

## **Health Atlas and AI: Integration of AI-Assisted Search to Facilitate Identification of Place-Based Factors Correlated With Health Outcomes**

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### **1. Background**

The availability of publicly accessible place-based data has greatly expanded over the past decade, but data resources are spread across many different websites and organizations. [Health Atlas](#) provides a single online platform to help users explore place-based factors correlated with health outcomes; however, selecting specific variables has become more challenging for users as the list of available variables continues to grow.

### **2. Goals**

Our goal was to integrate an AI-assisted search tool into the Health Atlas platform to facilitate identification of specific variables and regions of interest.

### **3. Solutions and Methods**

Based on initial testing using OpenRouter, Gemini was selected as the AI-platform for Health Atlas. The Health Atlas team integrated an AI-assisted search bar that responds with a drop-down menu of variable and geography suggestions. Design and features were modified based on multiple rounds of user feedback. Google Analytics was set up to monitor AI-search feature use to provide insight for future development.

### **4. Outcomes**

An AI-assisted search function is now available on Health Atlas. Users can search for data on over 200 variables across five data domains: Demographics, Socioeconomic, Neighborhood, Environment, and Health and Healthcare. Data are included from all 50 states in the U.S., the District of Columbia, and Puerto Rico. Suggestions are provided based on natural language processing via large language models and are limited to variables available in the Health Atlas. Users can utilize the AI-assisted search function to zoom to specific areas, filter to specific states, view variable suggestions, select available geographic boundaries, and identify regions with high and low values for all variables.

### **5. Lessons Learned and Future Directions**

Integration of an AI-assisted search for social and structural determinants of health is feasible but requires careful prompting and guardrails to generate results that are meaningful to the user. Cancer centers across the country can leverage this tool to more easily access place-based data across multiple domains in their catchment area.

Figure:

