Commercial apps and the evidence: Guide for providers

Dr. Sherry Pagoto
University of Massachusetts Medical School

Dr. Kristin Schneider
Rosalind Franklin University
App mania!

- As of May 2012, more than 40,000 health apps existed in the US, and the rate of proliferation is nearly exponential (West, 2012)
- Nearly one-fifth (19%) of US adults with a smartphone had at least one app designed to promote health (Leroux & Rivas, 2014)
- By 2017, 50% of mobile users are projected to have downloaded at least one health app (Leroux & Rivas, 2014)
Providers are cautious

- 37% of physicians recruited from an online social network prescribed health apps to their patients
- 42% said they would not prescribe apps without regulatory oversight
- 37% said they have no idea what apps are available

Gold, 2014
Why should providers care about apps?

Apps can facilitate patient self-management.

Early evidence shows many signs they are helpful tools that improve outcomes and adherence.

Many patients are using them and want input from their providers.

Providers remaining unaware of technological advances may fall behind in a rapidly evolving digital healthcare system.
Providers need evidence/guidance or mobile tech will be the next...
Search process

Parallels process we use to identify evidence-based treatments:

Evidence hierarchy, professional network, patient preferences, case studies, and pilot testing
Recommended Search Strategies

- **Step 1**: Review the scientific literature (systematic reviews, clinical trials)
- **Step 2**: Review app clearinghouse websites
- **Step 3**: Select the best search terms for navigating app store
- **Step 4**: Narrow app pool by evaluating user ratings, reviews
- **Step 5**: Conduct a social media query
- **Step 6**: Pilot test the app
- **Step 7**: Garner feedback from patients & professionals
Step 1: Lit review

**Search terms:**

“randomized trial” or “feasibility” or “usability” 
and

“mobile app” 
and

the name of the condition (e.g., smoking)
Results: 9

1. Randomized trial of a smartphone mobile application compared to text messaging to support smoking cessation.

2. The effectiveness of a suicide prevention app for indigenous Australian youths: study protocol for a randomized controlled trial.

3. Design and implementation of a randomized controlled social and mobile weight loss trial for young adults (project SMART).

4. Efficacy of a mobile application for smoking cessation in young people: study protocol for a clustered, randomized trial.
Step 2: Review app clearinghouses
<table>
<thead>
<tr>
<th>Clearinghouse (website)</th>
<th>Target Audience</th>
<th>Description</th>
<th>Review Standards</th>
<th>Who Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Health Service (NHS) Health Apps Library</td>
<td>United Kingdom</td>
<td>Offers a library of health apps for patients and aims to provide quality assurance to ensure that apps are clinically safe.</td>
<td>All submitted apps are evaluated to make sure they are: 1) relevant to those living in England. 2) comply with data protection laws, and 3) comply with trusted information sources.</td>
<td>Reviewed by a NHS Clinical team that consists of doctors, nurses, and safety specialists.</td>
</tr>
<tr>
<td>Happtique</td>
<td>United States—patients, physicians, and medical organizations</td>
<td>A mobile health application store and app management solution that allows organizations to create individually branded, secure, multi-platform application stores for staff and patients.</td>
<td>The app certification program is based on meeting standards related to: 1) operability, 2) privacy, 3) security, and 4) content.</td>
<td>The content of apps are evaluated in partnership with medical professional societies.</td>
</tr>
<tr>
<td>iMedicalApps</td>
<td>United States—physician, patients, and mHealth analysts</td>
<td>This is an independent online medical publication. Its goal is to provide reviews, research, and commentary of mobile medical technology.</td>
<td>Reviews are based on the reviewers’ own hospital and clinical experiences.</td>
<td>Reviewers are 4 editors and 5 writers all of whom are physicians, physicians-in-training, allied health professionals, or mHealth analysts.</td>
</tr>
<tr>
<td>Clearinghouse (website)</td>
<td>Target Audience</td>
<td>Description</td>
<td>Review Standards</td>
<td>Who Reviews</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Eat Right</td>
<td>Worldwide</td>
<td>Academy of Nutrition and Dietetics.</td>
<td>Reviewers write a brief evaluation based on 1) overall synopsis of the app, 2) pros and cons, and the 3) bottom line. Reviewers also rate apps from 1 to 5 stars.</td>
<td>The website specifically names 3 reviewers all registered dietitians.</td>
</tr>
<tr>
<td>IMS Health’s AppScript</td>
<td>Providers, payers, govt agencies, policymakers, researchers</td>
<td>IMS Health is a information, services, and technology company</td>
<td>The overall IMS Health App Score is based on a combination of 1) functionality, 2) peer and patient reviews, 3) certifications, and 4) their potential to improve outcomes and lower the cost of care</td>
<td>IMS</td>
</tr>
<tr>
<td>HealthTap’s AppRx</td>
<td>United States—primarily for patients/consumers</td>
<td>This is a specific function of the larger HealthTap app. The AppRx function allows consumers to read health and medical app evaluation/recommendations from a network of 60,000+ physicians.</td>
<td>Doctors in the network review the apps based on 3 questions: 1) Is the app medically sound?, 2) Is the app useful?, and 3) Is the app easy to use and understand?</td>
<td>Physicians from a network of &gt;60,000</td>
</tr>
</tbody>
</table>

Step 3: Search app stores

- Specific search terms important
- “alcohol” will produce drinking game apps, cocktail recipe apps, as well as apps that help to reduce drinking.
Step 4: User ratings

High volume of ratings combined with high ratings will likely produce the best apps.

Note distribution of ratings.

Top lists in “health and wellness” categories are the most highly rated and downloaded apps.

This may eliminate gimmicky apps (e.g., tummy fat vibration app vs My Fitness Pal).
Step 5: Social media query

Query your professional social network for suggestions

Sermo, Researchgate

Linked In mHealth, Digital Health communities

Twitter using #mhealth, #digitalhealth hashtags

Use healthcare hashtags #bcsm, #hcsm

“Looking for recs from docs and patients for GOOD smoking cessation mobile apps”
Step 6: Pilot test

Provider, nurse, or other allied health care professional can be tester

Use for a short period to capture all functionality

Evaluate: usability, accuracy of info, inclusion of desired functionality

Apps that provide coaching for a cost might require more intensive testing to insure advice/coaching is acceptable, evidence-based
Step 7: Patient feedback

Ask patients what they are using

After recommending an app, follow up with patient after a week or so to get feedback.

If more than one app fits your needs, get feedback on multiple to see which patients like best.
Next steps

Compile a list of apps you recommend to patients and use as a guide for other patients.

Evaluate use of apps in patient evaluations. Make mobile apps part of the conversation with each patient.

Disseminate your resource! Other providers need it!