

Health and Equity in Transportation Health Impact Assessments: A Retrospective Analysis

Transportation Emissions and Health Equity: Research Perspectives


CARTEEH Webinar

Mary A. Fox, PhD, MPH

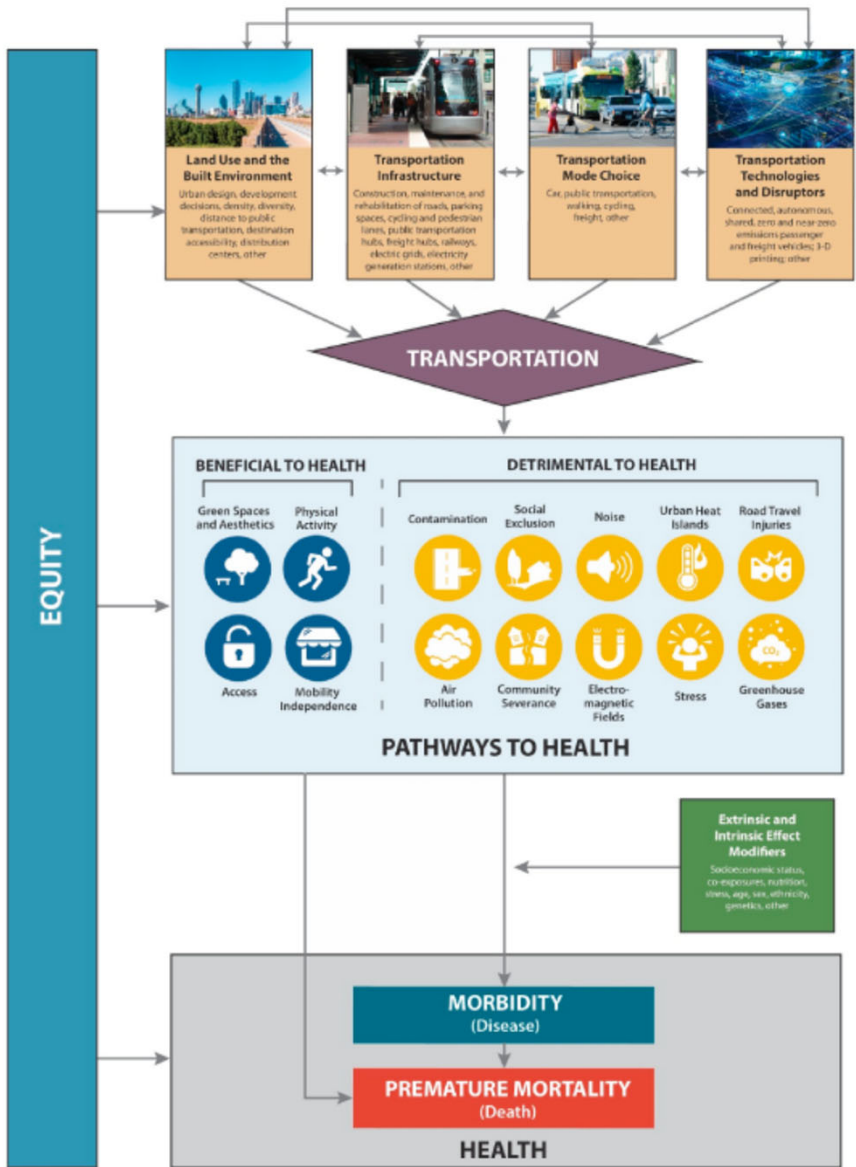
Shruti Sinkar, MSPH

Melanie Bechard, MD, MPH




JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

**Risk Sciences and
Public Policy Institute**



Glazener, A., Sanchez, K., Ramani, T., Zietsman, J., Nieuwenhuijsen, M. J., Mindell, J. S., Fox, M., Khreis, H. (2021). Fourteen pathways between urban transportation and health: A conceptual model and literature review. *Journal of Transport & Health*, 21. doi: 10107010.1016/j.jth.2021.101070

Motivation

- Center for Advancing Research on Transportation Emissions, Energy and Health (CARTEEH)
 - Training and translation
 - US Infrastructure Investment and Jobs Act
 - HIA is an important tool in the public health arena
 - How has it been used in transportation sector? How many of the 14 pathways are routinely included?
 - How has equity been included?
- Goal: Advance the practice.



