

UCSF

UC San Francisco Previously Published Works

Title

Top 10 mobile apps in Emergency Medicine

Permalink

<https://escholarship.org/uc/item/0qn2662d>

Journal

Emergency Medicine Journal, 31(5)

ISSN

1472-0205

Authors

Lin, Michelle
Rezaie, Salim
Husain, Iltifat

Publication Date

2014-05-01

DOI

10.1136/emered-2014-203607

Peer reviewed

Top 10 mobile apps in Emergency Medicine

Michelle Lin,¹ Salim Rezaie,² Iltifat Husain³

¹Department of Emergency Medicine, University of California, San Francisco, San Francisco General Hospital, San Francisco, California, USA

²Department of Emergency Medicine and Internal Medicine, University of Texas at San Antonio, San Antonio, Texas, USA

³Department of Emergency Medicine, Wake Forest School of Medicine, Medical Center Boulevard, Winston-Salem, North Carolina, USA

Received 14 January 2014
Revised 17 January 2014
Accepted 28 January 2014

Correspondence to

Dr Michelle Lin, Department of Emergency Medicine, University of California, San Francisco, 1001 Potrero Avenue, Suite 1E21, SFGH Emergency Medicine, San Francisco, CA 94110, USA;
Michelle.Lin@emergency.ucsf.edu

ABSTRACT

Mobile apps are increasingly being used at the bedside as a part of clinical care. With almost 300 Emergency Medicine-related apps available in the Apple App Store, it can be overwhelming deciding which are most useful for Emergency Department providers. A Top 10 list of apps is highlighted which illustrate the many ways that quality apps can positively impact the care of Emergency Department patients.

EMJ asked some of the world's best known digital natives to sort through the dizzying assortment of apps that might be useful for emergency physicians in their day-to-day clinical work. Here is what they came up with.

Medical apps allow physicians to access content that used to be stored on flash cards, pieces of haphazardly arranged paper and booklets. Especially critical for the day-to-day work pace of the Emergency Department (ED), apps enable this content to be quickly accessible to medical providers on their smartphones. Early pioneers in point-of-care mobile health references, such as Medscape and Epocrates, are now being challenged by newer apps, which are often superior in terms of user interface design and content quality. With approximately 300 Emergency Medicine (EM)-related apps in the Apple App Store, finding which medical apps to use in practice can be difficult.

The following list showcases our Top 10 app choices, as well as a new 'rising star' app, that would be useful for EM clinicians. These apps are listed in alphabetical order and provide additional app-specific information, such as platform compatibility, cost and the requirement for wireless access after app download.

ERRES

Platform(s): iOS, Android

Cost: \$4.99

Wireless access required: No

There is no perfect clinical decision support or point-of-care app which covers the broad range of topics in EM. The best we found so far is ERres, a multi-purpose app that can be used by a broad range of clinicians ranging from the medical student to the senior attending physician. The app is divided into 12 main sections, including Decision Rules, Ultrasound, Toxicology and Calculator Tools. You can bookmark frequently accessed topics to more quickly retrieve this information in the future. Of note, this app, which was created in the USA, does not use British approved names for the medications.

EVERNOTE

Platform(s): iOS, Android

Cost: Free

Wireless access required: Yes (for free version)

Although not strictly an EM-based app, Evernote is a cloud-based notetaking and archiving application. Evernote made the Top 10 list because it can serve as your customised, paperless reference tool. For instance, hospital guidelines, specific PDF journal articles and your list of clinical pearls can be catalogued and synced in the app for reference on your desktop, web browser or mobile device. As an added bonus, you can also view your other in-app notebooks, which have, for instance, your cookbook recipes, grocery list and office to-do list items.

EYEMD

Platform(s): iOS

Cost: Free

Wireless access required: No

Doing visual acuity testing in the ED using a Snellen eye chart hanging on a wall can be inefficient for patients who are, for instance, located in a clinical area that is not near the eye chart. EyeMD brings the Snellen chart to the patient. Nice additional features include a penlight option and a detailed cross-sectional anatomy diagram for patient education. This app was determined to be superior to the older and more popular EyeChart HD app, which is also free, primarily because it has not been updated since 2010 and thus not reformatted for recent operating system upgrades.

MEDCALC

Platform(s): iOS

Cost: \$1.99

Wireless access required: No

This calculator-based app contains over 300 formulas, scores and decision rules, which covers all medical specialties including EM. Frequently used calculations, such as Pulmonary Embolism Severity Index, head and cervical spine CT rules, and the paediatric GCS, are available. The more expensive Pro version of MedCalc is unnecessary for EM providers. For a free calculator app with over 150 formulas and calculations, the Calculate app allows one to only search for content but only after entering a desired medical specialty, unlike MedCalc where one can search the entire calculator database.

Micromedex Drug Information (US) or BNF/cBNF (UK)

Platform(s): iOS, Android

Cost: Free

Wireless access required: No

For American-named medications, we chose Micromedex as our selected drug information app.

