



# ASTHMAPOLIS

Outsmarting asthma, together.



Smart Asthma Management Tools

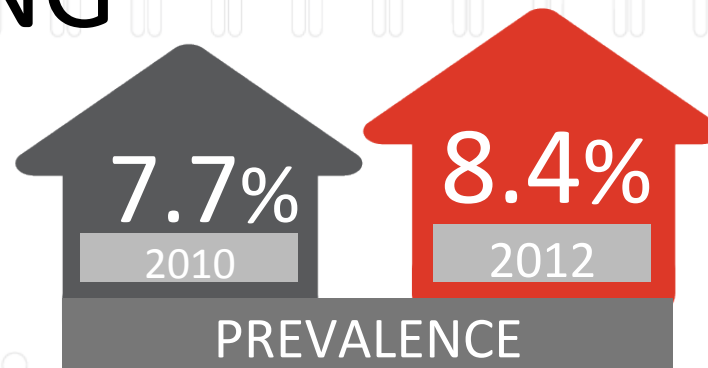
Founded 2010 in Madison, WI

# AGENDA

- The problem we're addressing
- Our approach
- Results to date
- Why it works

# ASTHMA IS GROWING

**25 MILLION**  
HAVE ASTHMA IN U.S.



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**>60 PERCENT**  
ARE UNCONTROLLED

**80 PERCENT**  
OF UNCONTROLLED  
SAY THEY'RE DOING FINE

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500K HOSPITALIZATIONS  
2M ED VISITS  
10M OFFICE VISITS  
25M MISSED DAYS SCHOOL/WORK

**\$50 BILLION**  
ANNUAL HEALTHCARE COST

# UNCONTROLLED ASTHMA DRIVES COST

**Uncontrolled patients are 3.5X more likely to visit ED or be hospitalized.**

- We know both are preventable

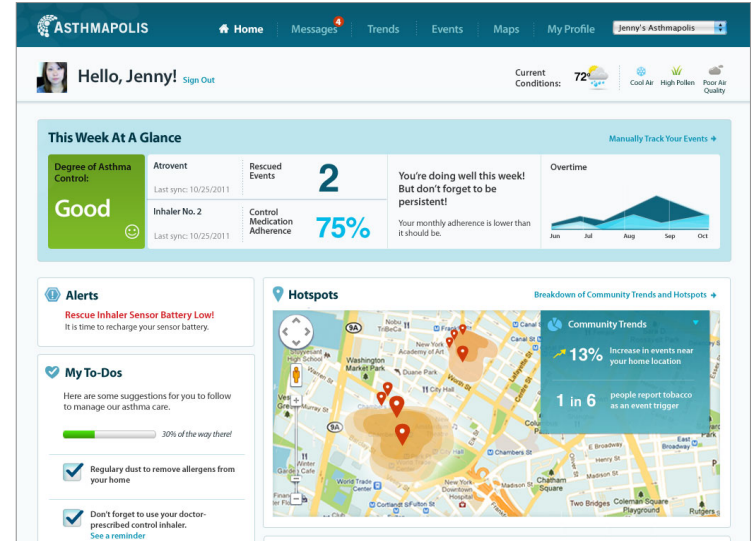
**Uncontrolled patients require \$3-4,000 per year in additional healthcare.**

- \$4,212 – Kaiser Permanente (N=96,631)<sup>1</sup>
- \$3,499 – Employer claims (N=8M)<sup>2</sup>

# OUR GOAL IS TO REDUCE COST, WHILE IMPROVING QUALITY OF LIFE

1. Our goal is to **close the spending gap** between those who are uncontrolled versus controlled
2. We **target our approach** to patients (and their clinical teams)
3. We aim to **reduce the very high cost** associated with those who frequently don't adhere
4. We seek to **improve control overall** reducing incremental expense
5. We expect to **improve quality of life**, targeting improvement on key national quality metrics

# WE OFFER A HIGHLY INTUITIVE PATIENT-CENTRIC SOLUTION THAT LEVERAGES GUIDELINES



## Inhaler sensors

- Automatically tracks date and time of use of most MDIs
- Transmits data to mobile phone or Qualcomm basestation

## Mobile applications

- Transfer data from sensor to server
- Obtains event location and other contextual details
- Mobile dashboard to engage and educate the patient
- Alerts and notifications



## SMS alerts, Email reports, Dashboards, asthma Nurse Educator

### Patients

- Personalized, actionable feedback, guidance and education to optimize self-management
- “Smart” medication reminders encourage adherence
- Community data support engagement
- Personal outreach when needed

