

# The Impact of Hunger in America

A silhouette of a young child, possibly a toddler, is shown in profile on the right side of the image. The child is holding a dark, shallow bowl or plate. The background is a soft, warm, golden-brown gradient, suggesting a sunset or sunrise. The overall mood is contemplative and somber, reflecting the theme of hunger.

**WEBINAR: Nov. 16, 3-4 pm ET**

*Hosted by CRN's Nutrition Access Task Force*

*Open to all members*



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University of Louisville  
Associate Trauma Medical Director and  
Associate Program Director  
General Surgery and Vice-Chair  
Kentucky Committee on Trauma

# Food Insecurity from a New Perspective

## **Keith Miller, M.D., FACS**

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University of Louisville

Associate Trauma Medical Director and Associate Program Director  
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Kentucky Committee on Trauma

# The Impact of Hunger in America:

## Linking Food Insecurity and Gun Violence



Keith R. Miller MD FACS

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University of Louisville Department of Surgery  
Trauma/ Critical Care



UL Hospital | Trauma Center

# Disclosures

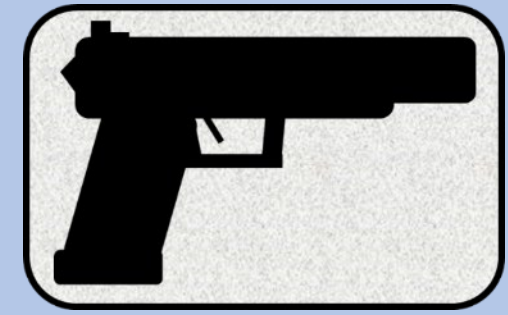


- Faculty – Nestle Nutrition Fellowship- not relevant
- I'm a Surgeon- relevant
- I'm not a Public Health Expert- relevant





## Talking Points...



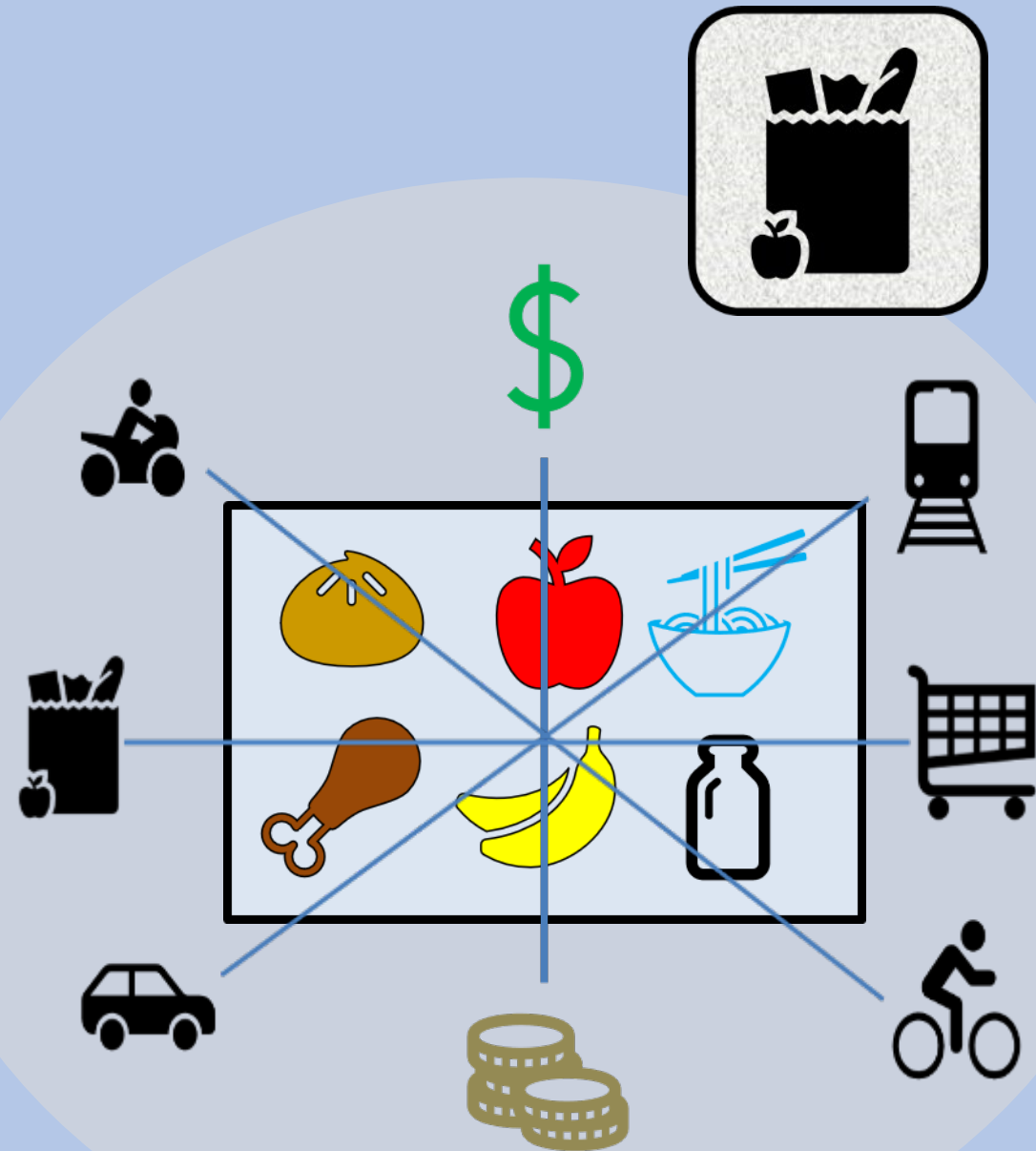
1. Food access, not production, is the central issue in the United States
2. Examine the relationship between food security and violence at geopolitical and neighborhood levels
3. Discuss how a history of targeted disinvestment has led to the concentrated emergence of multiple public health issues in a subset of the American population
4. Explain why a trauma surgeon has anything to say about this issue
5. Appreciate that targeted investment in these same communities can have a synergistic affect and address multiple public health issues simultaneously

# Food Insecurity

Food Security: physical and economic access to food that meets dietary needs as well as food preferences

Food Insecurity: the disruption of food intake or eating patterns because of .....

Food Access: A function of the affordability of foods and spatial availability (transportation)

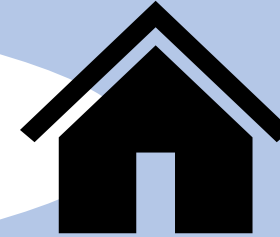


# Food Insecurity: Prevalence

Applied at the household or individual level.

