

Medically Sound, Cost Effective Disease Management For Medicaid Populations

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**NATIONAL
JEWISH**
Medical and Research Center

Global Leader in Lung, Allergic
and Immune Diseases

National Jewish Medical and Research Center

- Founded in 1899 for TB
- Focus on Respiratory, Allergic and Immunologic Diseases
- Predominantly an academic medical center with 70% research focus
- Disease Management started in 1996
- Quality over Bottom Line is the marching order
- Number 1 Respiratory Center in the US since 1998

Asthma Disease Management: Regression toward the Mean or Better?

David Tinkelman, MD and Steve Wilson, MA
The American Journal of Managed Care Vol. 10, No. 12 pp 948-954.

The Colorado Medicaid Asthma Disease Management Experience



"It doesn't work"

**Disease Management:
A Multi-Disciplined Approach to
Management of Health and Illness**

Focusing On:

Prevention

Early Intervention

Chronic Maintenance

The Keys to Successful DM

- **Behavioral Change**
 - Physicians
 - Patients
- **Education**
- **Self Empowerment**

Communication

- **Language**
- **Literacy Level**
- **Appropriate Time**
- **Time for Questions**
- **Empathy**

Disease Management Empowerment

- **Patient Empowerment**
 - **Ability to Understand Disease**
 - **Ability to Assess Personal Situation**
 - **Ability to Take
Effective Management Steps
at Home According to Written Plan**
 - **Resources At Home**

Green Zone: No Signs or Symptoms

Signs or Symptoms:

- Your breathing is good
- You do not have any early warning signs or asthma symptoms
- Peak Flow above 80% of personal best

What to Do:

- Take all of your medicines every day, as your doctor recommends
- Take your inhaler before exercise, as your doctor recommends

Yellow Zone: Early Warning Signs for Children and Adults

Signs or Symptoms:

- Feel more tired
- Chin or throat itches
- Dark circles under eyes
- Coughing
- Peak Flow 60%-80% of personal best

What to Do:

- Check your Peak Flow at least two times a day
- Stay away from things and places that make your asthma worse
- Take your quick-relief medicine by inhaler or nebulizer: _____

- Call your Asthma Care Manager

Yellow Zone: Early Warning Signs for Babies

Signs or Symptoms for Babies:

- Fussy
- Runny or stuffy nose
- Wants to eat less
- Restlessness
- Dark circles under eyes

What to Do:

- Give quick-relief medication by nebulizer: _____

- Call your Asthma Care Manager

Yellow Zone: Caution!

Worsening Asthma Symptoms for Children and Adults

Signs and Symptoms:

- Cough, more at night
- Wheezing
- Chest feels tight or hurts
- Breathing faster than normal
- Get out of breath easily
- Peak Flow: 60-80% of personal best

What to Do:

- Take your quick-relief medicine by inhaler or nebulizer: _____

•If you still have symptoms or your peak flow is not back to normal, take your quick-relief medicine again, as recommended by your doctor

- Call your Asthma Care Manager
- Call your Doctor and ask about taking more or other medicines. Many doctors recommend steroid pill or syrup

Yellow Zone: Caution!

Worsening Asthma Symptoms for Babies

Signs or Symptoms:

- Cough, more at night, or day
- Breathing is noisy
- Breathing faster than normal
- Will not eat because of difficulty breathing

What to Do:

- Give your baby/child the quick-relief medicine as ordered by your doctor. If your child's breathing does not improve within 15 minutes, call your doctor immediately

Red Zone: Danger!

BAD Asthma Symptoms for Children and Adults

Signs or Symptoms:

- Trouble talking, walking or thinking
- Shoulders go up
- Neck and ribs move in when breathing
- Grey or blue skin color, starting around the mouth
- Peal Flow below 60% of personal best

What to Do:

- Take your quick-relief medicine by inhaler or nebulizer NOW: _____
- Call your doctor or 911 NOW. Ask about taking steroid pills or syrup and how often to take quick-relief medicine

Red Zone: Danger!

BAD Asthma Symptoms for Babies

Signs or Symptoms:

- Wants to sit instead of lie down
- Breathing is noisy even at rest
- Neck and ribs move in with breathing
- Grey or blue skin color, starting around mouth
- Very fussy

What to Do:

- Give your child their quick-relief medicine as ordered by your doctor NOW.
- Call your doctor or 911 NOW

Colorado Medicaid Asthma Disease Management Program

- **Six month program**
- **6 Calls per enrollee**
- **Nurse Care Manager for each enrollee**
- **Written Asthma Action Plan**

Assessment Techniques

- **Claims based analysis**
- **Third party QOL assessments**
- **Control group of 446 similar asthmatics**

Activity Summary

- **1249 patients were initially identified**
- **388 were enrolled into the active treatment group**
- **258 patients have completed the program**

Unique Features of Population

- **Number of families without telephones**
- **Number of families without PCP**
- **Diversity of population between rural and urban**
- **High percentage of children**

Table 1: Demographics of Participants, Controls and the Population

Group	Age: Mean (SD) Range	Percent Males/Females
Intervention Group (N=258)	14.6 (12.2) years Range 2-53 years	48/52
Control Group (N=446)	18.4 (14.7) years Range 2-56 years	49.5/50.5
Total Asthma Population (N=17,864)	Range 1-89 years	48/52

