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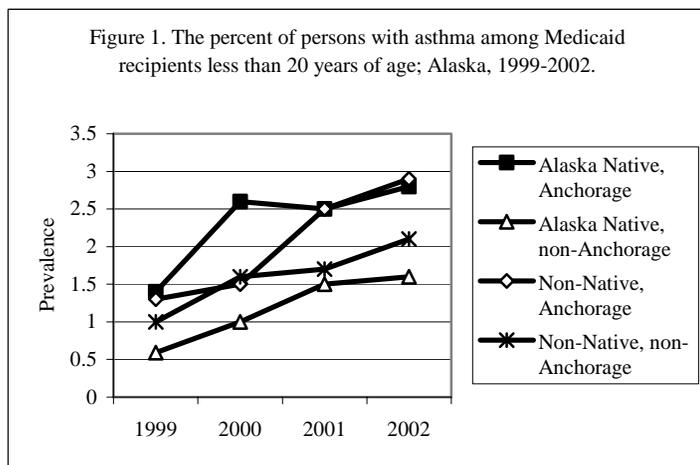
Trends in asthma prevalence, hospitalization risk, and inhaled corticosteroid use among Alaska Native and non-Native Medicaid recipients less than 20 years of age

Introduction

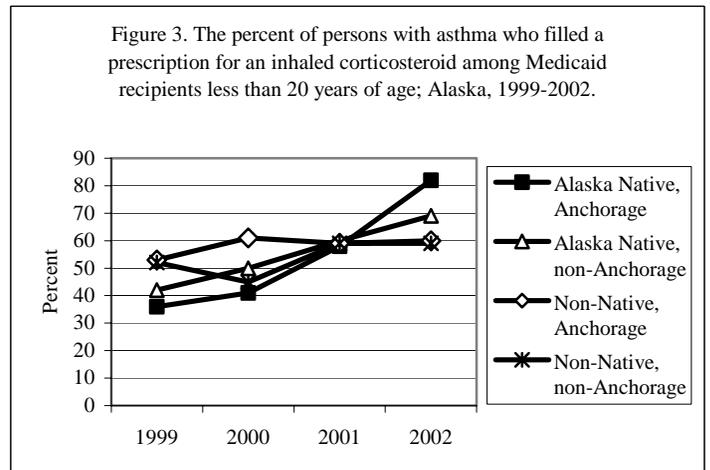
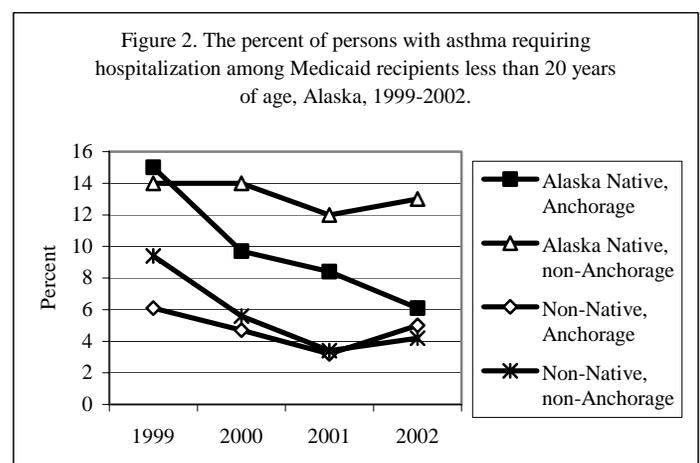
Few trend data on asthma prevalence exist for US indigenous populations and none for Alaska Natives. These data are necessary for tracking and developing appropriate intervention programs. To address this deficiency, the Section of Epidemiology conducted a retrospective review of Alaska Medicaid data. Asthma was defined as a claim for International Classification of Diseases, 9th Revision (ICD-9) codes 493.0x-493.9x plus a claim for asthma-associated medication during the same calendar year. Analysis was limited to persons <20 years of age enrolled in Medicaid during 1999-2003. Four primary risk groups were evaluated: Alaska Native Anchorage and non-Anchorage residents and non-Native Anchorage and non-Anchorage residents.

Results

Among 117,080 Medicaid enrollees, there were increases in asthma prevalence (0.96% to 2.2%, $p < 0.0001$), the percent of enrollees using steroids (0.70% to 2.0%, $p < 0.0001$), and the percent of persons with asthma using steroids (50% to 64%, $p < 0.0001$) while the percent of persons with asthma that were hospitalized decreased (9.3% to 6.8%, $p = 0.020$) (Figure 1).



The 4-year asthma prevalence was 40-90% greater for Anchorage residents regardless of Alaska Native status although yearly prevalence increased among all subgroups (Figure 2). Alaska Natives residing in Anchorage had the greatest decrease in hospitalization (Figure 3) and the greatest increase in inhaled corticosteroid use.



Within four predominantly Alaska Native census areas that each had a population of at least 5,000 and a regional hospital, the area with resident pediatricians and the most asthma education efforts had a reported 4-year asthma prevalence 5- to 11-fold higher than other areas.

Conclusions

Relatively dramatic short-term demographic and temporal increases in asthma prevalence occurred in the absence of known changes in risk factor prevalences. Additionally, prevalence was highest in Anchorage, where most education efforts have been concentrated and where all three pediatric allergy specialists practice. Finally, within relatively homogeneous rural areas, prevalence was highest where pediatricians exist and education efforts have been greatest. These data indicate a role for differences in the use of asthma as a diagnosis for respiratory illness, with decreased use particularly among rural, predominantly Alaska Native communities. Failure to diagnosis and thus treat asthma may affect outcomes as demonstrated by the identified temporal association between increased inhaled corticosteroid use and decreased hospitalization risk.

Recommendations

The results of the current study underscore the need for providers serving pediatric patients – particularly those working in rural communities – to have a high index of suspicion for diagnosing asthma.

Based on promising trends over the past 4 years, asthma educators should continue their efforts in Anchorage while increasing education programs for patients and providers in rural Alaskan communities.

Ongoing surveillance efforts should occur to monitor trends and evaluate the impact of interventions.

(Contributed by Brad Gessner, M.D., M.P.H., Section of Epidemiology.)