



Health Impact Statement

The Dunklin County Pediatric Asthma Control Initiative

The Missouri Asthma Prevention and Control Program

Problem

Childhood asthma prevalence and morbidity remain high. An estimated 25 million people in the United States are living with asthma, and 5.5 million of these are children less than 18 years of age.¹ In Missouri, one-half million people currently have asthma, of these > 120,000 are children.² Approximately 55% of children with asthma in Missouri are uncontrolled leading to frequent symptoms and urgent asthma attacks resulting in impairment, emergency department (ED) visits, hospitalizations, and absenteeism with lost learning opportunities for the children and time away from work for the parents.³⁻⁷ Schools offer and provide important health care services for children with asthma and their families. School health linked with community resources is a key approach to improving asthma control in pediatric populations.

Health care and school health data were used to identify areas in Missouri with a high prevalence of children with asthma and elevated county rates of hospitalizations for pediatric asthma. The pediatric asthma hospitalization rate in Dunklin County, located in southeast Missouri, was six times higher than the state rate in 2002 (Figure 1) and the Kennett Public Schools in Dunklin County with approximately 2,000 students had an estimated childhood asthma prevalence of 18% compared to the state rate of 10.9% (2010).^{8,9}



Intervention

The Missouri Asthma Prevention and Control Program (MAPCP) established a county-wide systems-based asthma program in Dunklin County that addressed asthma through linking schools, hospitals, clinics, and child care facilities. The Kennett School District Asthma Project was initiated in 2001 with the county-wide initiative beginning in 2007. Collaborating with the Asthma Ready® program at the University of Missouri, MAPCP recognizes schools, hospitals, and clinics that voluntarily commit to maintain asthma training, resources, services, communication standards, and quality improvement efforts.

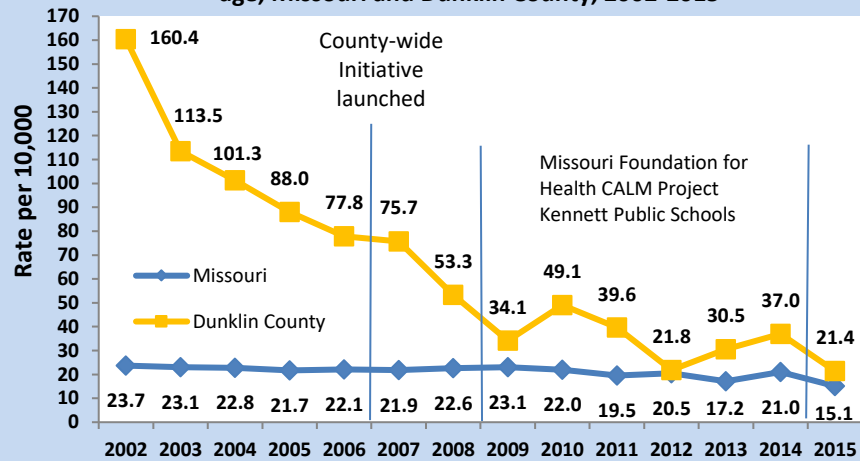
The University of Missouri Asthma Ready® program and MAPCP are training school nurses under a program called Teaming Up for Asthma Control (TUAC), an *Expert Panel Report 3* guidelines-based workforce development program in which school nurses receive asthma management training and conduct asthma assessments, deliver key self-care education messages, and refer for home environmental assessments.^{4,10} In the Kennett School District, the school nurses implemented TUAC, reviewed health inventories and conducted interviews to identify students with asthma, developed and updated asthma action plans, provided home self-management education and case management, coordinated professional education for community providers, convened monthly Grand Rounds, held Asthma Academy days where children with severe asthma and their parents received specialist asthma care, administered control medication when needed, and implemented a communication system to notify the school nurse with parent consent when a child with asthma was discharged from the ED or hospital inpatient. Asthma School Nursing Awards from MAPCP supported asthma care and management planning and education to parents and other school staff. In addition, an asthma educator followed-up with children who had poorly controlled asthma and the district employed two full-time social workers to follow-up with parents of uninsured children to determine Medicaid eligibility and assist in the application process. Other within the district and statewide initiatives have been ongoing including distribution of the Missouri School Asthma Manual and update, the Missouri Foundation for Health Childhood Asthma Linkages in Missouri (CALM) project, and MAPCP collaborating with the child care health consultants to provide education to over 3,000 child care workers on asthma and environmental issues in the child care setting.

Health Impact

Hospitalizations

Overall, the Missouri asthma hospitalization rate among children (< 18 years of age) declined 2.5% annually (2004-2015).¹¹ Among children < 15 years of age, the Dunklin County asthma hospitalization rate declined 86.7%, dropping from 160.4 (2002) to 21.4 (2015) per 10,000 children compared to a 35.3% decline in the state rate (23.7 to 15.1 per 10,000 children) for the same period (Figure 1).

Figure 1. Asthma Hospitalization Rates for Children < 15 years of age, Missouri and Dunklin County, 2002-2015



Source: Missouri Department of Health and Senior Services. Inpatient Hospitalizations MICA.

Asthma Outcomes

An evaluation of the Kennett school-based asthma initiative conducted in 2011 revealed that this comprehensive program led to significantly better asthma control among the students in this district than a similar comparison district, and among children having the most difficulty with their asthma. Of the students with poorly controlled asthma at baseline, 44.3% had well controlled asthma at follow-up and for this group lung function improved a mean of 10.1 percentage points.¹² Also noted was that a group of students (17.5%) that were well controlled at baseline, had poorly controlled asthma at follow-up indicating the importance of regular primary care visits for all children with asthma.

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