

## ***Asthma Management Program Quality Improvement Project Plan***

### **Problem Statement and Current Status**

A recent report by the Washington Department of Health<sup>1</sup> declared American Indians/Alaska Natives (AI/AN) in Washington have a higher prevalence of asthma than the general population. The burden of asthma for AI/AN is estimated to be twice the current asthma prevalence than that of the general adult population, 18% to 9%. Additionally, around 2,550 AI/AN youth have been diagnosed with asthma at some point in their lives and around 1,450 AI/AN youth currently have asthma.

Severe asthma can lead to death, and even mild asthma and its symptoms have profound impacts on the quality of life and health of an already vulnerable population. Patients who have frequent and severe asthma symptoms and evidence of airflow limitation are at greatest risk; however, fatal and near-fatal asthma exacerbations can occur sporadically and inexplicably in a minority of asthmatics whether the baseline level of disease activity is mild, moderate, or severe<sup>2,3</sup>. Therefore, any acute exacerbation of asthma may be potentially fatal. Asthma can lead to sleep disturbance, exacerbate other pre-existing chronic conditions such as diabetes and hypertension, puts limitations on an individual's physical activities, and affects the mental health status, often leading to stress and depression. Asthma management programs (AMP) may reduce costs and improve outcomes in patients with moderate to severe asthma.

The Indian Health Service has the opportunity to shift the health system in significant ways. A number of relatively new developments have converged to create this opportunity. The dramatic rise in health care costs has led many stakeholders to explore innovative ways of reducing costs and improving health. As health research continues to clarify the importance of social and environmental determinants of health and the impact of primary prevention, there is growing recognition that the current model of investment in the nation's health system is unacceptable. At the same time, technological advances and implementation of the electronic health record (EHR) create an unprecedented wealth of health data, providing new opportunities to understand and address community-level health concerns. And most important, the passage of the ACA presents an overarching opportunity to change the way healthcare is approached in the United States<sup>4</sup>.

The Yakama Service Unit is making an organized, multi-disciplinary effort to prevent and control asthma among the population it serves. Current program activities include clinical diagnosis and referral to an asthma clinic for those who are diagnosed with asthma and aged 12 years and older. The asthma clinic provides outreach and public health education, including an asthma action plan, and medical case management.

This project aims to integrate primary care and public health to improve health and expand the current efforts to include the following: perform qualitative and quantitative evaluation of individual patient improvement, expand the age group of referred patients to include 5 to 12 year olds, develop a home visit program, establish asthma surveillance to monitor population

health over time, provide technical support, training, and coordination of these activities and services with communities, other government agencies, and non-governmental organizations.

### **Objectives and Methods**

The Area Project Team (*listed in a section below*) proposes to develop and evaluate an evidence-based asthma management program. The purpose of the pilot Yakama Asthma Management Program (YAMP) is to improve patient outcomes and patient satisfaction among patients of the Yakama IHS clinic aged 5 years to adulthood. We intend to evaluate the effects of each component of the program: home-visiting program, enhanced referrals, asthma surveillance and environmental monitoring and coordination of services.

The Home Visiting Program will provide in-home coaching and environmental interventions by nurses and environmental health specialists to improve patient understanding of disease processes, personal triggers for asthma, effective use of preventive measures and appropriate use of medications to reduce asthma symptoms. *Home visit assessment forms are attached.*

Patients who present to the clinic for moderate or severe asthma (by appointment) will be offered the opportunity to participate in the expanded YAMP Home Visit program. Once enrolled in the program, they will receive at least three home visits within six months to provide assessment, medication counseling and instruction.

A key component of the effort will be to partner with the Tribal Environmental Program and Community Health Representatives (CHRs) to train the staff to be competent in conducting the home assessments - both the environmental and clinical counseling assessments.

Other objectives include ambient air quality monitoring, environmental assessments of child care centers/schools/workplaces as appropriate, and partnering with other local and federal agencies and non-governmental organizations to identify and address exposures outside the home environment.

Outcomes to be assessed after 6 months will include acute healthcare visits (hospitalizations, emergency department visits, unscheduled outpatient visits) and cost; pre- and post-evaluation of symptoms or clinical measures (e.g., pulmonary function tests, health-related quality of life [HRQOL], asthma episode self-management score [AESM], asthma symptom days, and school days missed); environmental assessment of triggers and risk factor mitigation; and patient satisfaction.

This study will also evaluate the use of the IHS electronic health record (EHR) asthma screening tool; the effectiveness of incorporating external data into the EHR and the patient's record; a cost analysis of expanding the patient group (adding referrals for ages 5 - 12), cost of home visits, and cost per home for any environmental mitigations; and the effects of ambient air quality at home and in other environments (childcare centers/schools/workplaces) on asthma patients.

Clinical outcomes will be compared to historical/baseline values. Effectiveness of other aspects of the program will be evaluated by measuring patient responses and patient satisfaction over time.

### **Activities**

- Develop home assessment and survey instrument.
- Determine protocol for home visit referrals.
  - Voluntary.
- Develop key indicators to be captured in the EHR.
  - Home assessment and survey findings to be entered as part of the patient's record.
- Conduct home assessments and surveys.
  - Each referral will receive 3-6 visits within 6 months.
- Continue home visits.
- Produce epidemiology reports.
  - These reports will be based on all available data.  
*Data will be continuously reviewed and evaluated in order to make adjustments or changes as the project proceeds.*
- Continue to evaluate outcomes.
- Implement Action Plan(s).
- Disseminate Final Report, Action Plan, and Lessons Learned to other IHS/Tribal/Urban clinical and executive staff.
- Evaluate progress, adjust and implement action plan and interventions.

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<sup>1</sup> Washington State Department of Health, Asthma Among American Indians and Alaska Natives in Washington. DOH 345-308. August 2012.

<sup>2</sup> Romagnoli M, Caramori G, Braccioni F, Ravenna F, Barreiro E, Siafakas NM, Vignola AM, Chanez P, Fabbri LM, Papi A, and the ENFUMOSA Study Group, Near-fatal asthma phenotype in the ENFUMOSA Cohort. PubMed.gov. Clin Exp Allergy. 2007 Apr; 37(4):552.

<sup>3</sup> Restrepo RD, Peters J, Near-fatal asthma: recognition and management. PubMed.gov. Curr Opin Pulm Med. 2008; Jan 14(1):13.

<sup>4</sup> IOM (Institute of Medicine). 2012. *Primary Care and Public Health: Exploring Integration to Improve Population Health*. Washington, DC: The National Academies Press.