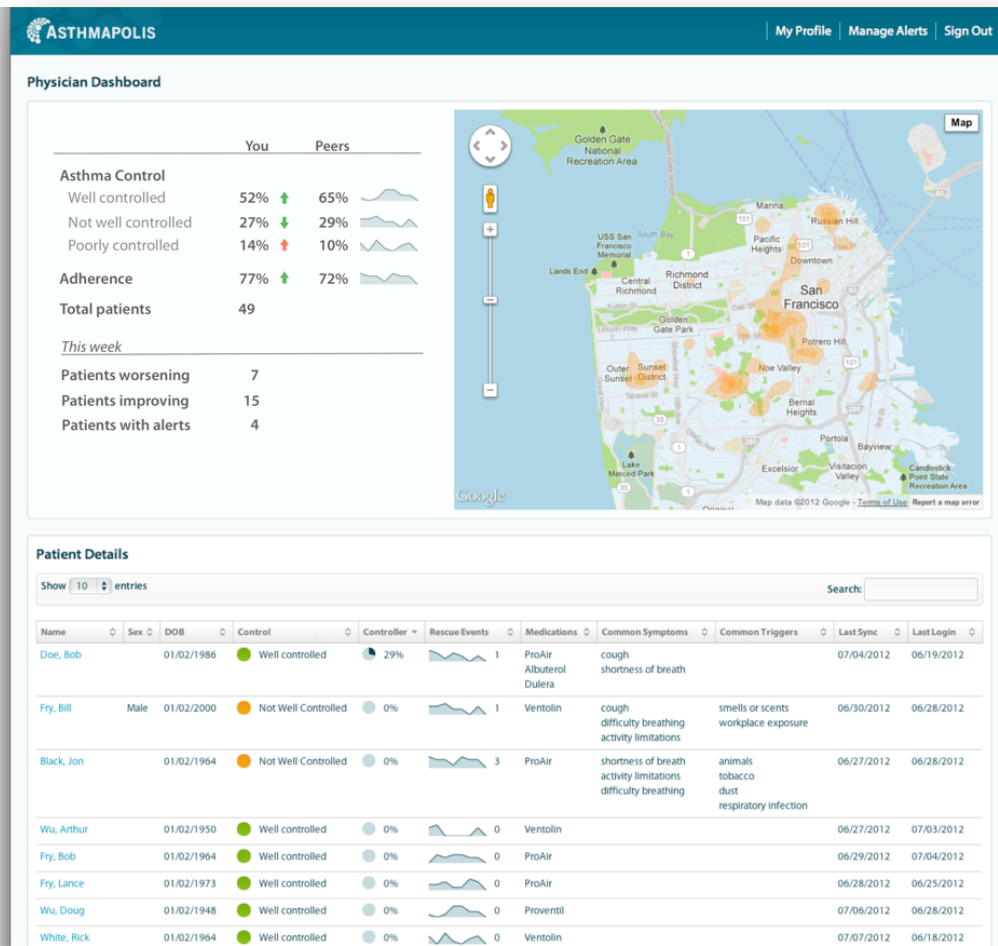


# WE CREATE OBJECTIVE DATA FOR PROVIDERS AND CARE TEAMS

Secure online dashboard to view patient panel and identify high-risk individuals:

- Adherence
- Asthma control
- Engagement

Automated notifications and alerts when patients exceed care team defined thresholds



# WE MANAGE POPULATIONS IN SUPPORT OF CLINICAL TEAMS

- Consistently monitor patients on behalf of physicians and care teams
- Provide “first tier” advice and guidance
- Alert clinical teams of patients that may require clinical intervention
- Alerts align with varying clinical workflows—email, text, phone call



# WE CUSTOMIZE PROGRAMS TO FIT WITH CLIENTS' OPERATIONAL PROCESSES

- Identify program lead at client organization
- Co-brand program marketing materials
- Collaboratively define process for identifying and educating patients about the program
- Support patient enrollment
- Provide ongoing technical support for patients, care teams and providers
- Continuously monitor, report and check in on progress

# EMR INTEGRATION IS COMING

- Integration underway
- We'll pass information from the primary patient screen including:
  - level of control
  - rescue medication usage
  - controller medication adherence

# WE RECEIVED FDA CLEARANCE LAST SUMMER

- Received FDA 510(k) clearance July 3, 2012
- Focus on organizations with aligned clinical and economic incentives
- Initial customers are a combination of:
  - ✓ Major payer/provider systems
  - ✓ Major Medicaid managed care plan
  - ✓ Public health in collaboration with health systems, employers, community
  - ✓ Medicare Advantage

# OUR PROGRAMS ARE GENERATING STRONG EARLY RESULTS: DIGNITY

**Dignity is better living through satellites.**

It's an eagerness to innovate for the cause of better care and lower cost. It's engaging in research around new technologies, like testing GPS-enabled asthma inhalers to find out if the breathing data they transmit to doctors can help them manage their patients' disease and reduce serious, expensive attacks. It's providing medical excellence throughout our network of 40 outstanding hospitals and more than 150 care centers. That's what dignity—and Dignity Health—is all about.