Prevalence in US:

- 11.1-12% of households in 2017 and 2018 <sup>1</sup>



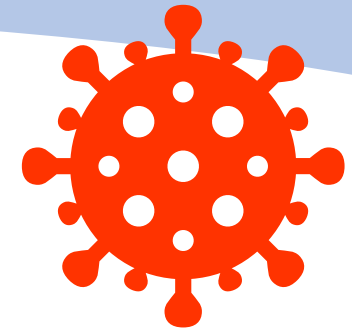
Prevalence across multiple countries <sup>2, 3</sup>

Canada (7.7%),  
European Union (8.7%),  
United States (15%)

Japan (15.7%),  
Australia (21.7%)

Substantially increased with the COVID pandemic <sup>4</sup>

43% Louisiana, 36% Mississippi, and 118% Kentucky



1. Coleman-Jensen et al. U.S. Department of Agriculture, Economic Research Service. 2019.

2. Gentilini U. [www.ids.ac.uk/publications/banking-on-food-the-state-of-food-banks-in-high-income-countries](http://www.ids.ac.uk/publications/banking-on-food-the-state-of-food-banks-in-high-income-countries).

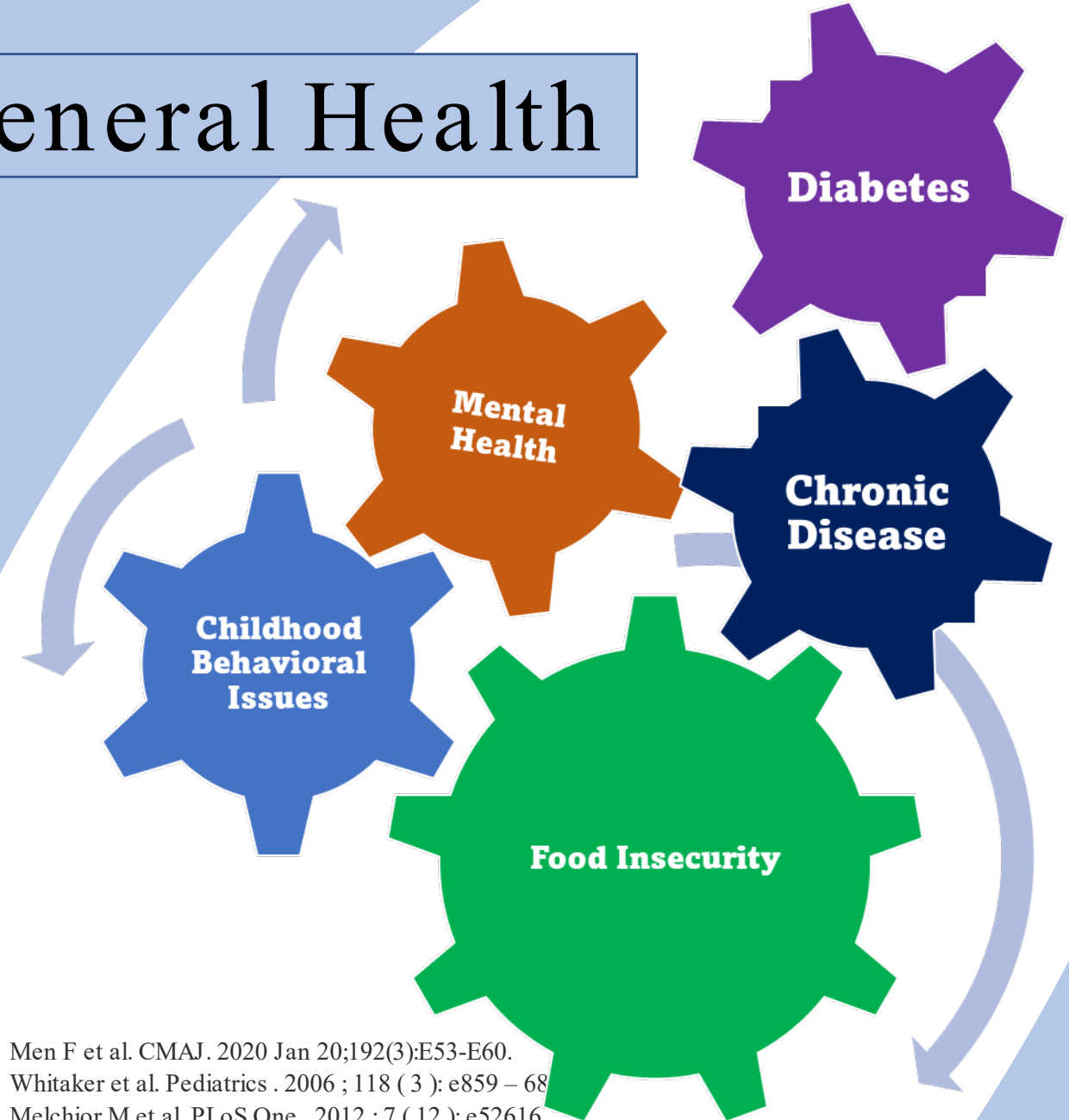
3. Pollard C et al. IJER. vol. 16,10 1804. 21 May. 2019, doi:10.3390/ijerph16101804.

4. Meyersohn N. CNN Business; 2020. <https://www.cnn.com/2020/06/09/business/food-deserts-coronavirus-grocery-stores/>.

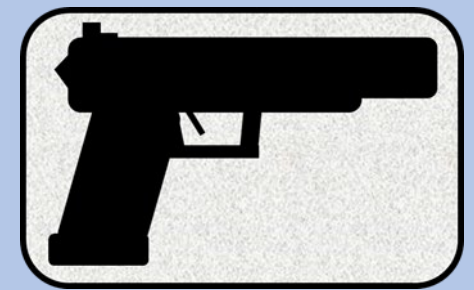
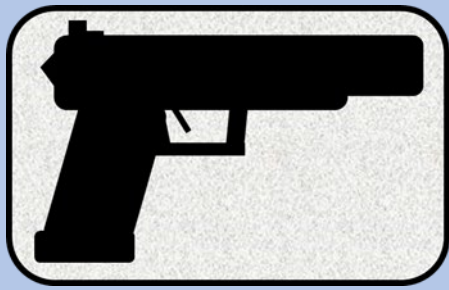


