SPATIAL ASTHMA PATTERNS: EXPLORING TRENDS WITH MARKET POTENTIAL DATA

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WHAT IS ASTHMA?

IN A NUTSHELL...

- Asthma is a chronic lung disease that inflames and narrows the airways.
- Causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing.

In California: over 3 million people are known to have asthma and over 5 million have had it at some point in their lives.

ASTHMA PREVALENCE

ESTIMATED PREVALENCE IN SAN DIEGO COUNTY: 13.7%

ASTHMA IN SAN DIEGO

IN 2013: FOLLOWING THE HIGHWAYS?

65+ Years: Asthma ED Rates cluster around Central downtown and South regional areas

<12 Years: Asthma ED Rates cluster around Central downtown and South and Northern regional areas
RESEARCH SHOWS...

- Asthma affects people of all ages, but it most often starts during childhood.
- Among children, more boys have asthma than girls. But among adults, more women have the disease than men.
- Community characteristics and socioeconomic factors have been shown to affect vulnerability to pollution and underlying health status.
- Children, the elderly and low-income individuals suffer disproportionately from asthma.
- Allergens from dust, animal fur, cockroaches, mold, and pollens from trees, grasses, and flowers are highly associated.
- Pollutant exposure is a likely contributor to asthma, and those with asthma are also more susceptible to health impacts from pollution.

ASTHMA VULNERABILITIES

WE HAVE CONFIRMATION OF ASSOCIATIONS

2013 Annual Average Daily Traffic Volume (AADT) in San Diego County, CA

2013 Total Asthma Emergency Department Rates, in San Diego County, CA
ASTHMA VULNERABILITIES

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ASTHMA VULNERABILITIES

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2013 Percent of Population Living Below Poverty Level, in San Diego County, CA

2013 Percent of the Population on Food Stamps/SNAP, in San Diego County, CA
DO WE SEE DISEASE MAINTENANCE IN AREAS OF UNCONTROLLED ASTHMA?

- ED utilization does not capture the full burden of asthma in a community because not everyone with asthma requires emergency care, especially if they receive preventive care, avoid asthma triggers and undertake disease maintenance.

- However, there is limited state-wide monitoring of other indicators, such as planned and unplanned doctor’s visits, that might provide a better indication of overall disease burden.

- **Solution:** ESRI’s Market Potential Database for capturing healthy behaviors
ASTHMA CORRELATIONS

ARE THESE TRULY CORRELATED? YES!

- .769**

- .772**

.2963
2013 Percent of the Population Using Prescription Drug for Asthma, in San Diego County, CA

.2963 Correlation Coefficient

- Not statistically significant
- No geospatial correlation
ASTHMA CORRELATIONS

ARE THESE TRULY CORRELATED?

- .769** Correlation Coefficient
  - Statistically significant
  - Higher asthma ED rates in areas not visiting their doctor 3-5 times (yellowish areas).
ASTHMA CORRELATIONS

ARE THESE TRULY CORRELATED?

-.772** Correlation Coefficient

-Statistically significant

-Higher asthma ED rates in areas with lower percentages of Prescription Medication Insurance. (dark blue areas).
WHAT DOES THIS MEAN?

- Many of these cases are covered by Medi-Cal/Medicare. If insurance under Medi-Cal covers inhalers and other preventative measures for the most vulnerable populations, why didn’t we see asthma prescription drug use as a true correlation?

- Is access to pharmacies an issue or is it medication supply in those particular areas?

- OR are these cases utilizing the ED as first point of care still?
CONTACT INFORMATION

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