Sample and Approach

Mined the Health Impact Project database

- 440+ HIAs

- 136 transportation HIAs (as of June 2021)

- 49 (36%) had an outcome statement or recommendations to be analyzed

- 3 excluded: discontinued, missing, incomplete

Text search and data extraction protocol

Analysis

- Stratified by government level

- Occurrence of 14 pathways and methods used

- Description of equity topics and methods used



Summary of the sample and equity 'gap'

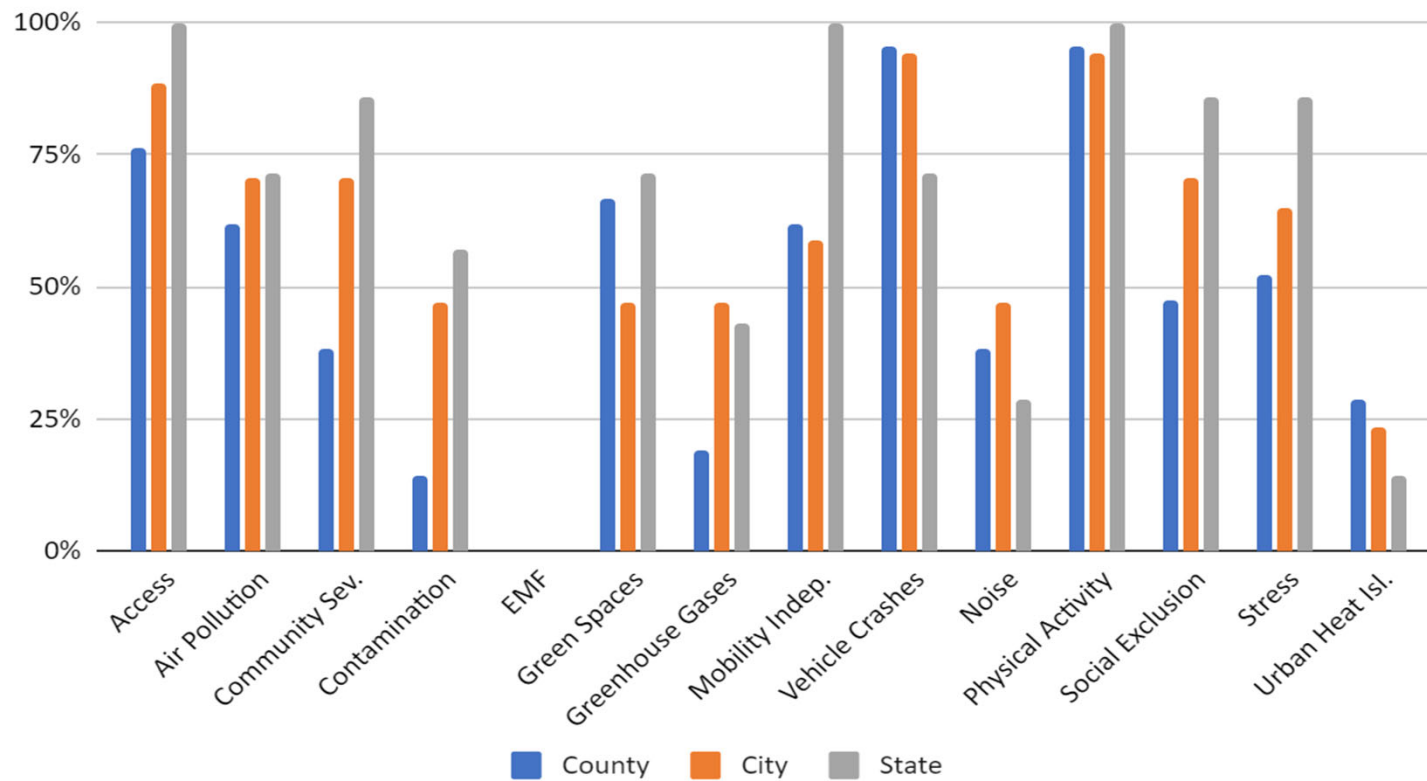
Government level	Number (%)	Average Number of Pathways Included (Range)	Number with Health Recommendations (%)	Number with Equity Recommendations (%)
City	18 (38)	8 (2, 13)	18 (100)	12 (71)
County	21 (47)	7 (1, 11)	21 (100)	13 (62)
State	7 (16)	9 (6, 12)	7 (100)	4 (57)
Total	46 (100)	8 (1, 13)	46 (100)	29 (63)