# Food Insecurity and General Health

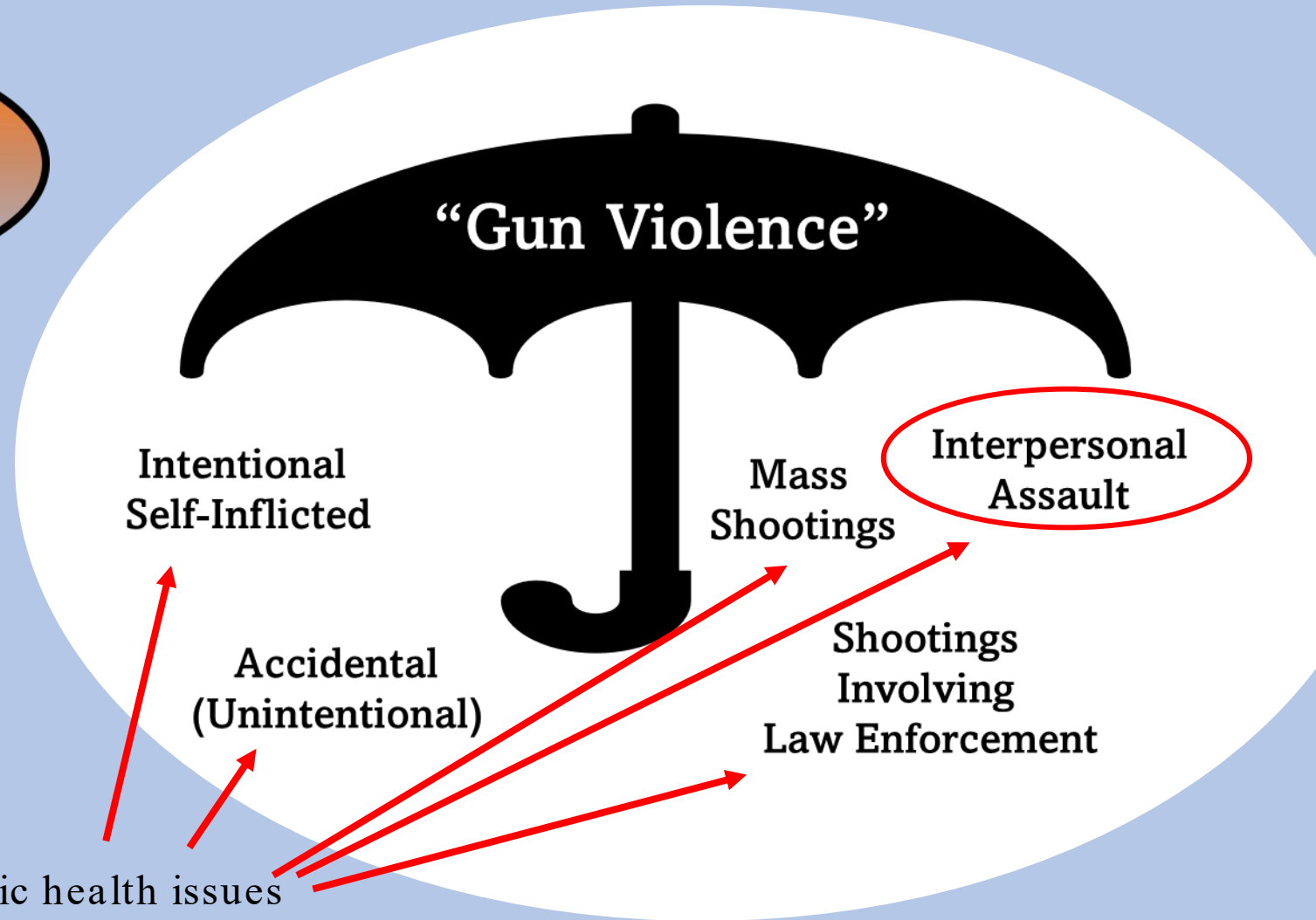
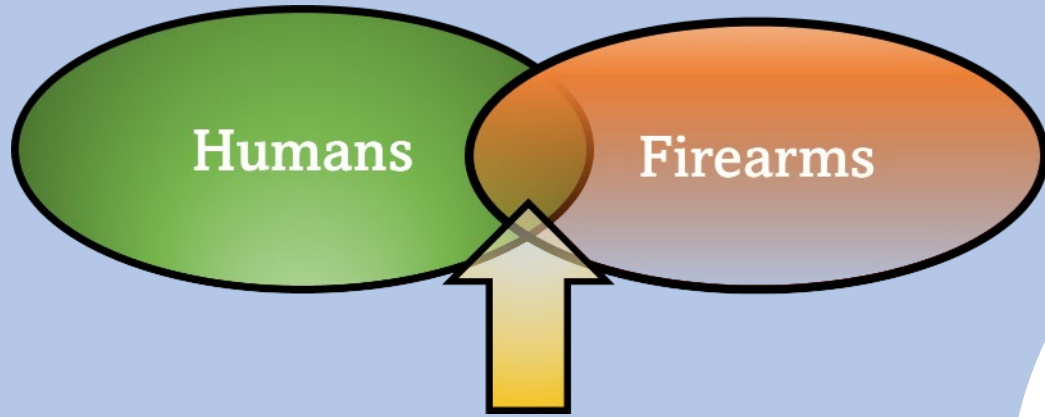
- Linked to nearly every health outcome
- Canadian Community Health Survey (2005 to 2017)
  - 1 in 8 households
  - Die 9 years earlier
  - Increased mortality across all causes of death, except cancer
  - Strongest association with accidents, suicide, infection
- Causality difficult to determine
  - many overlapping confounders
  - (poverty, unemployment, and other socioeconomic determinants of health)



Men F et al. CMAJ. 2020 Jan 20;192(3):E53-E60.  
Whitaker et al. Pediatrics . 2006 ; 118 ( 3 ) : e859 – 68  
Melchior M et al. PLoS One . 2012 ; 7 ( 12 ) : e52616  
Seligman HK et al. J Gen Intern Med . 2007 ; 22 ( 7 ) : 1018 – 23.  
Seligman HK et al. J Nutr . 2010 ; 140 ( 2 ) : 304 – 10 .  
Gundersen C et al. , Ziliak JP. Health Aff (Millwood). 2015 Nov;34(11):1830-9.



