

UC Irvine

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

Title

There's An App for That: A Mobile Procedure Logging Application Using Quick Response Codes

Permalink

<https://escholarship.org/uc/item/6zm49762>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 19(4.1)

ISSN

1936-900X

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Publication Date

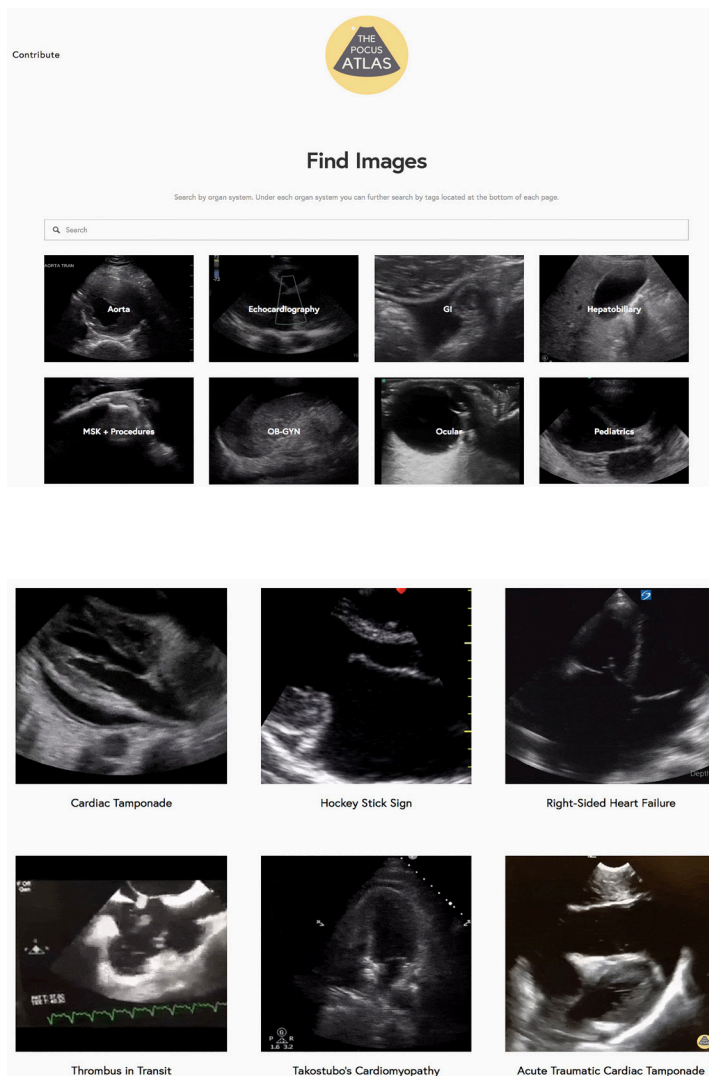
2018

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democratize POCUS education by allowing learners and educators of all levels to rapidly find high quality clips of normal, abnormal, common, or rare pathology. The intended use is for bedside teaching or download for use in educational content without copyright concern. The atlas was built via crowd-sourcing with contributions from around the world. Each submission is reviewed and edited by our team and exemplary submissions are uploaded to the atlas. Clips and cases are hosted on our site and shared throughout FOAMED channels and social media.

Impact/Effectiveness: The POCUS Atlas has over 200 publications and has been viewed by more than 5,000 unique users with over 15,000 page views in the first year. The atlas continues to expand and has partnered with ultrasound departments to encourage submissions as educational exercises for their learners. We are also transitioning our library to a mobile app, integrating our image library into other FOAMED resources and assisting medical schools in creating POCUS curriculums.



19 There's An App for That: A Mobile Procedure Logging Application Using Quick Response Codes

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Background: The Accreditation Council for Graduate Medical Education (ACGME) requires that emergency medicine residents accurately log all procedures, and failure to do this is a frequent source for citations. Studies show that only 60% of procedures performed are eventually logged. Most current web-based procedure logging platforms require accessing a workstation, logging in, selecting the procedure and inputting patient information. This can be cumbersome to implement during a shift, and procedures may not get logged, or are logged inaccurately. We designed a mobile, web-based application that uses Quick Response (QR) codes to input patient information quickly and accurately.

Educational Objectives: Design an alternative to web-based procedure logging that increases the logging rate of procedures performed during residency and decreases the transcription errors that occur with traditional data entry.

Curricular Design: A mobile-friendly, web-based app was designed to integrate with our procedure log database. It is behind the health care system's secure firewall and maintains the necessary information privacy standards. Users may set the application to automatically log in allowing quick access. The app scans the QR code displayed on each patient's arm band or identification sticker, automatically extracting patient name, birthdate, medical record number and sex. The user selects the procedure performed and the app uses data analytics to recommend logging additional procedures (Dialog box: "People who logged this procedure also logged") Source code for our app is freely available for anyone to customize to their requirements.

Impact/Effectiveness: A mobile, web-based procedure log application using QR codes allows for portability, decreases the time needed to enter data, and eliminates transcription errors. Average time spent logging a procedure decreased from 79 seconds to 27 seconds after implementation. In addition, typographical errors were found with an error rate of 15% for last name, 9% for age, and 2% for sex when using the traditional web-based method. These errors were eliminated using the mobile application. A similar app can be easily integrated into any residency program in a health care system that has adopted QR code technology for patient identification and is required to maintain a procedure log.



20 Using a Clinical Dashboard to Empower Resident Education: Does Incorporating Objective Feedback Into Semi-Annual Evaluations Improve Insight and Impact Clinical Behaviors Among Residents?

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Background: Since the implementation of the Next Accreditation System in 2014, residency programs have struggled to provide meaningful milestone-based data for their residents that demonstrates measurable outcomes. Many programs have adopted end-of-shift or end-of-rotation evaluation forms, but encounter barriers such as poor faculty compliance or performance inflation. Some programs have recently adopted clinical dashboards to display certain metrics, such as door-to-provider time, but often there is no explanation of how the data was derived or how the resident should incorporate the information into a milestone-based assessment of their performance. To the best of our knowledge, this is the first study investigating a novel approach to address this educational need using an EM Resident Clinical Dashboard to integrate performance metrics and milestone assessments directly into semi-annual review sessions for residents.

Educational Objectives: Following the Kirkpatrick model, will will determine if the use of our Dashboard to provide feedback during semi-annual review sessions 1) improves resident and faculty satisfaction with the semi-annual review and feedback process; 2) improves the accuracy of residents' self-assessment of their clinical performance; and 3) significantly impacts the clinical behaviors of individual residents.

Curricular Design: We propose a single blinded randomized controlled pilot study to determine the

effectiveness of our educational intervention. Participants will be 62 EM residents from a single institution. All residents will be provided their own Dashboard (FIGURE 1) via email with viewing instructions. However the intervention group will additionally receive targeted feedback from faculty during their semi-annual review sessions using Key Performance Indicators from the Dashboard based on a synthesis of ACGME milestones, reportable quality metrics, and data registries such as the ACEP Clinical Emergency Data Registry (TABLE 1). Impact will be determined via satisfaction forms, self-assessment surveys, and changes in clinical performance as measured by the Dashboard.

Impact/Effectiveness: We believe that use of our Dashboard during semi-annual review sessions can empower resident education by providing objective clinical data to inform milestone assessments as well as prepare our residents for practice in an increasingly data-driven world.