To cite: Lin M, Rezaie S, Husain I. *Emerg Med J* Published Online First: [please include Day Month Year] doi:10.1136/emmermed-2014-203607

Review

In contrast to Medscape and Epocrates, Micromedex seems to access key medications quicker. Furthermore, it does not require you to register your personal information and provides an intuitively simple user interface to get emergency physicians the crucial information more instantaneously. For UK-named medications, we selected BNF and cBNF for adult and paediatric apps, which were developed by the National Institute for Health and Care Excellence for the British National Formulary. Users of BNF and cBNF will need to register for a free NHS Athens user name and password as outlined on the app's website.

PALMPEDI

Platform(s): iOS, Android

Cost: Free (lite version)

Wireless access required: No

This paediatric EM tape app is based on the Broselow length-based tape classification system. The home page requires the provider to first select the patient's weight, if known, or estimated weight based on the Broselow tape length, tape colour or patient age. This allows the physician to view weight-specific drugs, equipment and vital signs as subcategorised by problem (eg, airway, cardiac resuscitation, asthma).

PERFECT OB WHEEL

Platform(s): iOS

Cost: \$1.99

Wireless access required: No

Older physicians will recall (and may still carry) a pocket obstetric wheel card for estimating the gestational age of the fetus. Perfect OB Wheel allows the clinician to spin a virtual calendar wheel to automatically determine gestational age, based on the patient's last menstrual period, conception date, due date or ultrasound dating on a prior visit.

PRESSORDEX

Platform(s): iOS

Cost: \$15.99

Wireless access required: No

PressorDex is a guide for vasoactive drugs and other critical care medications. This is a quick reference tool that was originally in book form, but then converted to a mobile app by the Emergency Medicine Residents' Association in the USA. Every organ system is listed with pertinent medical conditions. Content can be searched by using the general search bar, or by organ system, diagnosis or medication name. Medications are listed using only American-based names.

READ: PERSONALISED MEDICAL AND SCIENTIFIC JOURNAL

Platform(s): iOS

Cost: Free

Wireless access required: Yes

Staying current and keeping up with the medical literature can be overwhelming. This app provides a visually-pleasing user interface, which displays article abstracts from your customised journal reading list. Innovatively, this app currently provides faculty and students from over 100 North American universities the additional ability to not only read the abstracts but open full-text PDF articles directly from within the app. These articles can then be shared with others through Twitter, Facebook or email. After the initial one-time hurdle of setting up your preferences and proxy access to your institution's library, this app easily allows you to browse and read a library's worth of full-text journal articles. Although currently the full-text feature is only available in select US and Canadian universities, the standard features that allow for browsing article abstracts is still valuable.

SONOSUPPORT

Platform(s): iOS

Cost: \$4.99

Wireless access required: No

This reference tool app provides step-by-step instructions with paired anatomic diagrams on a variety of different ultrasound applications. The content in this app is so comprehensive and practically useful that it could also serve as a curricular learning resource for bedside ultrasonography.

'RISING STAR' APP: AGILEMD

Platform(s): iOS, Android

Cost: Free

Wireless access required: No

As textbooks are increasingly moving into the online space through tablet e-books and PDFs, AgileMD looks to capture this market, specifically within the mobile app space. This start-up company already has partnered with several universities to upload various handbooks, such as Paucis Verbis EM pocket cards from Academic Life in Emergency Medicine (free), UCSF EM resident's handbook (\$39) and University of Chicago's *Symptom to Diagnosis* (\$99) book. (In full disclosure, one of the authors of this manuscript (ML) is the creator of the free Paucis Verbis card series.) Because the user interface has no extra design distractors, the app is fast, skimmable and most importantly does not require internet access. Educators and clinicians can purchase authorship access to the app and create their own in-app collection for public or limited distribution.

Contributors All the authors were integral in the design, data acquisition, data analysis for this top 10 list. They were also involved in iteratively writing and rewriting the manuscript, whereby the final manuscript version was determined by consensus agreement.

Competing interests ML is the Editor-in-Chief of AcademicLifeinEM.com. She is also a deputy editor for DynaMed (a subscription-based online resource), and is a non-paid consultant for AgileMD, who has converted her pocket cards into an in-app free collection. SR is the Associate Editor of AcademicLifeinEM.com. IH is the Editor-in-Chief of iMedicalApps.com.

Provenance and peer review Commissioned; internally peer reviewed.



Top 10 mobile apps in Emergency Medicine

Michelle Lin, Salim Rezaie and Iltifat Husain

Emerg Med J published online February 24, 2014
doi: 10.1136/emered-2014-203607

Updated information and services can be found at:
<http://emj.bmj.com/content/early/2014/02/23/emered-2014-203607.full.html>

These include:

- | | |
|-------------------------------|--|
| P<P | Published online February 24, 2014 in advance of the print journal. |
| Email alerting service | Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article. |

Notes

Advance online articles have been peer reviewed, accepted for publication, edited and typeset, but have not yet appeared in the paper journal. Advance online articles are citable and establish publication priority; they are indexed by PubMed from initial publication. Citations to Advance online articles must include the digital object identifier (DOIs) and date of initial publication.

To request permissions go to:
<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:
<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:
<http://group.bmj.com/subscribe/>