Equity gap



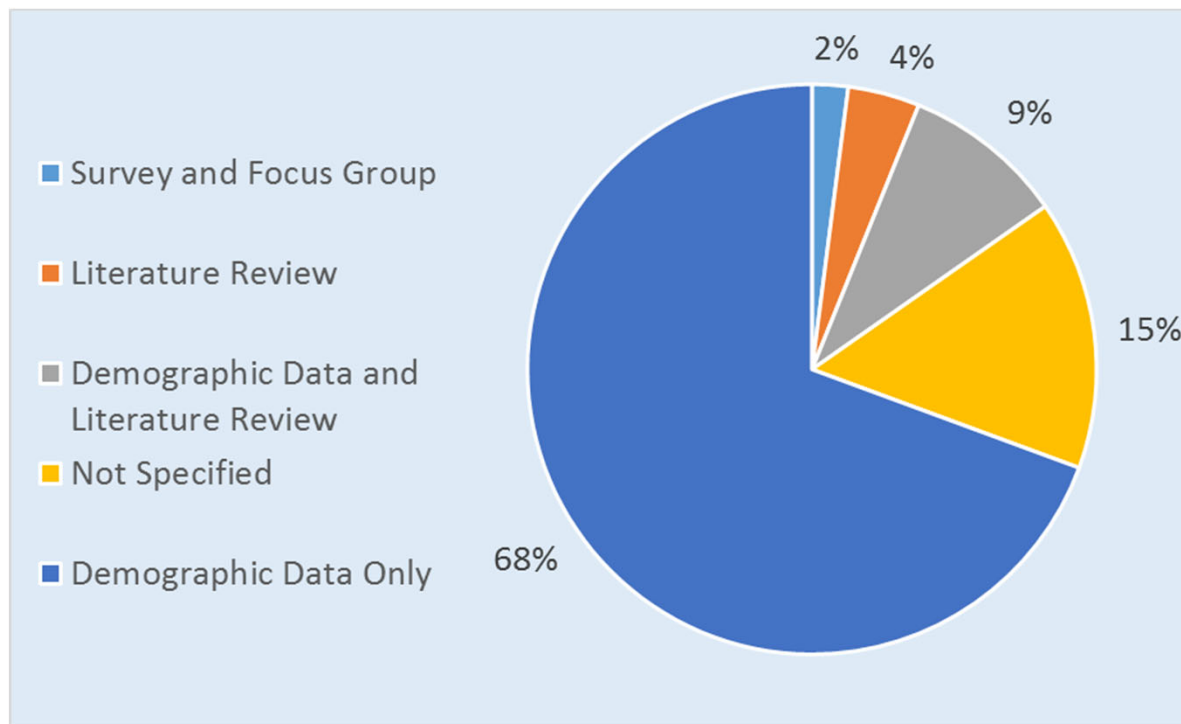
Pathways by level of government



Equity topics and example recommendations

Equity Topic	Recommendations
Increased access	<ul style="list-style-type: none"> Prioritize pedestrian/bike infrastructure in high-risk areas Implement chaperone programs for senior citizens Increase healthcare access for vulnerable populations Prioritize low SES communities for electric buses
ADA-Compliance	<ul style="list-style-type: none"> Increased seating for individuals with disabilities ADA-compliant designs Increase diverse transportation options for vulnerable populations
Advance equity with certain metrics or methods:	<ul style="list-style-type: none"> Utilize equity metrics for resource allocation Utilize “social equity” for resource allocation Utilize environmental justice impact assessment Monitor use of discounts by low-income and other vulnerable populations
Increase diversity	<ul style="list-style-type: none"> Remove language barriers Increase diversity in transportation user groups
Food	<ul style="list-style-type: none"> Provide transportation options to healthy food sources, farmers markets Place transit near emergency food shelters
Housing	<ul style="list-style-type: none"> Build mixed income housing to ensure low SES communities are not displaced
Jobs and social activities	<ul style="list-style-type: none"> Increase employment opportunities for vulnerable populations Increased social activity for youth and older adults

Data and methods for equity analyses



Occurrence of health pathways in HIA sample



Pathway (% of HIAs reviewed)
1. Physical Activity (96)
2. Motor Vehicle Crashes (91)
3. Access (84)
4. Mobility Independence (67)
5. Air Pollution (67)
6. Social Exclusion (62)
7. Green Spaces and Aesthetics (60)
8. Stress (60)
9. Community Severance (58)
10. Noise (37)
11. Contamination (33)
12. Greenhouse Gases (33)
13. Urban Heat Islands (24)
14. Electro-magnetic Fields (0)



Getting to 14 pathways in HIAs

Methods exist, not used

- Noise
- Heat
- Contamination

Need methods development or transfer

- Greenhouse gases (GHG)
- Electro-magnetic fields (EMF)

Advancing equity in HIA

Analysis

Go beyond census/demographics

Primary data collection, focus groups, community engagement

HIA implementation

Last steps of HIA, monitoring and evaluation (M&E) often skipped or ignored

It's about resources, training, follow-up

Pew. (2021). HIAs and Other Resources to Advance Health-Informed Decisions. Retrieved from <https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2015/hia-map?sortBy=relevance&sortOrder=asc&page=1>



Recommendations

Research

- Study health effects of EMF related to new charging technologies
- Develop tools to assist HIA practitioners with noise, GHG, EMF

Practice

- Encourage HIA teams to collect local data whenever possible and especially primary data on equity concerns
- Encourage HIAs to make equity recommendations
- Create links to the human health risk assessment community to assess chemical contaminants
- Continue emphasis on monitoring and evaluation for HIAs

Policy

- State and local policies to encourage and expand the use of HIA to inform transportation and other infrastructure decision making

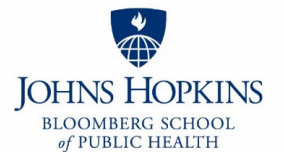


Thanks!

mfox9@jhu.edu

Find this work at:

<https://doi.org/10.1016/j.jth.2023.101675>



**Risk Sciences and
Public Policy Institute**