

Health impacts of air pollution in Fresno, California

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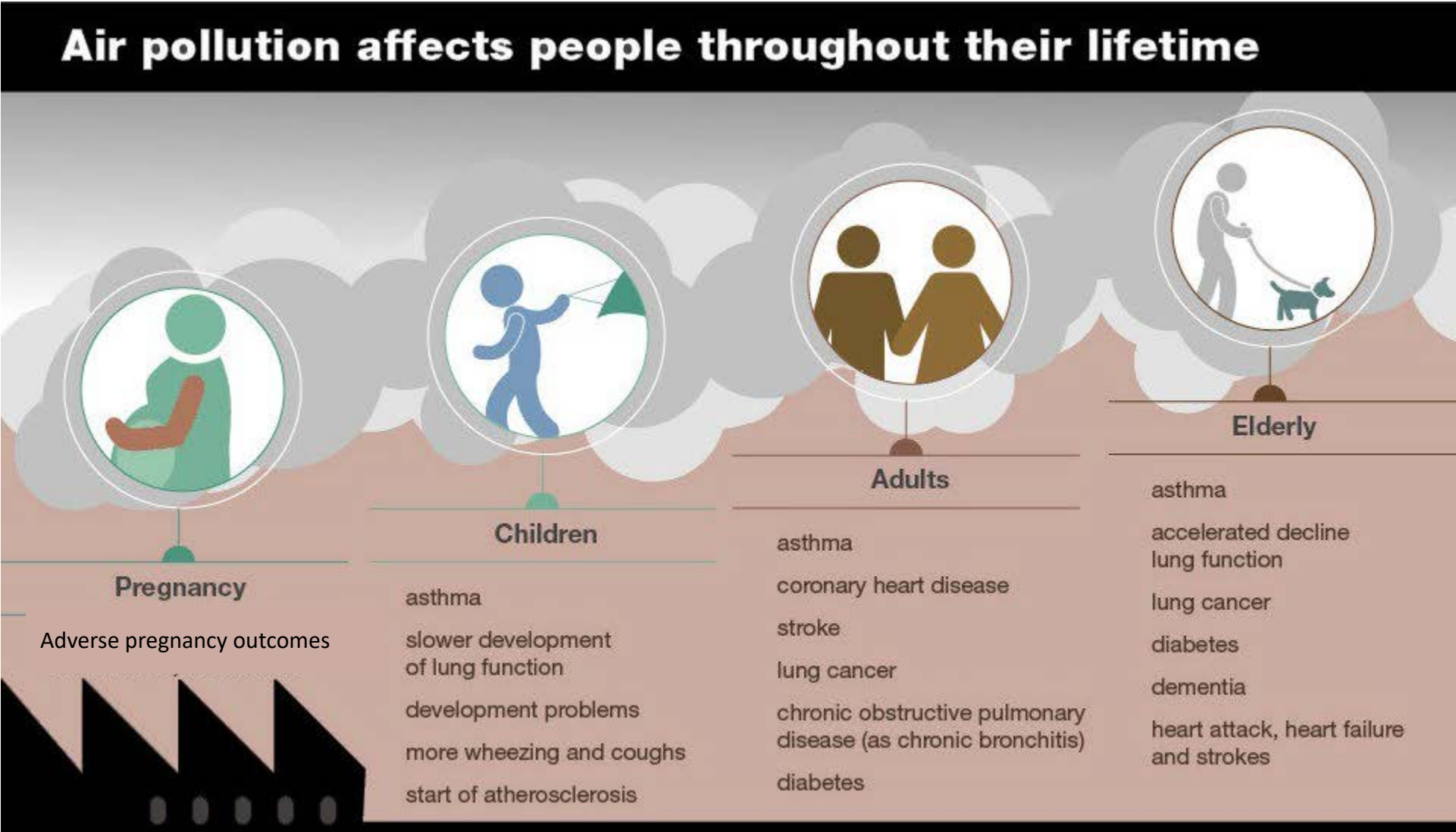


