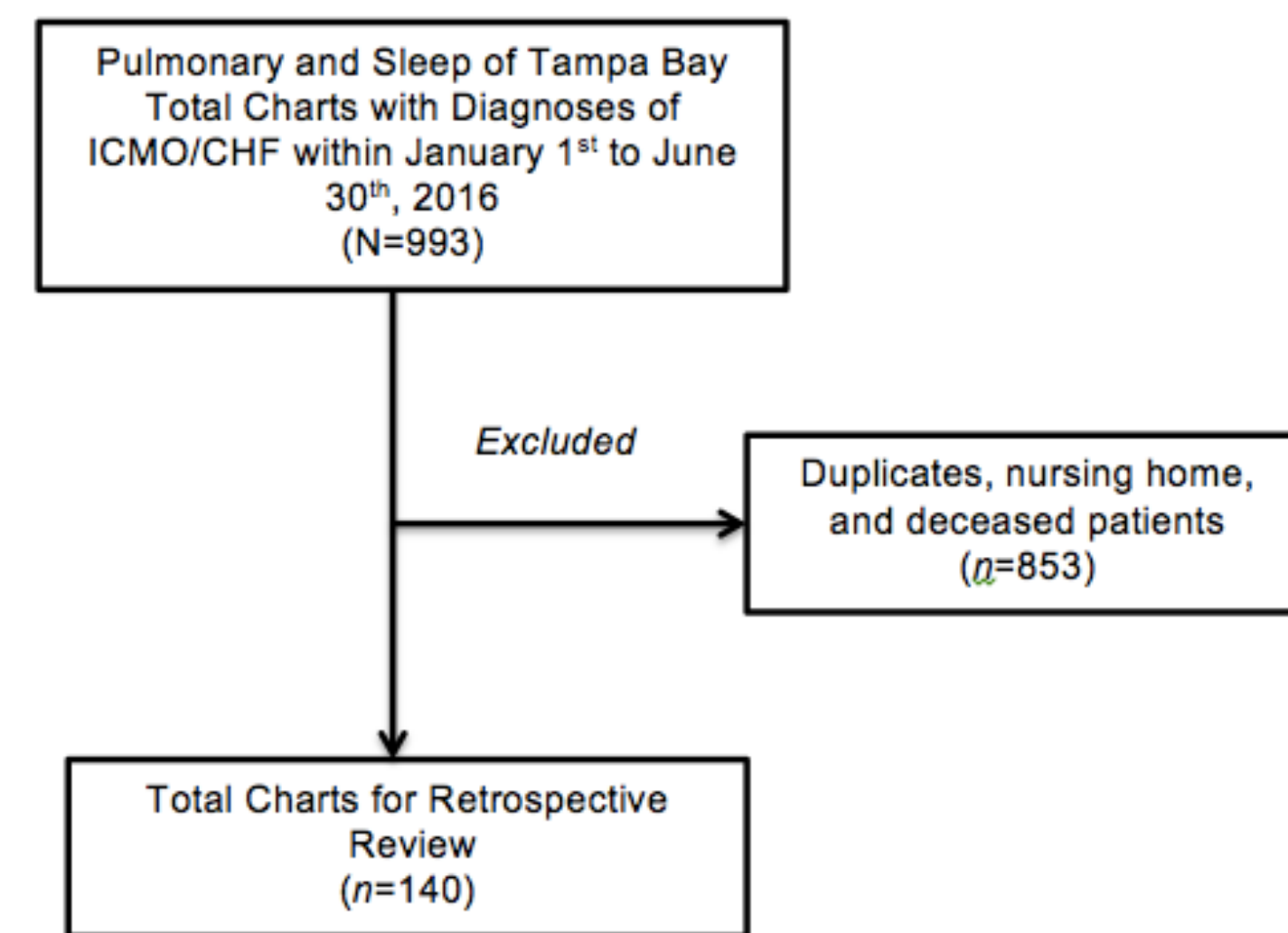
Outcome Measures:

- Improvement in EHR documentation of HEDIS measures for ICMO patients one year after staff training and workflow implementation.
- Staff satisfaction questionnaire derived from AHRQ was utilized to evaluate staff perception and satisfaction post-EHR training and implementation of the workflow protocol.

Data Extraction

- A retrospective chart review was conducted from January 1, 2016 to June 30, 2016, one year after staff training and protocol implementation.
- A total of 993 charts were reviewed and 140 of those charts met the inclusion criteria for data analysis.

