



Asthma 411: A school health improvement strategy

Colleen M. Richmond, RN, BSN, MPH
Emily V. Pike, MPH
Angela Hobson, MPH
Jamie Kleiss, MPH
Jamie Wottowa, MPH
Kristin D. Wilson, MHA
David A. Sterling, PhD, CIH




St. Louis Regional *Asthma Consortium*





Quick Asthma Facts

- In 2004, asthma prevalence among children was 9.1% in the St. Louis region, compared to 8.0% for all children in Missouri (<http://www.dhss.mo.gov/asthma/STLBRFSS.pdf>).
 - In St. Louis, MO, one in eleven children under the age of 18 lives with asthma, but some area schools report as many as one out of every five children has asthma (http://www.asthma-stlouis.org/asthma_facts.htm).
 - National data shows children with asthma miss on average 2.5 days of school/year MORE than children without asthma (Wang, et al, 2005).
- 





Introduction

- Controlling Asthma in Saint Louis – (CASL)
 - One of seven CDC sites for the “Controlling Asthma in American Cities Project”
 - Collaboration among:
 - Saint Louis Regional Asthma Consortium
 - Washington University
 - Saint Louis College of Pharmacy
 - Midtown Catholic Family Services
 - Saint Louis University
 - Five CASL Components
 - Community Asthma Program (CAP)
 - Pharmacy (Asthma Friendly Pharmacies)
 - Community Outreach
 - Schools (Asthma 411); A Consulting Physician-School Nurse Model
 - Evaluation of Institutionalization




Asthma 411

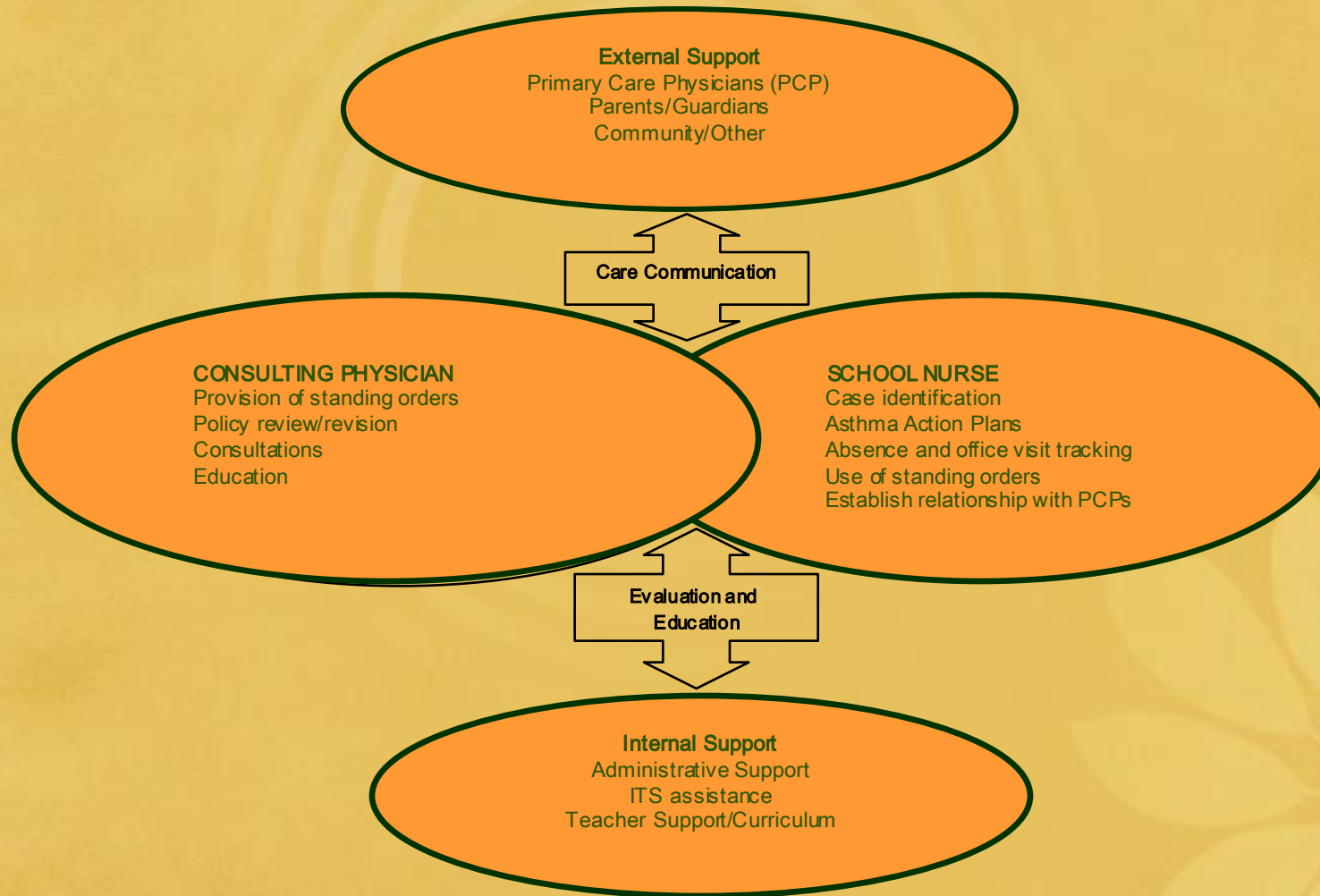
- Five urban school districts (93 schools) in St. Louis, MO area
 - Total student population ~ 49,000
 - 5-18% of population with asthma (nurse reported)
 - 80% qualify for free and reduced lunches
 - Reduced = 185% of poverty line
 - family of 4: \$37K/year
 - Free = 130% of poverty line
 - family of 4: \$26K/year
 - Transient population
- 