# “Gun Violence”



**JACS** Journal of the American College of Surgeons

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INVITED CONTRIBUTION

**The Necessity of Sub-Typing Firearm Injury to Facilitate an Overdue Public Health Approach to Gun Violence**

Miller, Keith R MD, FACS  
Author Information

Louisville, KY

“Gun Violence” is multiple distinct public health issues


# Firearm Death: Disease of the Young


## 10 Leading Causes of Death by Age Group, United States 2018


Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 4,473	Unintentional Injury 1,226	Unintentional Injury 734	Unintentional Injury 692	Unintentional Injury 12,044	Unintentional Injury 24,614	Unintentional Injury 22,667	Malignant Neoplasms 37,301	Malignant Neoplasms 113,947	Heart Disease 526,509	Heart Disease 655,381
2	Short Gestation 3,679	Congenital Anomalies 384	Malignant Neoplasms 393	Suicide 596	Suicide 6,211	Suicide 8,020	Malignant Neoplasms 10,640	Heart Disease 32,220	Heart Disease 81,042	Malignant Neoplasms 431,102	Malignant Neoplasms 599,274
3	Maternal Pregnancy Comp. 1,358	Homicide 353	Congenital Anomalies 201	Malignant Neoplasms 450	Homicide 4,607	Homicide 5,234	Heart Disease 10,532	Unintentional Injury 23,056	Unintentional Injury 23,693	Chronic Low. Respiratory Disease 135,560	Unintentional Injury 167,127
4	SIDS 1,334	Malignant Neoplasms 326	Homicide 121	Congenital Anomalies 172	Malignant Neoplasms 1,371	Malignant Neoplasms 3,684	Suicide 7,521	Suicide 8,345	Chronic Low. Respiratory Disease 18,804	Cerebro-vascular 127,244	Chronic Low. Respiratory Disease 159,486
5	Unintentional Injury 1,168	Influenza & Pneumonia 122	Influenza & Pneumonia 71	Homicide 168	Heart Disease 905	Heart Disease 3,561	Homicide 3,304	Liver Disease 8,157	Diabetes Mellitus 14,941	Alzheimer's Disease 120,658	Cerebro-vascular 147,810
6	Placenta Cord. Membranes 724	Heart Disease 115	Chronic Low. Respiratory Disease 68	Heart Disease 101	Congenital Anomalies 354	Liver Disease 1,008	Liver Disease 3,108	Diabetes Mellitus 6,414	Liver Disease 13,945	Diabetes Mellitus 60,182	Alzheimer's Disease 122,019
7	Bacterial Sepsis 579	Perinatal Period 62	Heart Disease 68	Chronic Low Respiratory Disease 64	Diabetes Mellitus 246	Diabetes Mellitus 837	Diabetes Mellitus 2,282	Cerebro-vascular 5,128	Cerebro-vascular 12,789	Unintentional Injury 57,213	Diabetes Mellitus 84,946
8	Circulatory System Disease 428	Septicemia 54	Cerebro-vascular 34	Cerebro-vascular 54	Influenza & Pneumonia 200	Cerebro-vascular 567	Cerebro-vascular 1,704	Chronic Low. Respiratory Disease 3,807	Suicide 8,540	Influenza & Pneumonia 48,888	Influenza & Pneumonia 59,120
9	Respiratory Distress 390	Chronic Low. Respiratory Disease 50	Septicemia 34	Influenza & Pneumonia 51	Chronic Low. Respiratory Disease 165	HIV 482	Influenza & Pneumonia 956	Septicemia 2,380	Septicemia 5,956	Nephritis 42,232	Nephritis 51,386
10	Neonatal Hemorrhage 375	Cerebro-vascular 43	Benign Neoplasms 19	Benign Neoplasms 30	Complicated Pregnancy 151	Influenza & Pneumonia 457	Septicemia 829	Influenza & Pneumonia 2,339	Influenza & Pneumonia 5,858	Parkinson's Disease 32,988	Suicide 48,344


Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.  
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



 A leading cause of death in the 1<sup>st</sup> through 5<sup>th</sup> decades of life