Outline

- Problem statement
- Objectives
- Methods
- Timeline



Problem statement



Problem statement

Cities with the most pollution in the US, 2020 “State of the Air” report

Short-term particle pollution

1. Fresno-Madera-Hanford, California
2. Bakersfield, California
3. San Jose-San Francisco-Oakland, California
4. Fairbanks, Alaska
5. Yakima, Washington
6. Los Angeles-Long Beach, California
7. Missoula, Montana
8. Redding-Red Bluff, California
9. Salt Lake City-Provo-Orem, Utah
10. Phoenix-Mesa, Arizona

Year-round particle pollution

1. Bakersfield, California
2. Fresno-Madera-Hanford, California
3. Visalia, California
4. Los Angeles-Long Beach, California
5. San Jose-San Francisco-Oakland, California
6. Fairbanks, Alaska
7. Phoenix-Mesa, Arizona
8. El Centro, California
9. Pittsburgh-New Castle-Weirton, PA-OH-WV
10. Detroit-Warren-Ann Arbor, Michigan

Ozone pollution

1. Los Angeles-Long Beach, California
2. Visalia, California
3. Bakersfield, California
4. Fresno-Madera-Hanford, California
5. Sacramento-Roseville, California
6. San Diego-Chula Vista-Carlsbad, California
7. Phoenix-Mesa, Arizona
8. San Jose-San Francisco-Oakland, California
9. Las Vegas-Henderson, Nevada
10. Denver-Aurora, Colorado



Problem Statement

- Fresno has higher rates of multiple health outcomes compared to the rest of the state

Selected health outcomes	Fresno	CA
Infant mortality (per 1000)	5.9	3.9
Preterm birth (%)	10	8
Childhood asthma (%)	21	14
Childhood asthma hospitalization (per 10,000)	15.3	8.3
Adults with heart disease (%)	7	5.9

- **Few studies have evaluated the impact of air pollution on health in Fresno, California**



