Pathway diagram showing links between roadway/rail grade separations and health.
Pathway diagram showing links between freeway expansions and health.
Pathway diagram showing links between zero tolerance discipline policy in schools and health.

**Zero Tolerance policy in schools**
- student suspension or expulsion

**Upstream issues**
- drop respect for law enforcement
- drop connection with institution and education in general
- drop education
- increase social stigma

**Intermediate outcomes**
- increase misbehavior at school
- increase future criminal activity
- increase dropping out of school
- drop ability to get jobs
- drop perceived as “cool” by friends
- increase perceived to be loitering

**Health outcomes**
- drop perception of safety in school
- increase injuries and death
- decrease money for health-supporting resources
- decrease income
- increase short-term validation of behavior and social cohesion/belonging
- increase continue cycle of misbehavior, punishment, and negative health outcomes
- increase health disparities
Pathway diagram showing links between zero tolerance discipline policy in schools and health.

- **Policy** → **Upstream issues** → **Intermediate outcomes** → **Health outcomes**

- **Zero Tolerance policy in schools** → **student sent to juvenile justice system**

- **Violence & gang activity** → **Injuries & suicides**

- **Overcrowding in jails** → **Stress, alienation, anxiety** → **Mental health** → **Infectious disease**

- **Sexual abuse** → **Obesity and chronic diseases**

- **Unsanitary conditions** → **Exercise** → **Health outcomes**

- **Access to medical care** → **Social support** → **Political power**

- **Family cohesion** → **Social cohesion**
Pathway diagram showing links between alternative discipline policies in schools and health.

Policy → Upstream issues → Intermediate outcomes → Health outcomes

- Teaching students conflict resolution skills
- Educating teachers on classroom management and conflict resolution
- Counseling and behavioral support
- Positive Behavioral Interventions and Supports (PBIS) or Restorative Justice

- Upstream issues:
  - Misbehavior at school
  - School safety
  - Education
  - Self esteem and sense of belonging
  - Individual social skills

- Intermediate outcomes:
  - Ability to get jobs
  - Income
  - Money for health-supporting resources
  - Future criminal activity
  - Injuries and death

- Health outcomes:
  - Positive mental health outcomes
  - Individual, school, and community safety and well being

Alternative responses such as Positive Behavioral Interventions and Supports (PBIS) or Restorative Justice.
In-prison health impacts of incarcerating youth as adults

Policy → Upstream issues → Intermediate Outcomes → Health Outcome

Upstream issues:
- ↑ rape, fighting
- ↑ Use of solitary confinement
- ↑ Alienation
- ↑ Stress & anxiety
- ↑ Infectious disease
- ↑ Injury & Death

Intermediate Outcomes:
- ↓ Access to medication
- ↓ Suicide
- ↓ Mental health outcomes
- ↓ Health outcomes

Not incarcerated:
- ↓ Access to health care
- ↓ Education (e.g., vocational & special ed)

See slide 4
Re-entry health impacts of incarcerating youth as adults

Policy → Upstream issues → Intermediate Outcomes → Health Outcome

16-18 year olds tried as adults

Incarcerated
- ↓ Access to health insurance
- ↓ Education
- ↓ Ability to get jobs
- ↓ Respect for law enforcement
- ↓ Access to housing

Not incarcerated
- ↓ Health Outcomes
- ↓ Mental Health Outcomes
- ↓ Nutrition
- ↑ Recidivism
- ↑ Injuries
- ↓ Mortality

↑ Use of ER

Intermediate Outcomes
- ↓ Income
- ↓ Involvement in criminal activity
- ↑ Homelessness

Health Outcome

See slide 4
Community health impacts of incarcerating youth as adults

16-18 year olds tried as adults

Incarcerated

↑ Crime

↑ Homelessness

↑ Recidivism

GO BACK TO Slide 1

↑ Injuries

↑ Premature mortality

↑ Stress

↓ Community-wide income levels

↓ Family Cohesion

↓ Social and Community Cohesion

↑ Single-parent families

↓ Social Support

↓ Political Power

↑ Poverty

↓ Mental Health Outcomes

↑ Cardiovascular disease

↓ Nutrition

↓ Health Outcomes

Not incarcerated

See slide 4
Health impacts if youth are tried but not incarcerated

Policy → Upstream issues → Intermediate Outcomes → Health Outcome

16-18 year olds tried as adults → Not incarcerated

- Youth Development Centers
- Community-based residential programs
- Probation
- Juvenile Detention
- Drug Treatment
- Mental Health Treatment
1. Air Pollutant Effects