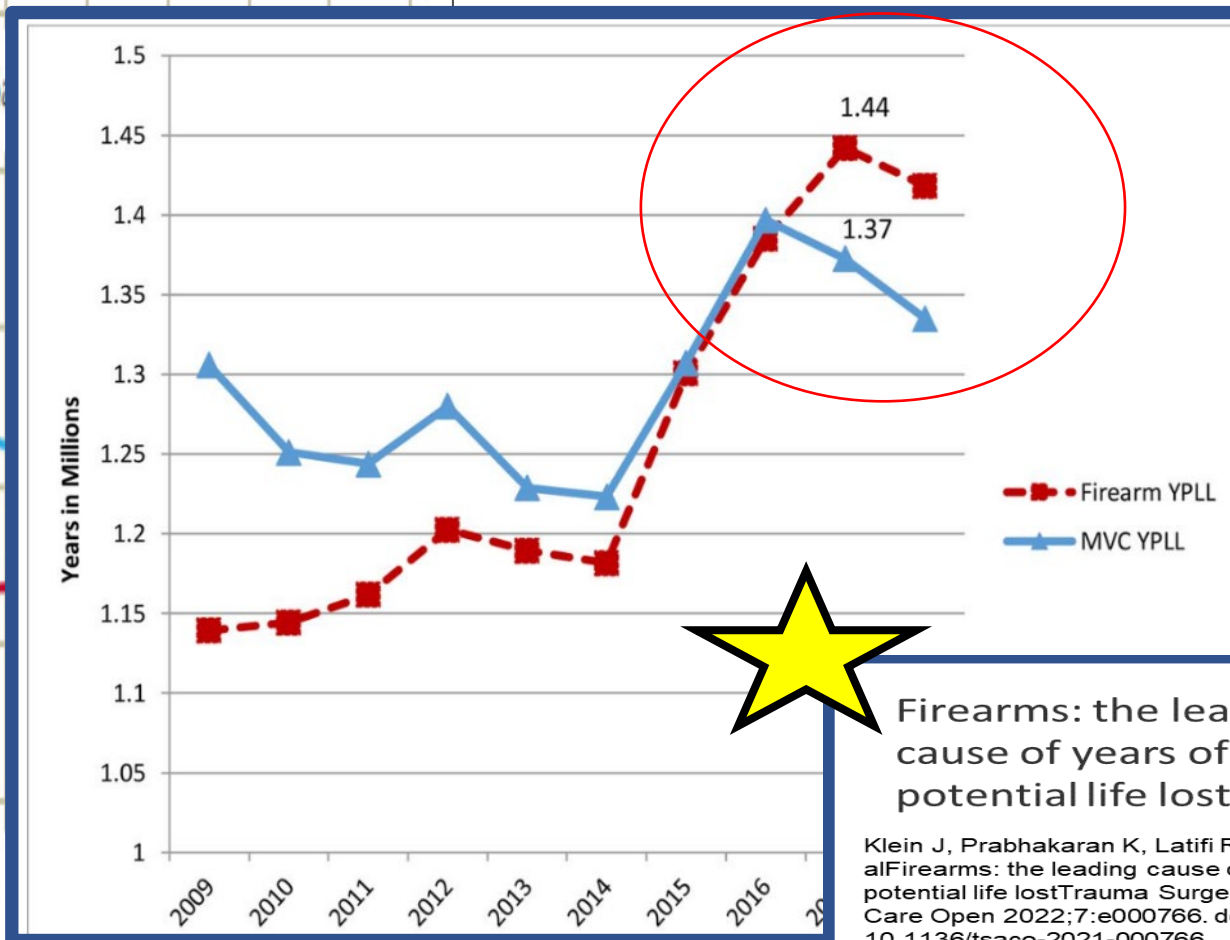
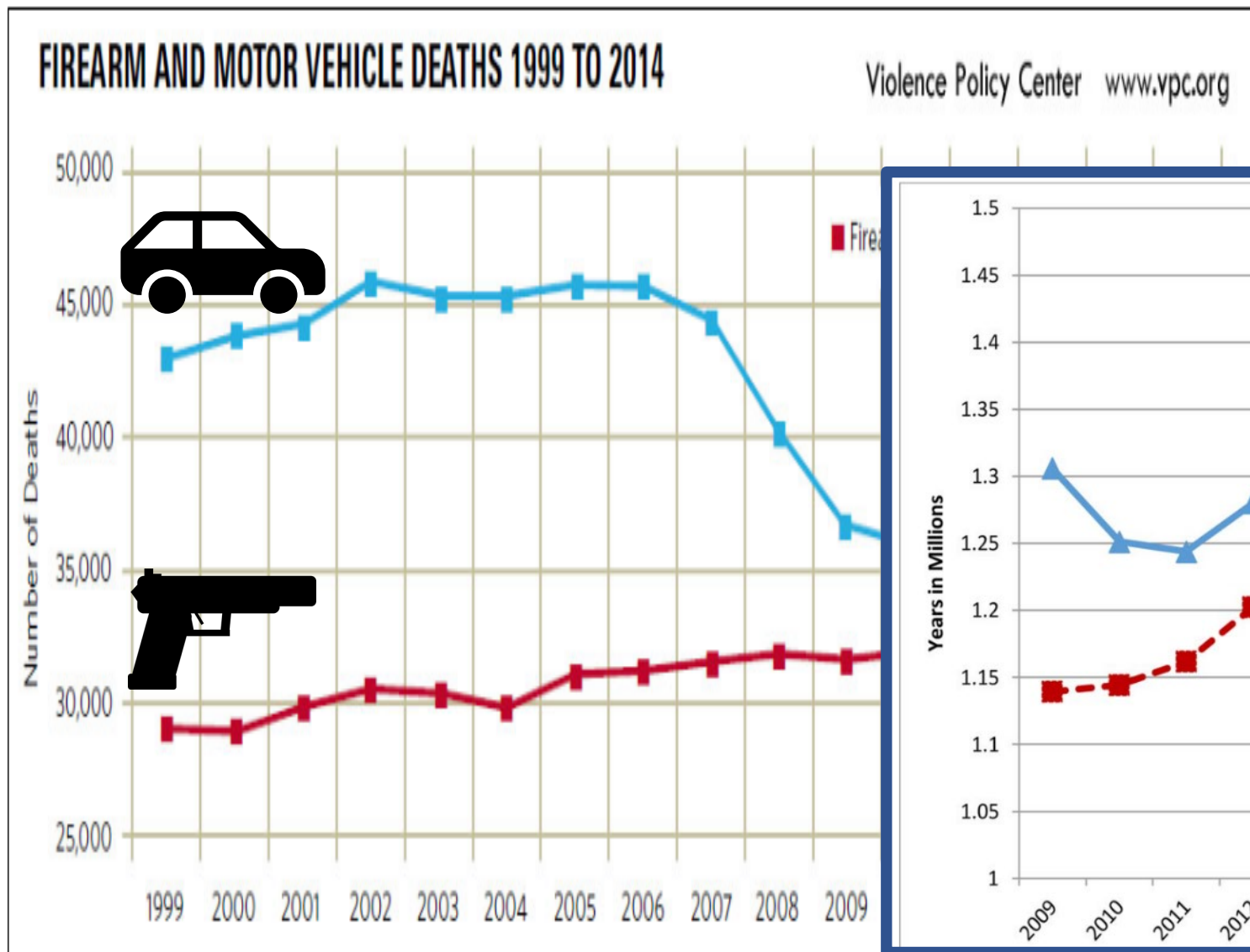
Average age at injury in Louisville is 29. 

 Suicides historically comprise 2/3rds of all gun deaths in the US

Financial cost of homicide estimated \$ 900,000- 1 million 

# Traumatic Injury and Death

Years of Potential Life Lost =  
70 - (Age at time of Death)





**Firearms: the leading cause of years of potential life lost**

Klein J, Prabhakaran K, Latifi R, et al  
Firearms: the leading cause of years of potential life lost  
Trauma Surgery & Acute Care Open 2022;7:e000766. doi: 10.1136/tsaco-2021-000766

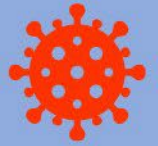
# What about Non-traumatic PH Issues?

## A New Pandemic and an Old Epidemic – The Impact of COVID-19 and Gun Violence as Measured by Years of Potential Life Lost in a US City