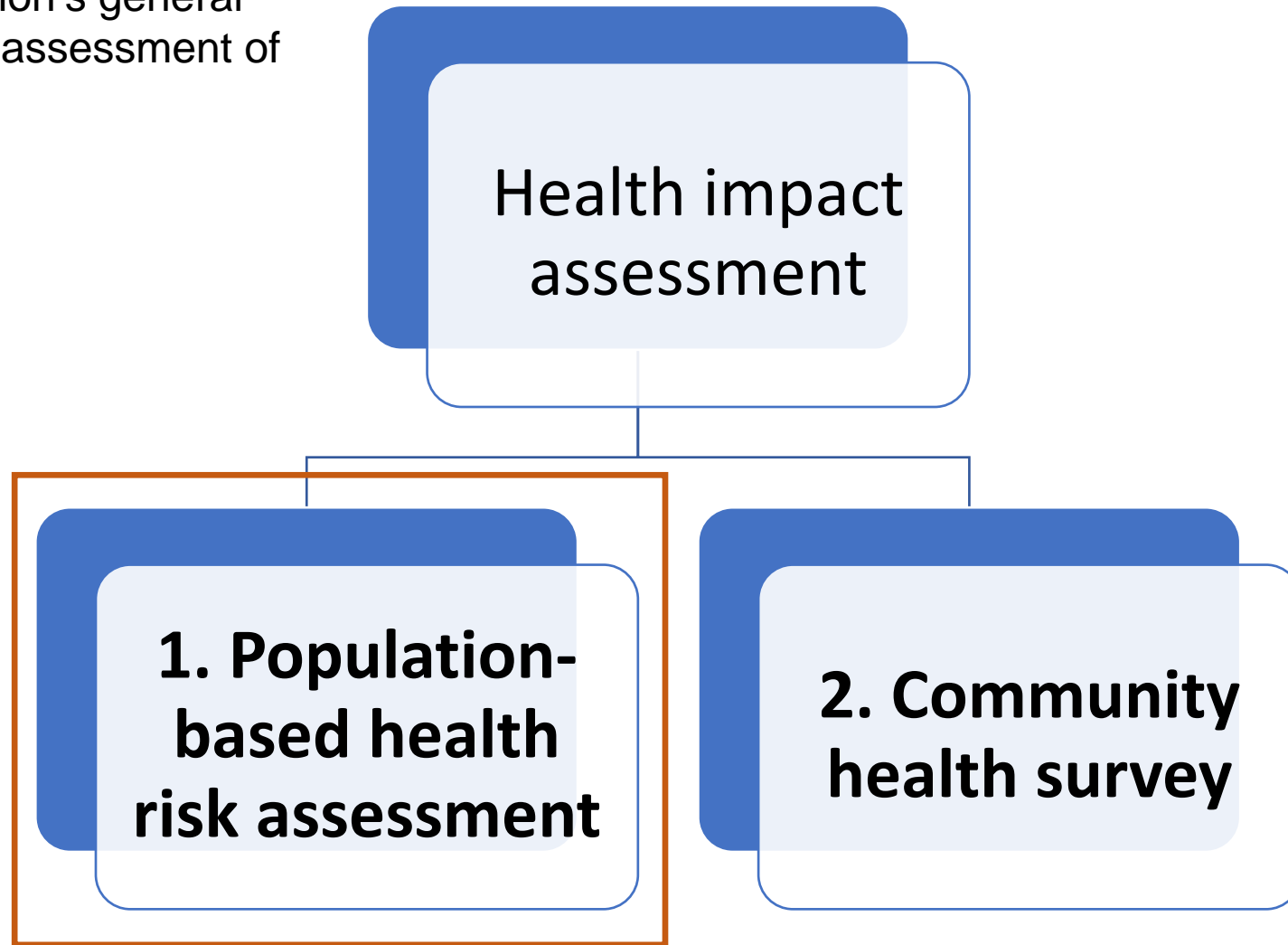
Aims

- 1. Assess the extent to which air pollution impacts the risk of common health outcomes across the lifespan in Fresno, CA.**
- 2. Calculate the excess number of cases that are attributed to air pollution in the city**
- 3. Explore residents' concerns, health outcomes, and needs that are relevant to air pollution in the region**



