Adapting an Interactive Infographic to Communicate Disease Risk Factors in Environmentally Disadvantaged Communities

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The overall goal of the project is the development and demonstration of a scientifically credible process and interactive tool for visualizing associations and casual relationships between risk factors and asthma, with emphasis on disproportionate incidence of asthma within vulnerable disadvantaged communities.

The project will proceed in three phases:

1. Conduct an evidence-based assessment to identify and characterize associations and causal relationships between asthma and risk factors from various domains (chemical, environmental, biological, and social) in a conceptual model developed with collaborative input from a Multidisciplinary Expert Group (MEG) of subject matter experts and community representatives.

2. Incorporate the conceptual model into an interactive infographic tool to allow for interactive visualization, exploration, and communication of the conceptual model. Pilot testing of the infographic tool will be done with a focus group of intended users to ensure that the tool allows the users to visualize and understand potential relationships between risk factors and associations with the adverse health outcome, relative strengths of associations, quality and weight of scientific evidence of associations, and where evidence allows, relative contributions of key risk factors from each domain.

3. Disseminate the results to catalyze awareness of the usefulness of the conceptual model building process and interactive infographic tool by (1) a publicly available report, (2) availability of a web-based version of the interactive tool, and (3) presentation at a scientific conference.

Implications: This research will present, as a proof of concept, an approach and an interactive tool for visualizing associations and casual relationships between chemical and non-chemical risk factors and adverse health outcomes. The results will illustrate how future research efforts could be targeted to further develop the conceptual model, and how this approach could be adapted for use with other health endpoints.

Project start and end dates: December 2024 – July 2026

Abstract revision date: January 2025

Draft Schedule for 2025

Q4 2024	Initiate project
Q1 2025	- Develop Conceptual Model and Infographic Tool - Identify probable chemical and non-chemical risk factors and conduct the literature search to identify existing systematic reviews that have systematically evaluated specific risk factors and the disease outcome (asthma) - Identify, invite, and form the Multidisciplinary Expert Group (MEG) comprised of five subject matter experts and three representatives of community groups
Q2 2025	- Develop the initial draft (V1) of the conceptual model and circulate this to the MEG - Hold the first MEG Meeting and obtain feedback on the V1 model - Start the revisions to the VI model to address feedback from the MEG
Q3 2025	- Complete revisions and issue the V2 model - Hold the second MEG Meeting and obtain feedback on the V2 model - Start the revisions to the V2 model to address feedback from the MEG - Complete revisions and issue the V3 model
Q4 2025	- Subject the V3 model to independent peer review - Revise V3 model to address peer review comments - Develop the plan for testing the V3 infographic tool with the Focus Group -- and if time allows before 2024 December holidays -- hold the Focus Group meeting