Asthma 411 - Objectives

- Decrease absences due to asthma
 - Decrease number of children with asthma sent home
 - Increase number of physician written Asthma Action Plans (AAPs) on file
- 

Asthma 411 Conceptual Framework






Key Indicators

- Identification of students with asthma
- Children sent home due to asthma
- Physician written AAPs
- 911 Calls
- Absences due to asthma



Results


Identification of Students with Asthma

- Statistically significant **increase** from 1st year to 2nd and 3rd years of participation
 - Year 1 to Year 2:
 - 8.7 to 9.6%
 - ($p = 0.0002$)
 - Year 2 to Year 3:
 - 9.6 to 12.7%
 - ($p < 0.0001$)
- 

Results


Children Sent Home due to Asthma

- Statistically significant **decrease** as years of participation increase
 - Year 1 to Year 2
 - 7.0 to 5.7% of children sent home due to asthma
 - ($p = 0.0004$)
 - Year 2 to Year 3
 - 5.7 to 4.7% of children sent home due to asthma
 - ($p = 0.015$)



Results

Asthma Action Plans

- Statistically significant **increase** between 1st and 3rd years of participation
 - Year 1 to Year 3
 - 21.7 to 28.8% of student with asthma have an AAP
 - (p = 0.0001)
- 



Results

911 Calls due to Asthma

- Statistically significant **decrease** in % of 911 calls due to asthma as year of participation increase
 - Year 1 to Year 3
 - 25.5 to 7.7%: ($p = 0.02$)



Results

Absenteeism (Absences due to Asthma)

- Statistically significant **decrease** in absences due to asthma in one school district
 - From 10.4 to 9.74 absence days/year for children with asthma ($p = .02$)
 - Calculates to a savings of over 600 school days/year



Conclusion

- The longer a district implements Asthma 411, the greater the improvement in asthma management.
- The decrease in children sent home and the reduction in absences may have an impact on state education reimbursement to the district because students in Asthma 411 schools remain in the classroom.
- The decrease in children sent home increases student time in the classroom which in turn effects academic achievement.
- Asthma 411 is an innovative program school districts can adopt which can have a significant impact on absenteeism and other health indicators related to asthma and illness.
- The results of this program provide evidence which supports CDC's Strategies for Addressing Asthma within a Coordinated School Health Program.



richmocm@slu.edu

Acknowledgements:

*Asthma 411 is funded by: Centers for Disease
Control and Prevention, US Department of
Health and Human Services, under Cooperative
Agreement U59/CCU723263*