- Project construction
  - Construction equipment
  - Greenhouse gases
  - Climate change
  - Delta in air pollutants: (PM 2.5, NOx, Ozone, Benzene, Diesel PM, Acrolein, other mobile air toxics)
  - Delta in air quality-related diseases:
    - Low birth weight, pre-term birth
    - Asthma/other respiratory disease
    - Cardiovascular disease
    - Cancer
  - Delta in noxious odors and unsightly environment
  - Delta in walking, biking, recreation
  - Chronic disease

- Delta in cars, trucks, and other equipment due to project activity
  - Delta in car and truck volume at project site, on local roads and freeways
  - Delta in vehicle speeds on freeways

- Delta in infrastructure to accommodate project activities
  - Delta in buffer between residents and project/related infrastructure
  - Delta in proximity of people to air pollution
  - Delta in inhalation of pollutants (see above)

The following 7 pages include pathway diagrams showing links between port expansion and health.
2. Noise Effects

- Project construction
  - Construction equipment
  - Δ in infrastructure to accommodate project activities
  - Δ in buffer between residents and project/related infrastructure
  - Δ in proximity of people to noise sources
  - Δ in noise levels near project (and along freeways)
  - Δ in perception (e.g., recognizable, dangerous, controllable, necessary)
  - Δ in exposure (measured as peak hour, 24-hour/cumulative, long-term, time of day)

- Δ in cars, trucks, and other equipment due to project activity
- Δ in car and truck volume at project site, on local roads and freeways

- Δ in health outcomes:
  - Hypertension
  - Annoyance
  - Sleep disturbance
  - Cardiovascular disease
  - Stroke
  - Kidney failure
  - Reduced helping behavior
  - Increased aggression
  - Hearing impairment
  - Tinnitus
  - Functional impairment
  - Accidents and injuries
  - Increased fatigue
  - Depression
  - Decreased performance
  - Cognitive impairment (reading, recall, recognition, and attention)

- Δ in neighborhood livability
(see Neighborhood Livability)
3. Traffic Volume Effects

- Health impacts of stress include: poor mental health, increased inflammatory response, decreased immune response
- Health impacts of chronic disease includes: heart disease, diabetes, hypertension,
- Health impacts of delayed emergency response times include: stress, potential for survival and recovery
4. Displacement Effects

Direct or indirect displacement resulting from project activities

- Δ in homelessness
- Δ in housing quality
- Δ in housing expenditures
- Δ in access to jobs and services
- Δ in business environment
- Δ in social support/cohesion
- Δ in schools

Δ in living conditions
- Overcrowding
- Mold/mildew
- Sewage
- Vectors

Δ in poverty and inability to meet basic needs
- Healthy food
- Transportation
- Healthcare
- Child care
- Employment

Δ in sense of stability and belonging

- Stress
- Chronic disease
- Infectious disease
- Child development outcomes

- Health impacts of stress include: poor mental health, increased inflammatory response, decreased immune response
- Health impacts of chronic disease includes: heart disease, diabetes, hypertension
5. Employment Effects

- Health impacts of mental health include: stress-related illness, substance abuse, decrease in lifespan
- Health impacts of chronic disease includes: heart disease, diabetes, hypertension,
6. Neighborhood Infrastructure Effects

- Δ in ability to care for basic needs (childcare, health care, education, retail)
- Δ in places for physical activity and recreation
- Δ in food choices
- Δ in social networks (see Neighborhood Livability)
- Δ in local economy
- Δ in vehicle miles traveled to reach resources
- Δ in air pollution (see Air Quality)
- Δ in education outcomes
- Δ in preventative care
- Δ in physical activity
- Δ in nutrition
- Δ in access to jobs, income & benefits (see Employment)

- Stress
- Communicable and chronic disease
- Poverty

- Health impacts of stress include: poor mental health, increased inflammatory response, decreased immune response
- Health impacts of chronic disease includes: heart disease, diabetes, hypertension,
- Living in poverty is associated with a number of poor health outcomes
7. Effects from Changes in Neighborhood Livability

- Project activity
  - Δ in environmental hazards (real and perceived) (see Air, Noise, and Water)
  - Δ in neighborhood infrastructure (e.g., libraries, parks) (see Neighborhood Infrastructure)
  - Direct or indirect displacement (see Displacement)
  - Δ Local Economy (see Employment)

- Δ in community livability (real and perceived)
  - Δ in migration patterns (e.g., wealthier residents leave)
  - Δ in material & social support
  - Δ in business investment
  - Δ in property values
  - Δ in investment in public & private infrastructure

- Δ in individual and community wealth
- Δ in concentrated poverty and other demographics
- Blight
- Δ in crime/safety (real and perceived)
- Δ in social networks

- Health outcomes include injury and morbidity from crime; stress-related illness; effects from lack of social cohesion; effects from lower incomes (e.g., from lack of access to jobs, education, etc.); increased risk of injury/death from lack of police and fire protection and others