Directions in Mobile Health Applications

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The Scary World of Mobile Asthma Apps?

BMC Medicine - World Asthma Day 2013 Assessment:

“Issues include limited and inaccurate information, faulty tools and content-independent problems of information presentation and attribution. The findings highlight a need for caution among clinicians thinking about using apps as part of clinical care and for policy-makers and developers to consider appropriate ways of assuring content quality in health apps.”

Source: http://www.biomedcentral.com/1741-7015/10/144
Session Objectives

- Understand the state of mobile health apps today
- Understand the distinctions between different types of mobile apps for asthma
- Understand the current challenges and benefits of mobile apps for asthma
New Frontier of Devices and Apps
Asthma Apps are Popping Up

Trackers

Devices
Types of Mobile Health Apps Available Today

- Reminders
- Trackers, Biometric Collectors
- Treatment Programs
- Education Programs
- Remote Monitors
- Social Connections
- Motivators
The Difference Between a Diagnostic App and a Behavioral App

- Prompting behavior based on user data
- Analyzing user data and further directing behavior
The Difference Between a Self-Managed App and a Care Team-Connected App

- Definition
- Challenges of Self-Managed
- Challenges of Care-Team Connected
Sample Self-Managed Asthma Apps

**Reference:**

- **American Lung Association**
  - Fighting for Air

**Assistance Tools:**

- **WellaPets**
  - Education

- **Asthma Journal**
  - Tracking

- **Asthma Sense**
  - Breathing Distress

- **Assist Me with Inhalers**
  - Inhaler Technique

- **SPARX**
  - Gamification

- **WellaPets**
  - Inhaler Technique

- **Asthma Buddy**
  - Reminders
Sample Care Team Connected
Asthma Apps

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AsthmaMD
Sample GPS Connected Asthma Apps

1. Georeferenced inhaler use points (just presence)

2. GS of environmental variables to explore

3. Extract environmental data at each point

4. Build model against background sample of pseudo-absences

5. Model calibration and selection (AUC, omission rate, cross-validation with test data)

6. Probability distribution based on environmental suitability

7. Assessment of environmental variable contributions
Mobile App Industry Proof Points

- Types of studies
- Challenges of studies
Challenges of Mobile Asthma Apps

- Enrollment
- Patient Activation
- Sustained Engagement
- Cost
- Perceived evils of connected monitoring

The First Step... Is Always the Hardest.
Benefits of Mobile Asthma Apps

- Patient Empowerment
- Health Outcomes
- Quality of Life
- Reduced Absences
- Cost Outcomes
- Care Team Efficiency
- Quality of Care Team Interaction
- Education
- Long Term Routine Establishment
Global App Downloads to Pass 100 Billion This Year
Estimated mobile app downloads worldwide (in billions)

Source: Gartner