Establishing An Asthma Follow-Up Protocol on a Native American Reservation in Montana

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Abstract

A Native American reservation in Montana is experiencing an asthma age-adjusted prevalence significantly higher than the national average. Native American healthcare on this reservation is delivered by an Indian Health Service (IHS) ambulatory healthcare clinic and a community health center. The IHS has experienced reduced funding levels for each of the past several years and current healthcare funding for Native Americans is estimated to be approximately 60% of need.

Patients who come to the IHS clinic for treatment of asthma or report to the emergency room (ER) at the community health center are not scheduled for follow-up appointments or provided environmental health services such as having their home assessed for potential asthma triggers. The typical asthma patients are treated and released at either the clinic or the community ER and return to their home or school environments where they are re-exposed to asthma triggers.

Using systems thinking methodology a two-tiered intervention was developed: the establishment of a standard follow-up protocol used by healthcare providers to effectively manage asthma cases, and; the development of a home visit program where asthma triggers can be identified in the home and education provided. These two programs would be linked through a communication mechanism between the clinicians and the environmental health services department.

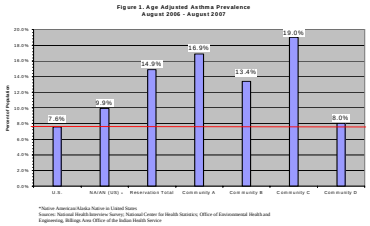
Introduction

The Native American reservation under consideration may be described as "typical" in that poverty is high and living conditions are poor. Also, it is well known that Native Americans experience numerous health disparities, many of which may be related to poverty.

The age-adjusted prevalence of asthma on a Native American reservation in Montana was found to be almost twice the prevalence of all races within the United States (Figure 1.) While there are many other health disparities such as high prevalence of diabetes and injury rates, asthma triggers can be controlled and clinical protocols can be established in order to reduce the number and severity of asthma attacks.

Problem Statement

Patients who report to the IHS clinic or the community health center ER for treatment of asthma are not scheduled for follow-up appointments or provided environmental health services such as having their home assessed for potential asthma triggers. The typical asthma patients are treated and released at the clinic and return to their home or school environments where they are re-exposed to asthma triggers.



Causal Loop Diagrams and applicable archetypes:

The system operating within this public health issue is a "Shifting the Burden"2 archetype with a balancing loop being created by the treatment of symptoms; namely, the ability to visit the emergency room (ER) and the use of quick acting inhalants to allow the patient to breathe easier. However, two long-term balancing loops exist that address the core issues: 1) a clinical protocol for asthma management (Figure 2), and; 2) elimination of asthma triggers in the home and elsewhere (Figure 3). Therefore, this author proposed two separate "Shifting the Burden" archetypes, each identical to the other except for the long-term solution. It should also be noted that for the second long-term solution, environmental health services, to engage, the first long-term solution, clinical protocol for asthma management, must be in place. This temporal relationship exists because a clinical protocol system would capture the asthma case, which would then be referred to the environmental health services (EHS) department, who could then respond by performing a home assessment to identify and potentially eliminate the triggers.

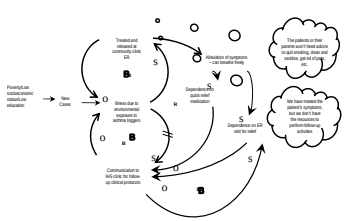


Figure 2. Shifting the Burden: Clinical Protocol for Asthma Management

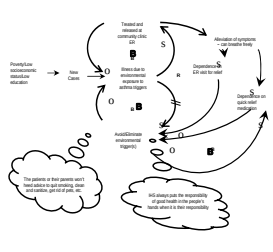


Figure 3. Shifting the Burden: Environmental Health Services

Methodology

Process Objectives:

By June 2008: With input from clinicians, environmental health personnel, executives, and other stakeholders, a policy and procedure is developed for following-up on asthma attacks with environmental etiologies. This follow-up would include the following:

1. Communication between the community health center and the appropriate IHS provider once they treat a patient for an asthma-related illness.
2. The IHS healthcare provider utilizes a standardized patient management protocol (such as the *Global Strategy for the Management and Prevention of Asthma*) and reschedules the patient for follow-up visits to monitor the patient's status using spirometry.
3. The IHS healthcare provider communicates to the Tribal Environmental Health Department that a home assessment for asthma triggers should occur. This may be formalized through a "doctor's order" format, whereby the patient is given written orders to have their home assessed.
4. Certain asthma interventional items, such as dust mite covers for pillows, will be determined to be Durable Medical Equipment (DME) thereby allowing it to be reimbursable by Medicare/Medicaid.

Conclusion

The overlying theme of this successful intervention is partnership and communication. Successful public health interventions are not achieved easily and may require simultaneous and collaborative action by several entities and individuals in order to be effective. By bringing all the partners together to discuss an issue in which they all play a role allows exposure to varying perspectives. This gives the entire team a "big picture" of the issue they would otherwise fail to see and facilitates creative interventions that incorporate all the elements present within the issue.

In this project we have been discussing asthma and its interventions; however, all the concepts presented in this project can and should be used for virtually all diseases of environmental etiology. Take, for instance, community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA). Rates of infection by this organism are rising in Indian Country and, while scientific certainties are lacking as yet, we postulate that contributing factors may be overcrowding and poor environmental hygiene in the home. To address this issue would require a virtually identical two-tiered intervention mechanism as asthma: 1) clinical protocols, and; 2) environmental health services. These two interventional arms would be linked through a formalized communication and feedback process.

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