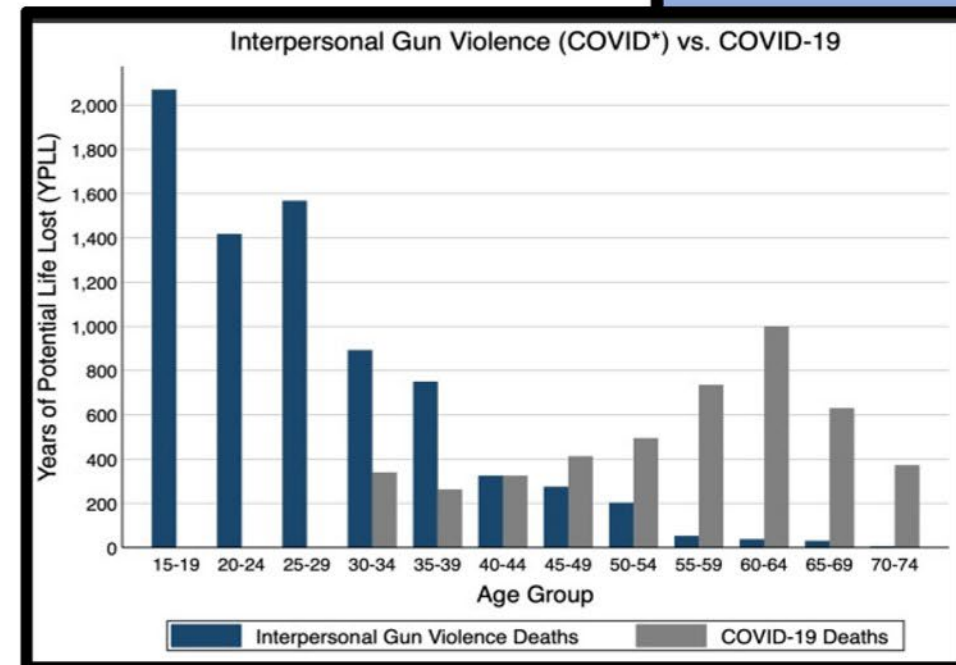
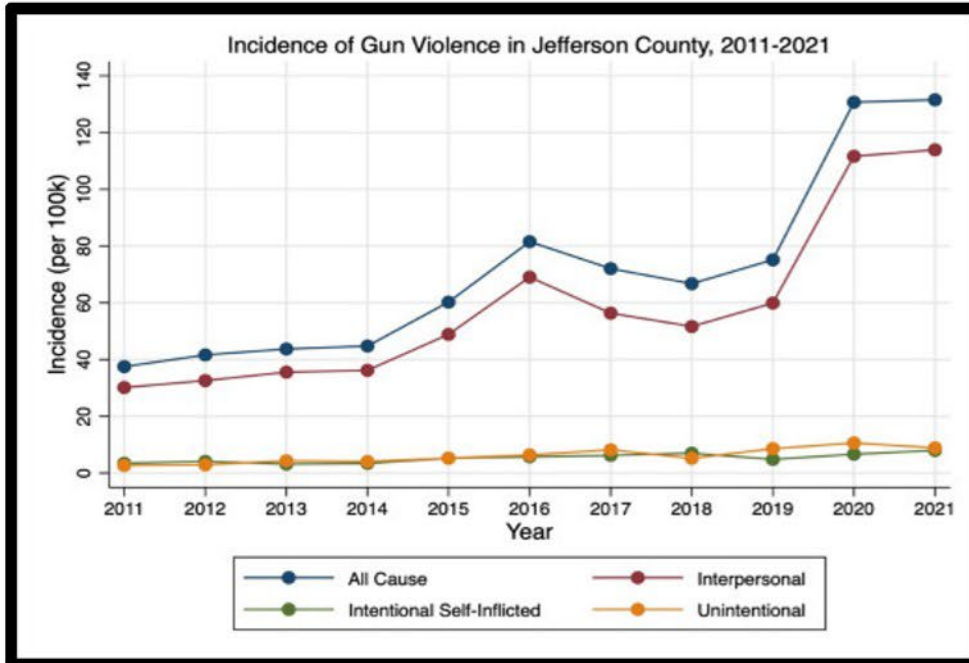
William B. Risinger, MD \* • Samuel J. Pera, MD \* • Neal Bhutiani, MD, PhD • ... Jason W. Smith, MD, PhD •  
 Matthew V. Bennis, MD • Keith R. Miller, MD   • [Show all authors](#) • [Show footnotes](#)

Published: July 15, 2022 • DOI: <https://doi.org/10.1016/j.surg.2022.06.040>

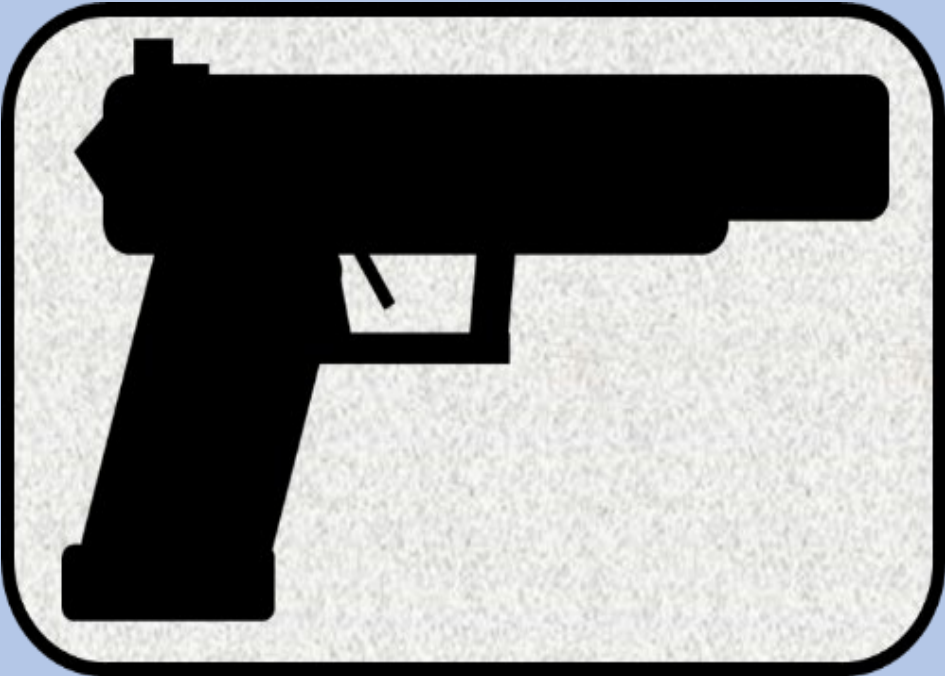
In Louisville, the YPLL from gun violence outweighed the YPLL from COVID-19 during the first year of the pandemic.

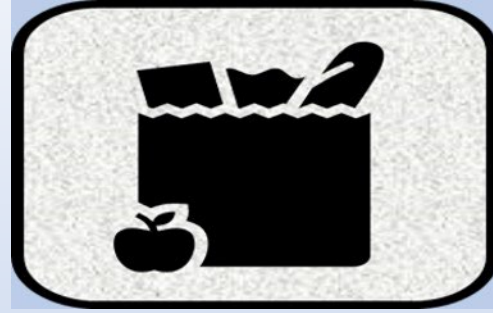


**Gun Violence** > **COVID-19**  
 9,722 YPLL > 4,575 YPLL



# Causes





There's an obvious explanation  
for this...

Too many people, not enough food.