Figure 3

NATIONAL JEWISH MEDICAL AND RESEARCH CENTER DSCM Asthma Colorado Medicaid 6 Month Utilization Data *Combined Adult and Pediatric*

N=237

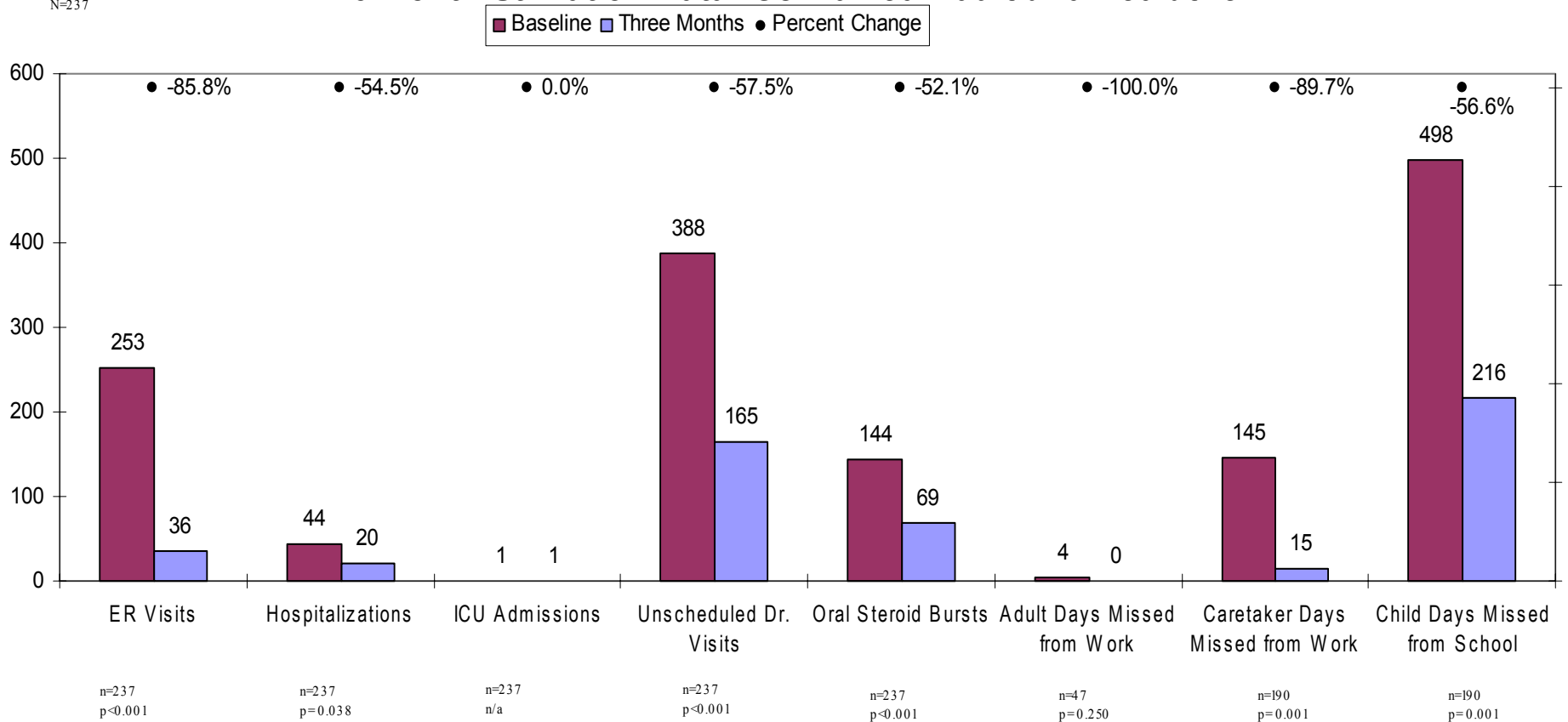


Table 2: Medicaid Population Results

Total Costs	Intervention Group (N=258)			Control Group (N=446)		
	Asthma	Non- asthma	Total	Asthma	Non- asthma	Total
Baseline Costs	\$57.87	\$294.10	\$351.97	\$62.15	\$299.64	\$361.79
Intervention Year Costs	\$32.59	\$146.58	\$179.17	\$44.50	\$206.26	\$250.75
Difference between Years	43.7%	50.2%	49.1%	28.3%	31.1%	30.7%

- **Using the Intervention Group as its own control revealed a 49.1% savings.**
- **The savings for the control group was 28.2%.**
- **The net savings was 20.9% (p<.001) for the Intervention Group beyond Controls.**

Regression to the Mean is an Important Factor in Analyzing the Results of a Disease Management Program for Asthma



While the demonstrated savings were less using a control group to correct for regression toward the mean, they were statistically significant and clinically relevant.

Disease Management for Asthma in a Medicaid Population

- **Can reduce unnecessary utilization**
- **Can improve the physiologic state of the participants**
- **Can be cost effective**

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