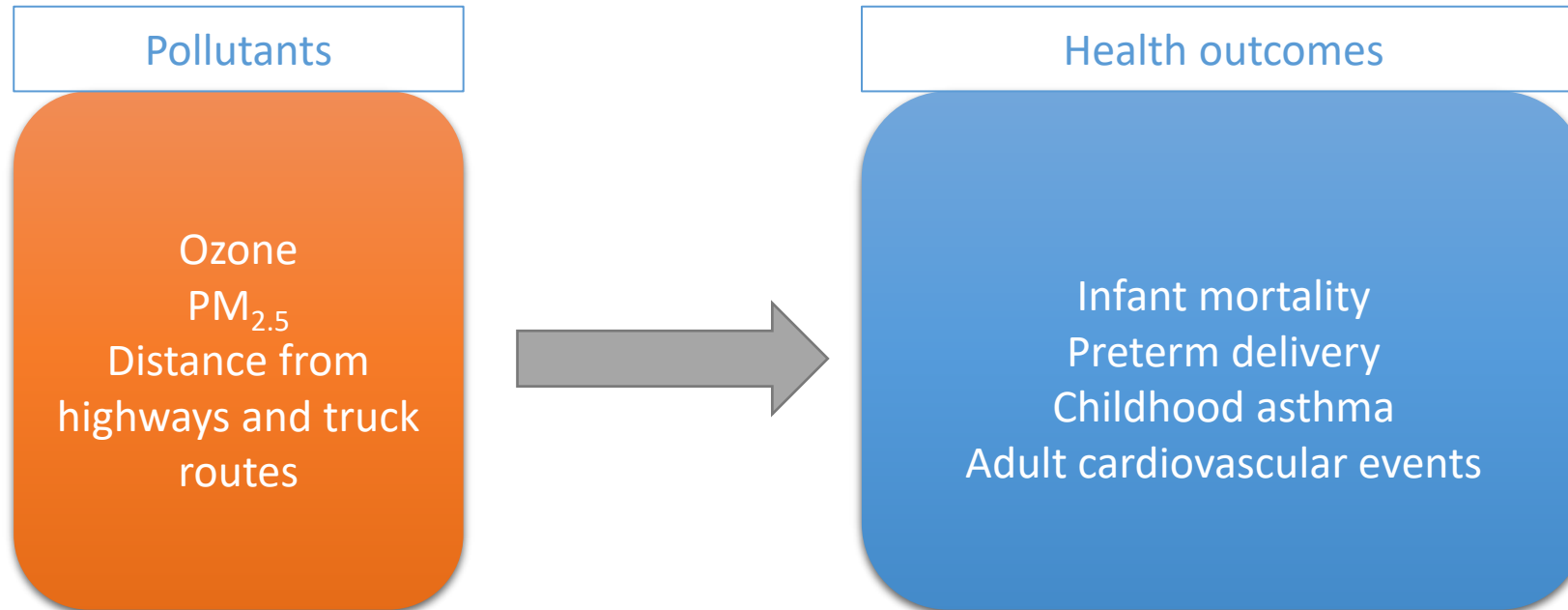
Methods

World Health Organization's general principles of health risk assessment of air pollution



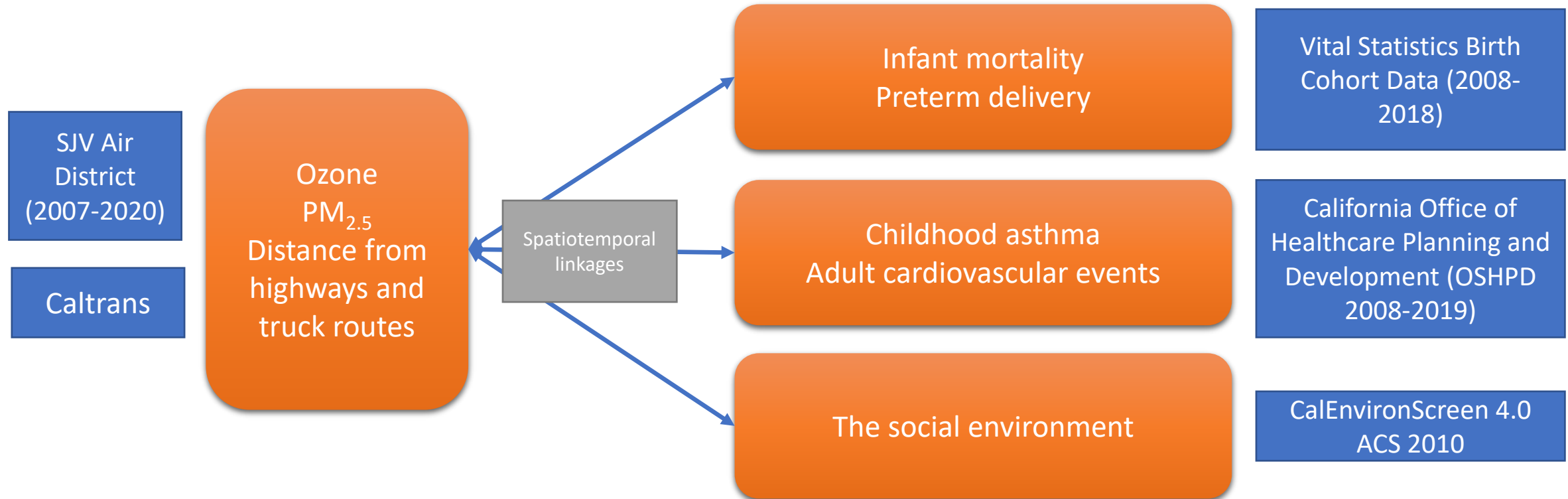
1. Population-based health risk assessment

- Goal: estimate the impact of **common pollutants** on **health across the lifespan**, and identify susceptible subpopulations