Objective 1: Food access, not production, is the central issue in the United States

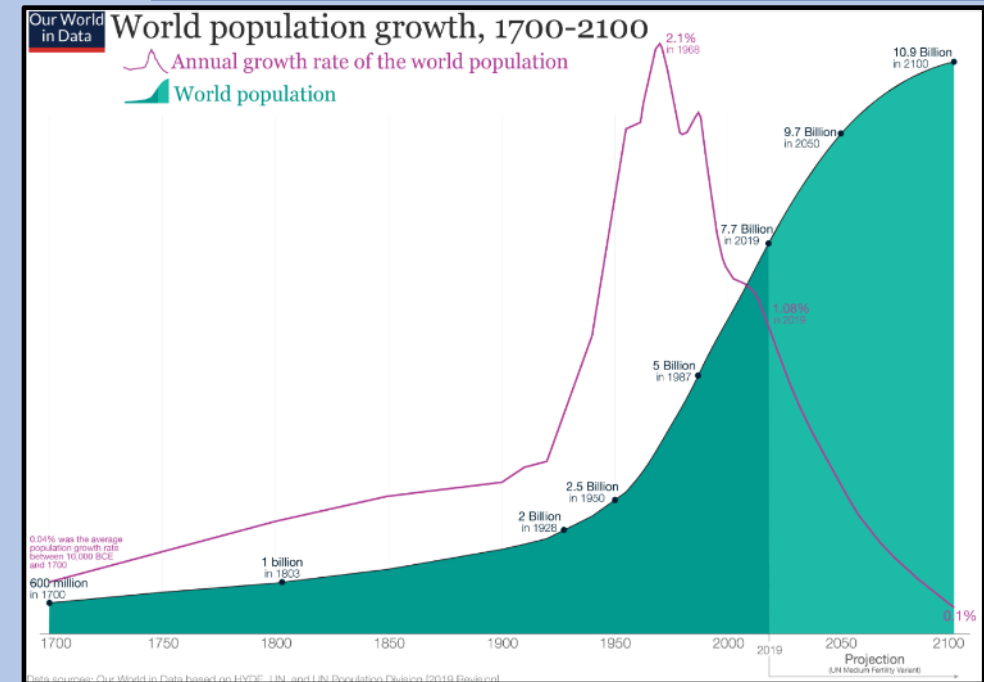
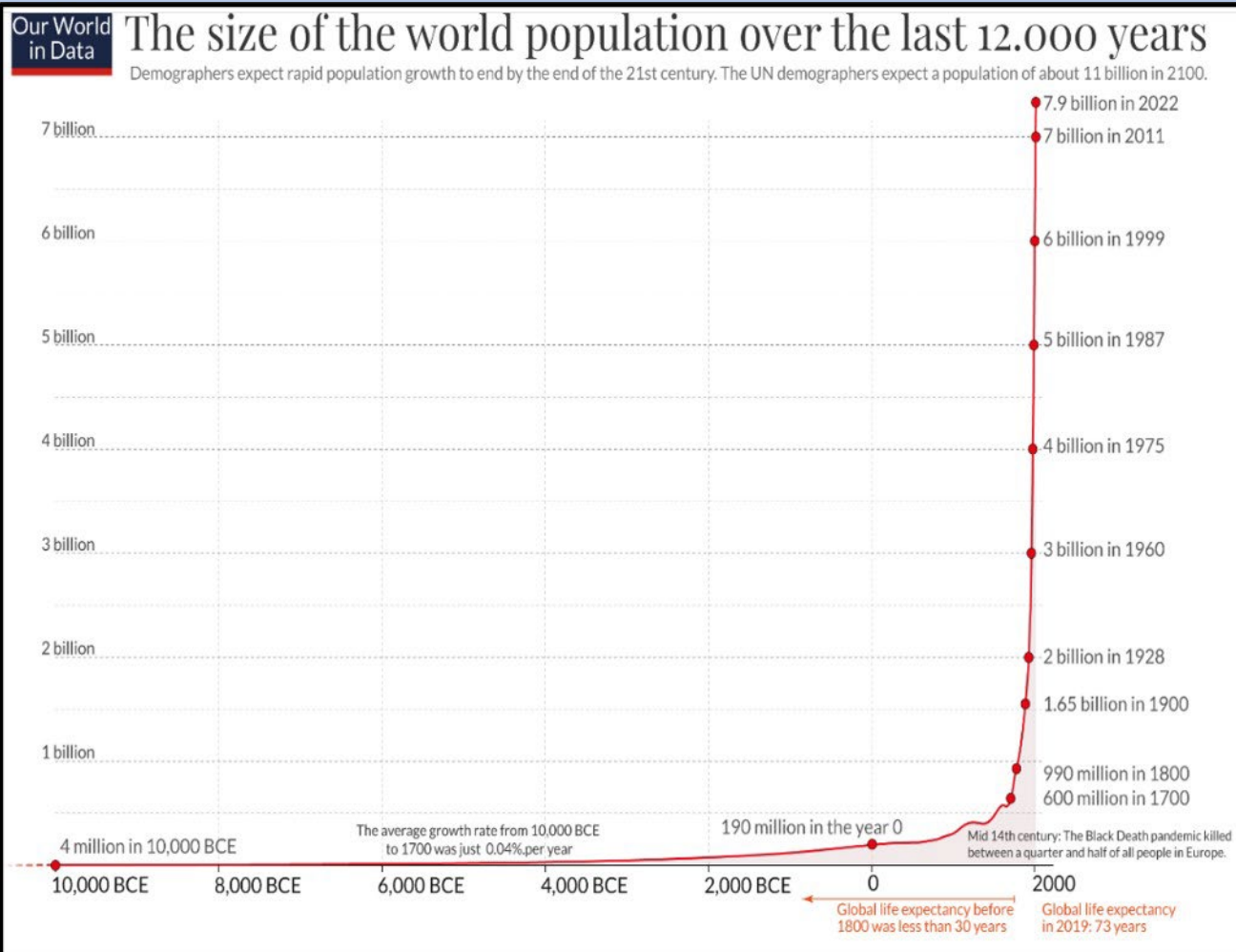
# Easy: Demand exceeds supply



How many is too many?



