**ASTHMAGURU**

Rajoshi Biswas¹, Peter Chang², Hasitha Dharmasiri, Gaurav Patel, Ashutos Sabharwal³

(¹rajoshi.biswas, ²Peter.S.Chang, ³ashu)@rice.edu

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### Asthma

- Causes the airways to swell and narrow

- Can’t be cured but can be managed
- 300 million in the world – 1 in 12 in the US

### Poor Management of Asthma

Everyday:
- 44,000 people have an asthma attack.
- 36,000/27,000 kids/ adults miss school/ work.
- 4,700 people visit the ER.
- 1,200 people are admitted to the hospital.
- 9 people die from asthma.

Asthma costs in the US - $56 billion in 2007

### Being the AsthmaGuru!

**Variables to Monitor**

- AQI
- MEDICATION
- SPIROMETER

A combined metric to asses the personalized daily risk factor associated with an asthma attack based on current and past data. This enables patients to be in-control of their disease.

### Reasons for Non-COMPLIANCE

- Fear of side effects 4%
- Embarrassment 6%
- Inconvenience 6%
- Difficulty of Use 8%
- Forgetfulness 50%
- Ineffective medication 15%
- Laziness 2%
- Denial 9%

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**Features of AsthmaGuru**

**AsthmaGuru Attachment**

- Records dosage
- Time stamp
- Bluetooth communication with Android device to update dosage
  (In future version)
- Location of use with WPS

**Application on Android device**

- Maintains record of medication compliance
- Gathers Air Quality Index (AQI) information based on zip code/ current location.
- Maintains Spirometry readings.
- Calculates Personal-Risk-Index based on all three parameters and their history.

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**Future work**

- Implementation of location determination using Wi-Fi on the AsthmaGuru attachment brick
- Perform clinical trials to test robustness of AsthmaGuru
- Formulation of an accurate and robust Risk Index

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**Fig.1(a)**

MobileSpiro
**Fig.1(b)**

AsthmaGuru attachment with Inhaler
**Fig.1(c)**

Screenshots of AsthmaGuru Android Application

**Fig.2.** Results from a qualitative study on non-compliance.

http://fampra.oxfordjournals.org/content/17/2/134/T1.expansion.html

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