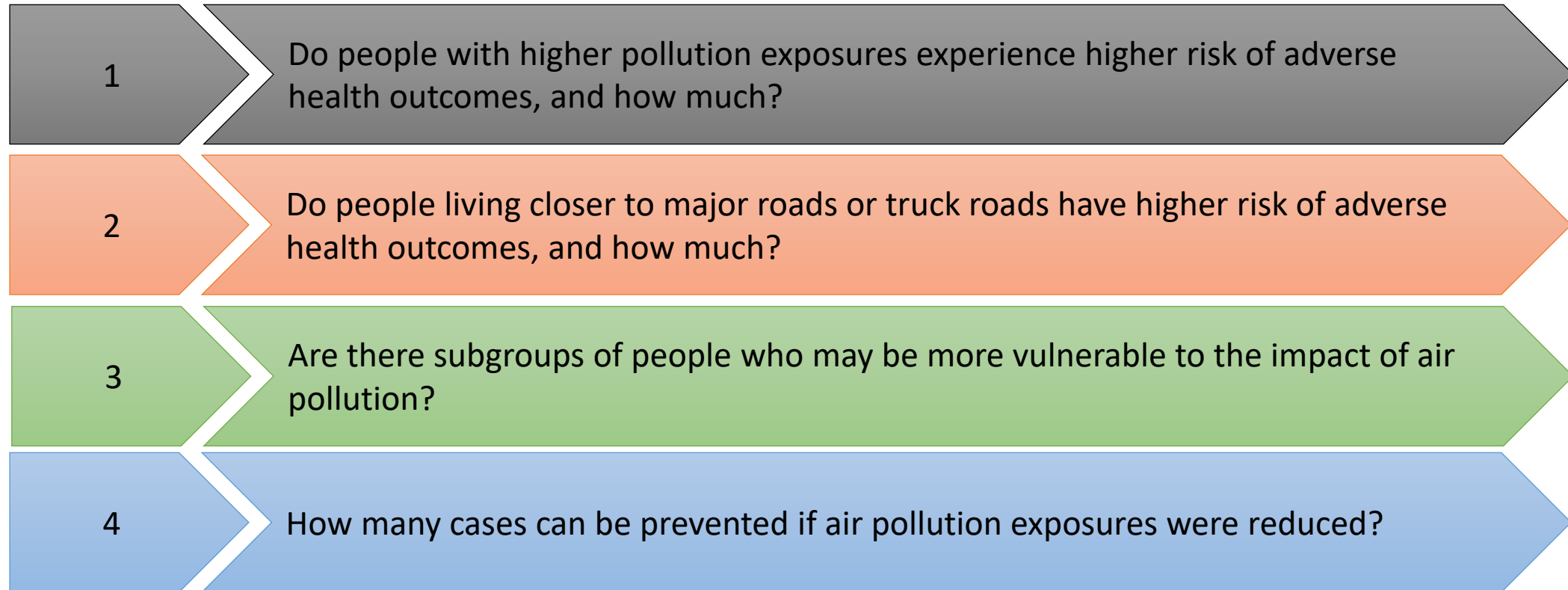
1. Population-based health risk assessment

