Assessing mHealth Apps Focused on Population and Public Health Needs

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INTRODUCTION

- Mobile Health (mHealth) applications (apps) are downloadable wireless software applications that support health and wellbeing functions[1].
- Existing mHealth assessment tools focus on health and well-being promotion and are not optimal for use on population and public health-focused mHealth apps.
- Despite the unique requirements and sensitive nature of population and public health, there is little research on the quality of mHealth apps.

METHODS

- Apps for assessment were identified by a
  - focused search of public health agency websites
  - generalized Google searches using a combination of focused search terms
  - Google Play and Apple App Store search.
- The list was further narrowed by focusing on applications intended for public health and health professionals rather than the public.
- Evaluated using a tool that was adapted from Mobile App Rating Scale (MARS) [2] and Enlight[3] assessment tools and validated by pilot testing.

RESULTS

Figure 1: Public Health Focused Apps Evaluated

01 CDC Cause of Death Quick Reference Guide

02 CDC Dental Check

03 FEMA

04 CDC Mobile App

05 Field Facts

06 Ebola Exposure Calculator

07 OSHA-NIOSH Heat Safety Tool

08 EpiInfo™

09 Epi Info™ Vector Surveillance

10 WeHealth

11 NIOSH Pocket Guide to Chemical Hazards

- Figure 1 presents the 11 apps with a public health focus selected from the searches for evaluation.
- The mHealth apps generally scored well in user experience and aesthetics.
- Did not have optimized mobile phone screen displays.
- Apps were appropriate for target users
- Did not score well in security and accessibility
- Lacked transparency on some built-in features.
- App's version number, date of the most recent update, number of reviews, language, and purpose were easy to find.
- Content was of good quality, but the quantity was often unbalanced, with either scarce information or an overwhelming amount.
- Most apps did not charge a fee for access but were rarely available in any language other than English.
- Table 1 presents the key features from the CDC's "Cause of Death Mobile App", an app that scored well and was identified as a model app.

Table 1: CDC's Cause of Death Mobile App

PURPOSE	**App acquaints users (clinicians who might have a reason to certify the cause of death) with the vital registration system in US**
DESIGN	**Well-designed - layout, navigation, and visual appeal simple but engaging throughout**
CONTENT	**Content was accurate and authoritative but clear and appropriate to its intended users**
VALUE	**Provided additional Info through various examples**
RESOURCES	**Did not explicitly cite references, but did provide links to "Additional Resources"**
PRIVACY & SECURITY	**Clearly identified its policies and accessibility features by linking to the CDC "Mobile Privacy Policy" website**

CONCLUSION + ACKNOWLEDGEMENT

- Built-in app functionalities should focus on improving accessibility, listing additional languages, and added security features.
- A limitation is the small number of apps evaluated which were US-focused and limited to iPhones.
- Extend assessment to Android apps + expand range of population and public mHealth apps + number of evaluators = more robust review.

References

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3. Baumel A, Faber K, Mathur N, Kane JM, Muench F. Enlight: A Comprehensive Quality and Therapeutic Potential Evaluation Tool for Mobile and Web-Based eHealth Interventions. J Med Internet Res. 2017;19(3):e82.

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