 Dignity Health



Mercy General Hospital  
 Mercy Hospital of Folsom  
 Mercy San Juan Medical Center  
 Methodist Hospital of Sacramento  
 Sierra Nevada Memorial Hospital  
 Woodland Healthcare

dignityhealth.org  

Nationwide Dignity ad campaign



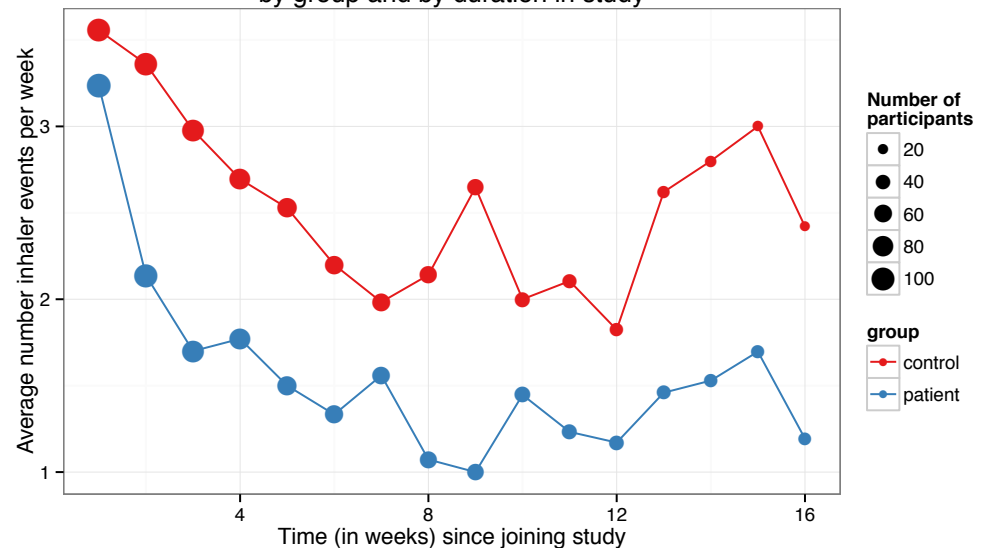
400-500 patients at two Dignity Health in CA: Woodland Health Care and Mercy Medical Group.



CHCF subsidized a randomized, controlled trial with economic evaluation.

## PRELIMINARY RESULTS

Average number of inhaler events per week, by group and by duration in study



# OUR PROGRAMS ARE GENERATING STRONG EARLY RESULTS: LOUISVILLE, KY



Citywide effort by Louisville Metro, Norton Healthcare and others to provide Asthmapolis to 400 city residents.



Asthmapolis kits available at 22 Walgreens pharmacies.

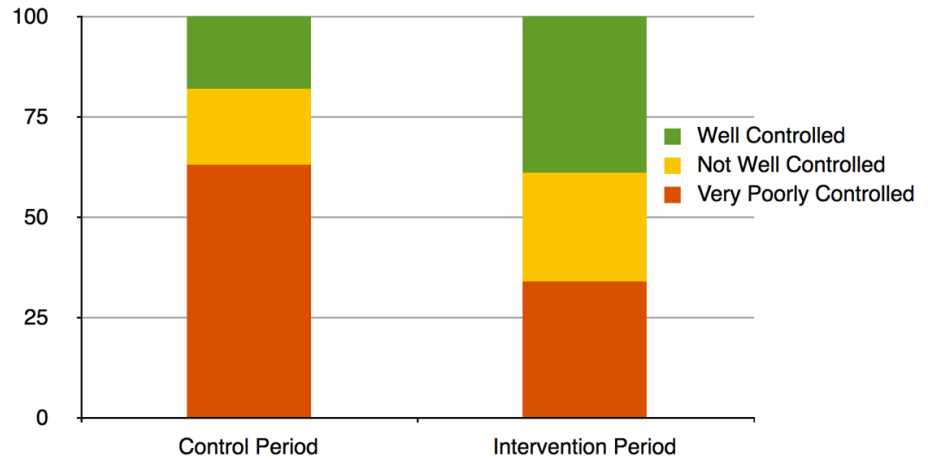


Winner of IBM Smarter Cities Challenge



## PRELIMINARY RESULTS

Mean level of asthma control during control and intervention period\*



\* As assessed by the frequency and time of day of inhaled short-acting bronchodilator (rescue) medication use.

# WHY IT WORKS.....

1. Patients don't need to change any behavior or daily routines to effectively participate
2. Engagement and results persist because we make it easy for patients and their clinical teams to be successful (we're a service)
3. We can predict deterioration, intervene and offer further support



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# REFERENCES

- <sup>1</sup> Zeiger, R. S. et al. Asthma costs and utilization in a managed care organization. *Journal of Allergy and Clinical Immunology* 121, 885-892. e5 (2008).
- <sup>2</sup> Ivanova, J. I. et al. Effect of asthma exacerbations on health care costs among asthmatic patients with moderate and severe persistent asthma. *J Allergy Clin Immunol* 129, 1229-1235 (2012).
- <sup>3</sup> Van Sickle, D. et al. Remote monitoring of inhaled bronchodilator use and weekly feedback about asthma management: An open-group, short-term pilot study of the impact on asthma control. *PLoS One* (In Press).
- <sup>4</sup> Reddel, H. K. et al. An official American Thoracic Society/European Respiratory Society statement: asthma control and exacerbations: standardizing endpoints for clinical asthma trials and clinical practice. *Am J Respir Crit Care Med* 180, 59-99 (2009).