- Goal: estimate the impact of common pollutants on health across the lifespan

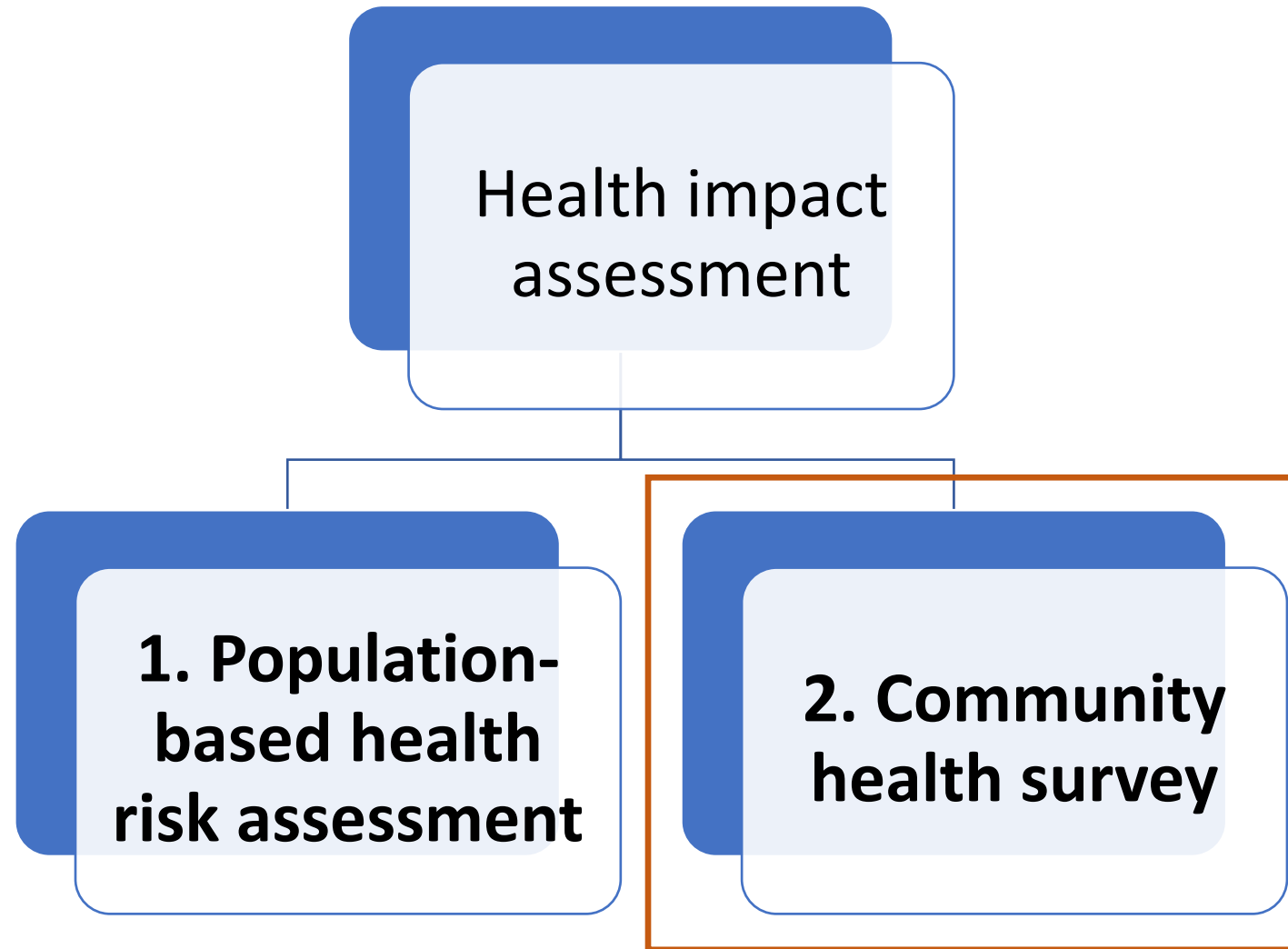


1. Population-based health risk assessment

- Resulting linked dataset will answer:



Methods



2. Community health survey

- **Goal: to further understand residents' health experience relevant to air pollution exposures in the region**



2. Community health survey

- **Study sample: >1000 Fresno residents**
- **The survey we will be administered by trained interviewers**



2. Community health survey

- **Some questions that can be answered:**

1.

Are there differences in health outcomes among residents living closer/further from the proposed distribution center?

2.

What environmental issues are residents most concerned about?

3

How are residents' knowledge and perception about health risk related to air pollution? Where do they get their information from?