Figure 1: Data Extraction from Retrospective Chart Review



Results

Table 1: Clinical Documentation Pre and Post-Training			
	Pre-Training (N=201)	Post-Training (N=140)	SIG (X)
Marital Status	73(36%)	21(15%)	.001*
Race	20(10%)	4(3%)	.041*
Family History:			
HTN	74(2%)	42(3%)	.006*
Hyperlipidemia	74(4%)	42(3%)	.001*
MI	74(4%)	42(3%)	.005*
HF	74(4%)	42(3%)	.006*
DM	74(4%)	42(3%)	.001*
Neuro	74(4%)	42(3%)	.010*
Weight (in lbs)	7(3.5%)	5(4%)	.747
Height (in in.)	4(2%)	4(3%)	.800
Body Mass Index (BMI)	8(4%)	5(4%)	.579
Current Smoker	12(6%)	4(3%)	.028*
Current ETOH	72(36%)	88(63%)	.001*
Initiated on cholesterol medication	95(47%)	75(54%)	.001*
Lipid Panel:			
Total Cholesterol	142(70%)	134(96%)	.460
LDL	0(72%)	133(95%)	.001*
HDL	142(70%)	134(96%)	.088
Non-HDL	142(71%)	136(97%)	.401
Triglycerides	143(71%)	134(96%)	.737
Timing of Lipid Panel:			
Total Cholesterol	142(71%)	85(61%)	.006*
LDL	142(71%)	84(60%)	.001*
HDL	142(71%)	85(61%)	.001*
Non-HDL	142(71%)	100(71%)	.003*
Triglycerides	143(71%)	86(61%)	.001*
Liver Function Tests:			
Alanine Aminotransferase (ALT)	107(53%)	121(86%)	.016*
Aspartate Aminotransferase (AST)	107(53%)	121(86%)	.007*
Timing of Liver Function Tests:			
ALT	107(53%)	71(51%)	.016*
AST	107(53%)	71(51%)	.016*
B-type Natriuretic Peptide (BNP)	128(64%)	131(94%)	.748
Timing of BNP	128(64%)	95(68%)	.029*
Echocardiogram (ECHO)	5(2%)	0(0%)	.005*
Timing of ECHO	85(42%)	38(27%)	.001*
Ejection Fraction %	85(42%)	38(27%)	.366
Ischemic events since initial diagnosis of MI	136(68%)	116(83%)	.001*

*Indicates statistical significance by Chi-square (X)

Results

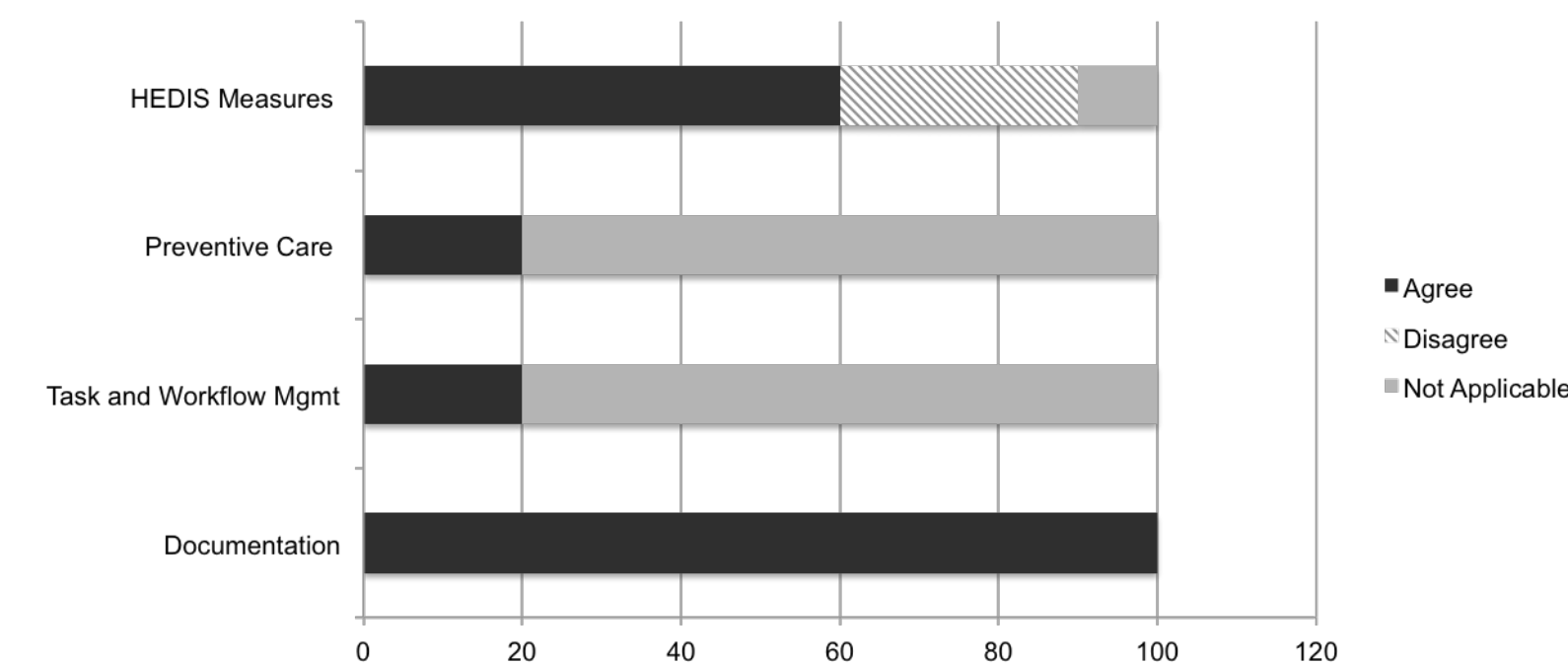
Post-Training Results:

