UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

Utility of Amazon-Inspired Algorithm for Resident Procedure Logging

Permalink

https://escholarship.org/uc/item/1vk5w9j5

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 21(4.1)

ISSN

1936-900X

Authors

Bacharouch, Ali Goyal, Nikhil

Publication Date

2020

Copyright Information

Copyright 2020 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <u>https://creativecommons.org/licenses/by/4.0/</u>

nursing faculty. The learners work through a case requiring participation from all professionals to prevent a patient safety error. At closing, all learners complete an online survey rating self-efficacy pre and post activity. Facilitators attend a debrief to share experiences and provide feedback.

Results: 335/340 students completed the survey. All 8 objectives were statistically significant (p < .001) when analyzed using a Wilcoxon Signed-Rank test. Effect sizes were calculated to determine the magnitude of the increase. The highest effective size was 0.54 for the item, "I was able to recognize how others' skills and knowledge complement and overlap my own" and the lowest was 0.46 for, "I was able to include the patient/family in decision making." Typically, values in the range of 0.4 to 0.6 are considered moderate effect size, which is appropriate to the length of this intervention.

Conclusions: Using multi-modal measures to collect feedback from both learners and facilitators maintains academic integrity and can move the needle from good to great.

53 Utility of Amazon-Inspired Algorithm for Resident Procedure Logging

Bacharouch A, Goyal N / Department of Emergency Medicine, Henry Ford Health System, Detroit, Michigan

Background: Accurate procedure logs allow residents to demonstrate procedural competence and meet accreditation requirements. Residents often perform multiple procedures on the same patient but may only remember to log a single primary procedure. To mitigate this, Henry Ford Hospital Emergency Medicine (HFHEM) developed two logging tools that recommend additional procedures to record when a primary procedure is submitted. The first tool ("Website") provides suggested procedures based on a static linkage list predetermined by residency leadership. The second ("App") uses an Amazon-inspired algorithm to provide dynamic suggestions based on selection patterns of other residents. For example, the App would say "Residents who logged I&D frequently logged Local Anesthesia or Ultrasound" (Figure 1).

Objectives: To determine whether the dynamic algorithm leads to a greater frequency of procedure co-logging compared to the static linkage list. Secondarily, to determine whether such suggestions successfully prompt residents to log procedures which they may have otherwise forgotten when using traditional logging tools. To develop an innovative tool that would reduce the effort required by residents to log their procedures. To develop an algorithm that would improve the accuracy of the procedure record by capturing procedures that would potentially be forgotten if traditional logging tools were to be used.

Methods: Procedure logging data at HFHEM for academic year 2018-2019 were retrospectively analyzed. The rates at which residents co-logged 1, 2, or \geq 3 procedures using

the Website or the App were compared.

Results: 8,656 entries were logged: Website 6,804 (78.6%) and App 1,852 (21.4%). The App was superior to the Website in promoting procedure co-logging (Table 1). Overall, 34.8% of submissions had at least 2 procedures co-logged.

Conclusions: The Amazon-inspired algorithm improved procedure co-logging when compared to the residency leadership generated static list. Suggesting procedures (regardless of the algorithm used) led to a high rate of cologging. This innovative algorithm may decrease the time needed to log procedures and may improve the accuracy of the record by capturing procedures potentially forgotten when using traditional logging tools.

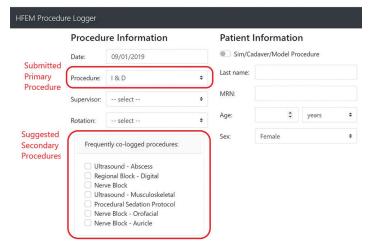


Figure 1. Procedure logging app example.

Number of co-logged procedures	Website	Арр	p-value
1	4687 (68.9%)	957 (51.7%)	<0.001
2	1237 (18.2%)	588 (31.8%)	
≥3	880 (12.9%)	307 (16.6%)	
1	4687 (68.9%)	957 (51.7%)	<0.001
>1	2117 (31.1%)	895 (48.3%)	
1 or 2	5924 (87.1%)	1545 (83.4%)	<0.001
≥3	880 (12.9%)	307 (16.6%)	

54 Validity Evidence for the Core Physical Examination in Medical Students

Guth T, Yudowsky R, Park Y, Hanson J / University of Colorado, University of Illinois - Chicago, Washington University

Background: The Core Physical Exam (CPE) has been proposed as a basis for the Core + Cluster curriculum for teaching and assessing physical examination (PE) skills in medical students.

Objective: This study provides initial validity evidence for a modified, institution-specific CPE as an assessment of