4

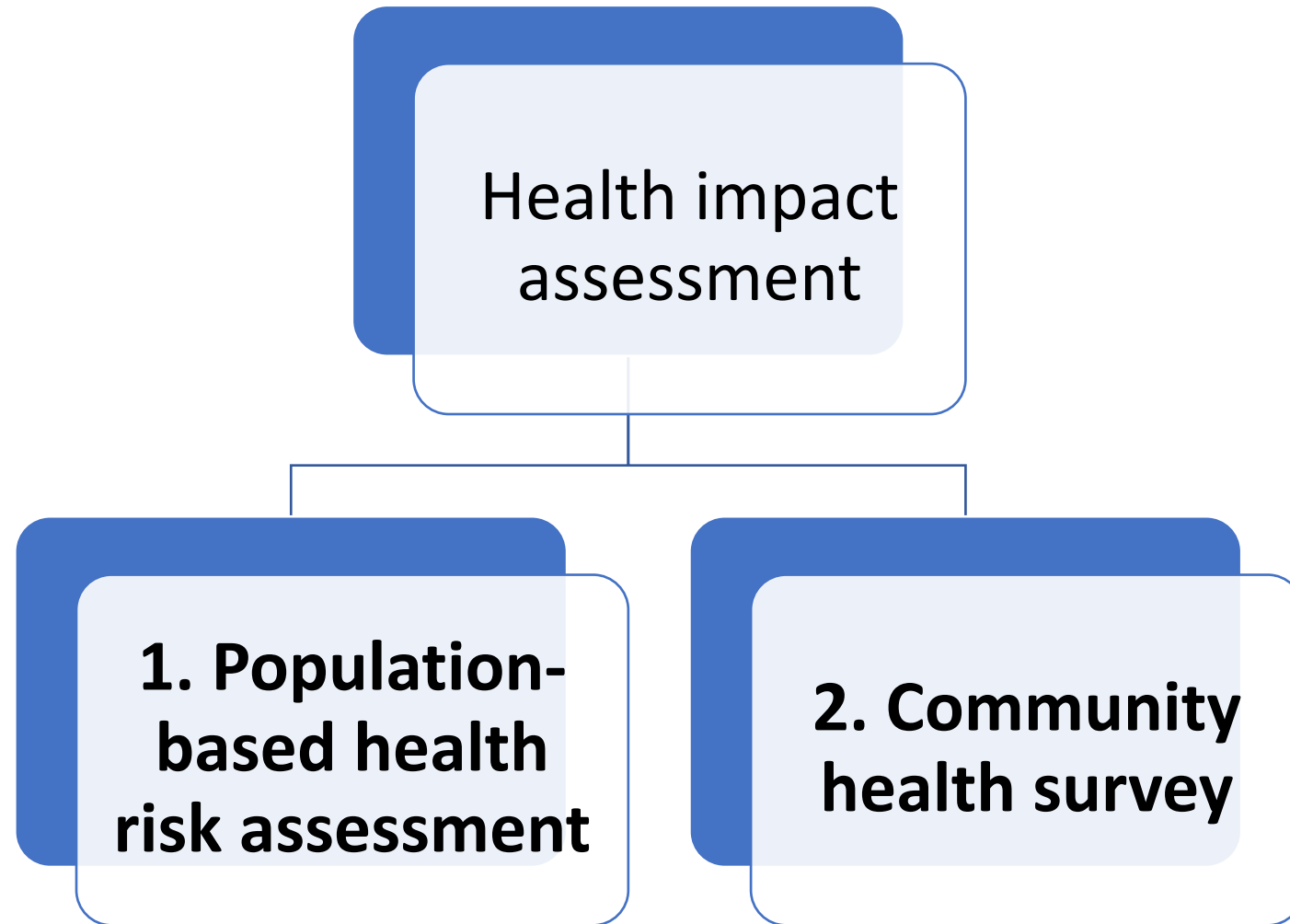
What are the health needs among residents, particularly related to air pollution exposures?

5

What are residents doing to protect themselves against pollution exposure?



Summary



Provides population-based estimates that are useful for health impact estimation, policy decisions, and community planning

further support policy decisions and intervention efforts



Timeline

Activities	2021		2022												2023						
	Q2	Q3	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	
Finalize scope of work	→																				
Assemble an interdisciplinary team	→	→																			
Start weekly meetings with team	→	→																			
Survey design	→	→																			
IRB and data requests	→	→																			
Receipt of data			→																		
Geocode birth certificate data				→	→																
Health needs assessment survey *					→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	X	
Data management and linkage (Vital statistics)					→	→															
HRA 1 (adverse pregnancy outcomes)						→	→	→	→	→	→	→	→	→	→	→	→	→	→	X	
Data management and linkage (OSHPD)																					
HRA 2 (childhood asthma)												→	→	→	→	→	→	→	→	X	
HRA 3 (cardiovascular events)																				→	X