- Chi-square analysis from Crosstab demonstrated 50% improvement in EHR documentation post-training in 17 of the 34 key outcomes measured.
- Several measures that were not documented pre-training were documented post-training such as, LDL from the lipid panel.
- Educational level of the patients are still not being reported post-training.
- Marital status displays the most significant improvement with a 21% increase in documentation.

Staff Questionnaire Results:

- Ten employees (2 physicians and 8 medical assistants (MA)) completed the post-EHR training questionnaire and strongly agreed the staff training and workflow protocol improved EHR documentation.
- MA's reported "not applicable" on clinical measure documentation.

Figure 2: Staff Satisfaction Questionnaire



Discussion

- Data from this project suggest the implementation of a workflow protocol and staff training on HEDIS quality measures overall improved EHR documentation for ICMO patients over a six-month period.
- Despite the significant improvement, complete and accurate documentation is lacking across 15 outcomes including: height, current ETOH use, lipid panel, liver function tests, BNP, ischemic events since initial MI. Timing of results for lipid panel and liver function tests improved following initial evaluation of EHR documentation.
- Up to date lab results is critical during patient follow-up to aid in the evaluation and management of ICMO patients (Bell & Thornton, 2011).
- This supports the need for a second staff training and workflow implementation for providers and staff.
- Although MA's play a significant role in the continuum and quality of patient care, all MA's surveyed reported the task and workflow management in the EHR was "not applicable" to them. Evidence supports the MA's lack of knowledge on certification through professional organizations which permits them to enter patient data such as, medical, family, and social history in the EHR (Nelson, 2016).

Clinical Implication

Improve Documentation:

- Complete and accurate EHR documentation is a key component for ICMO patients in order to provide high quality care and vigilant monitoring.

Improve Patient Outcomes:

- As reflected by achieving HEDIS measures as determined by the practice.

Practice Policy Reinforcement:

- Results were disseminated to the Pulmonary and Sleep of Tampa Bay to develop and implement a second EHR educational training session with the MA's to further improve clinical documentation.

References

- Bell, B, Thornton, K. (2011). From promise to reality achieving the value of an EHR. *Healthcare Financial Management*, 65(2),51-56.
- Jamoom, E., Patel, V., King, J., & Furukawa, M. (2012). National perceptions of EHR adoption: Barriers, impacts, and federal policies [PowerPoint slides]. Retrieved from https://www.cdc.gov/nchs/ppt/nchs2012/ss-03_jamoom.pdf
- Mann, D.L. & Bristow, M.R. (2005). Mechanisms and models in heart failure: The biomechanical model and beyond. *Circulation*, 111, 2837-2849.
- Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., . . . Stroke Statistics, S. (2016). Heart disease and stroke statistics--2016 update: a report from the American Heart Association. *Circulation*, 131(4), e29-322. doi:10.1161/CIR.0000000000000152
- Nelson, R. (2016). Medical assistants: Helping practices evolve within the changing healthcare system. *Physicians Practice*. Retrieved from http://www.americanmedtech.org/Portals/0/PDF/News/AMT-RMA_White_Paper_PhysiciansPractice_2016.pdf
- Wright, A., McCoy, A., Hickman, T., Hilaire, D., Borbolla, D., Bowes, W., . . . Sittig, D. (2015). Problem list completeness in EHRs: A multi-study and assessment of success factors. *International Journal of Medical Informatics*. 84, 784-790.

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