Neighborhood Trauma: Costs to Community and Costs of Care
What is Neighborhood Trauma?
# Social Determinants

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**Health Outcomes**

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations
- No health insurance
- Did not receive needed health care
- No recent dentist visit
- Pneumococcal vaccinations
- Influenza vaccinations
- Diabetic eye exams
- Diabetic lipid profile
- Diabetic HbA1c testing
- Biennial mammography

- Cigarette smoking
- Smoking during pregnancy
- Physical inactivity
- Overweight and obesity
- Low fruit and vegetable consumption
- Binge drinking
- Teen birth rate
- Sexually transmitted disease
- Violent crime
- Motor vehicle crash deaths

- High school graduation rate
- Level of education
- Household poverty
- Divorce rate

- Lead poisoned children
- Housing built before 1950
- Nitrate levels in water
- Air quality
Costs to Community

**DALY**
Disability Adjusted Life Year is a measure of overall disease burden, expressed as the cumulative number of years lost due to ill-health, disability or early death

\[ \text{DALY} = \text{YLD} + \text{YLL} \]

- **YLD**: Years Lived with Disability
- **YLL**: Years of Life Lost

Healthy life \[\Rightarrow\] Disease or Disability \[\Rightarrow\] Early death
Community and Costs of Care
1. Can we create models that drive investment and innovation into communities addressing trauma prevention – intervention?

2. What does success look like like? Empirically? Qualitatively?
Can we create models that drive investment and innovation into communities addressing trauma prevention – intervention?
Can we create models that drive investment and innovation into communities addressing trauma prevention – intervention?
2 What does success look like like? Empirically? Qualitatively?
Unique Ratio of Trauma = $UTR_{Trauma}$

$$UTR_{Trauma} = \frac{\text{Incidence of Trauma}_{All \text{ in period } -t}}{\text{Incidence of Trauma}_{Unique \text{ in period } -t}} \quad \text{In reference period}$$

Saved Unique Trauma ($SAV_{UT}$) = number of saved trauma events for n periods

$$\sum_{t=1}^{n} (\text{Expected Unique Trauma in period } -t - \text{Observed Unique Trauma in period } -t)$$

Cost Savings Trauma ($CSAV_{UT}$) = Saved Costs to systems (e.g. hospital) due

$$CSAV_{UT} = SAV_{UT} * \text{Costs Unique Trauma}$$
Costs of Targeted Intervention = $\text{CINT}_{\text{UT}}$

Costs to develop and deliver intervention; Costs to measure/analyze intervention; costs for sustainability;

Benefits Costs Ratio ($\text{BCR}_{\text{UT}}$) = $\text{CSAV}_{\text{UT}} / \text{CINT}_{\text{UT}}$

Benefits Costs Difference ($\text{BCR}_{\text{UT}}$) = $\text{CSAV}_{\text{UT}} - \text{CINT}_{\text{UT}}$
Solutions Forward?