= 1/13,400<sup>th</sup>  
 Population: 1 million  
 Capacity: 13.4 billion



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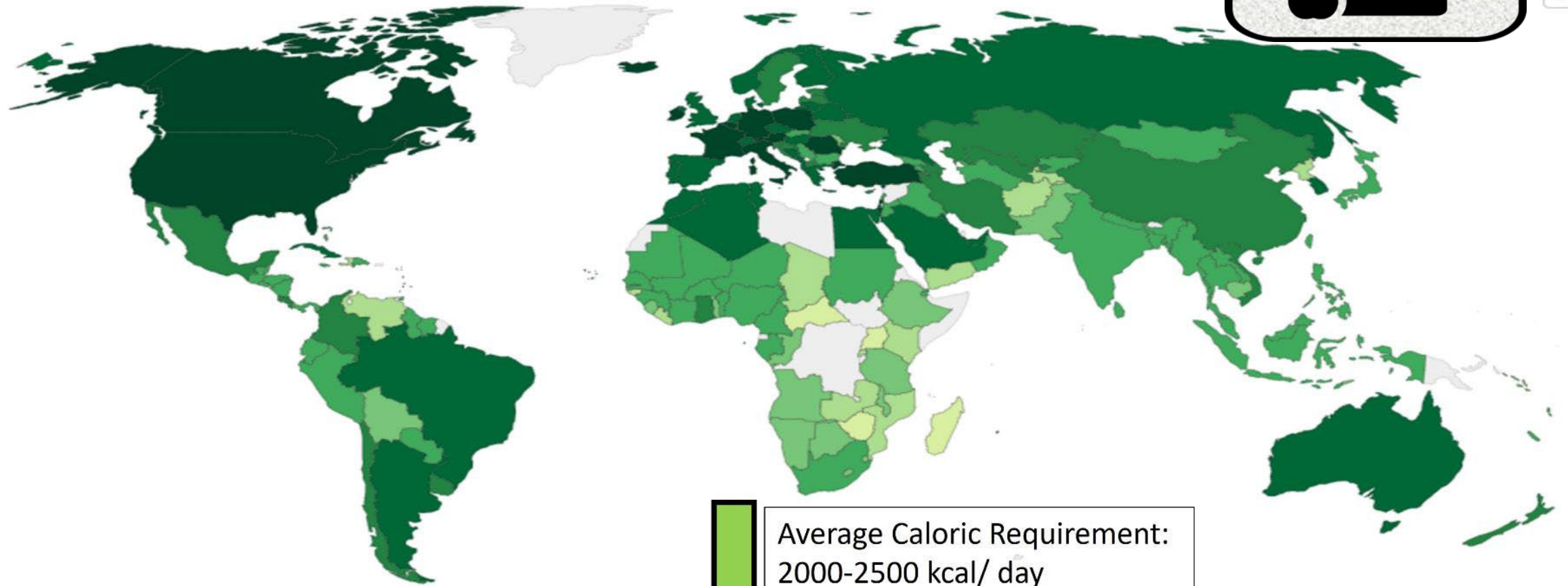
Growing at a slower pace, world population is expected to reach 9.7 billion in 2050 and could peak at nearly 11 billion around 2100

<https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html#:~:text=The%20study%20concluded%20that%20the,level%20of%20nearly%2011%20billion.>

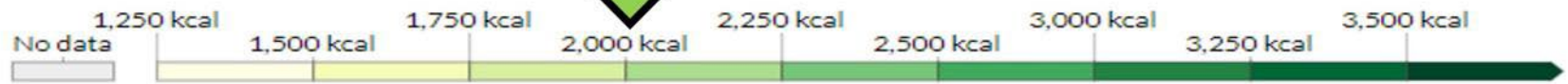


# Supply.

Average Per Capita Caloric Production



Average Caloric Requirement:  
2000-2500 kcal/ day



Source: Our World in Data based on the UN FAO & historical sources

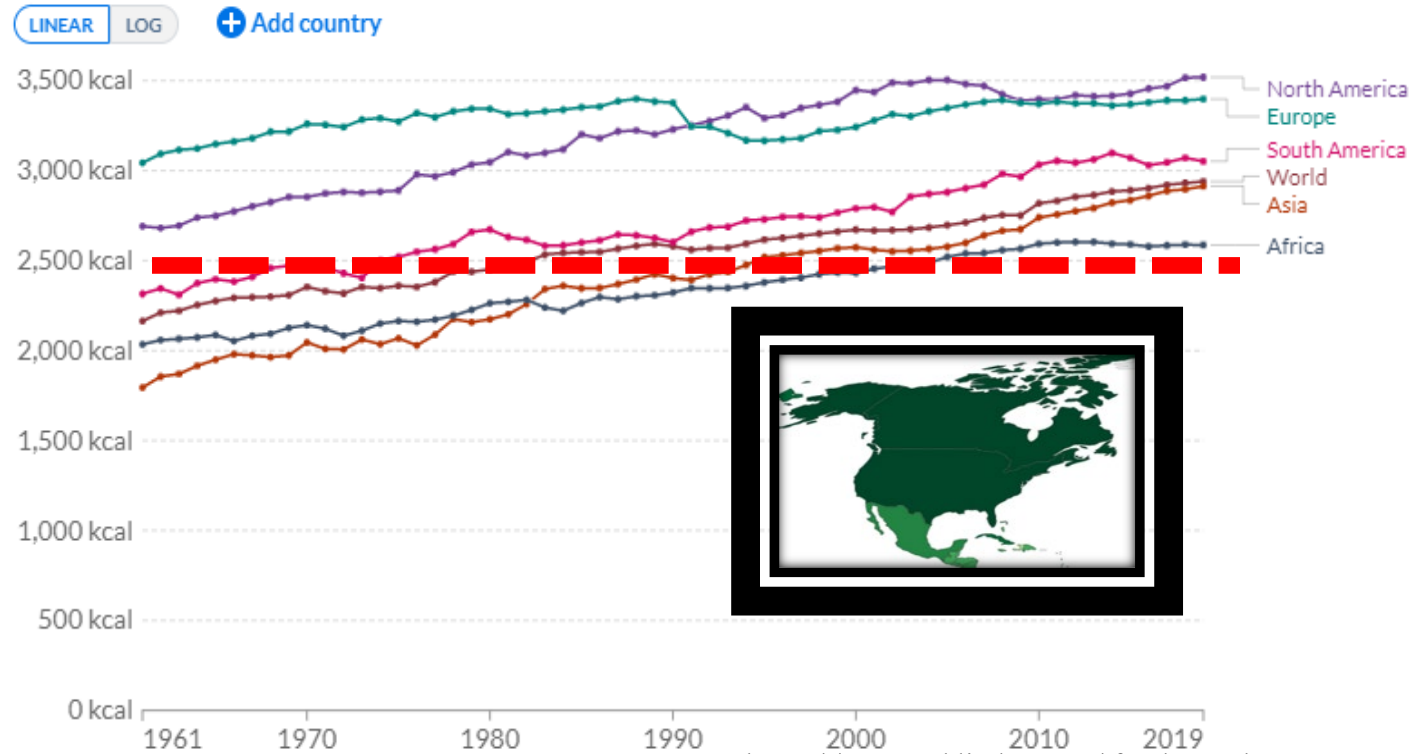
OurWorldInData.org/f

# Food Supply the Issue in the United States?

## Per capita kilocalorie supply from all foods per day, 1961 to 2019

This measures the quantity that is available for consumption at the end of the supply chain. It does not account for consumer waste, so the quantity that is actually consumed may be lower than this value.

Our World  
in Data



Source: UN Food and Agriculture Organization (FAO)  
Note: This is the total of all agricultural produce – both crops and livestock.  
The FAO apply a methodological change from the year 2010 onwards

CC BY

- US produces nearly 4000 calories per person per day

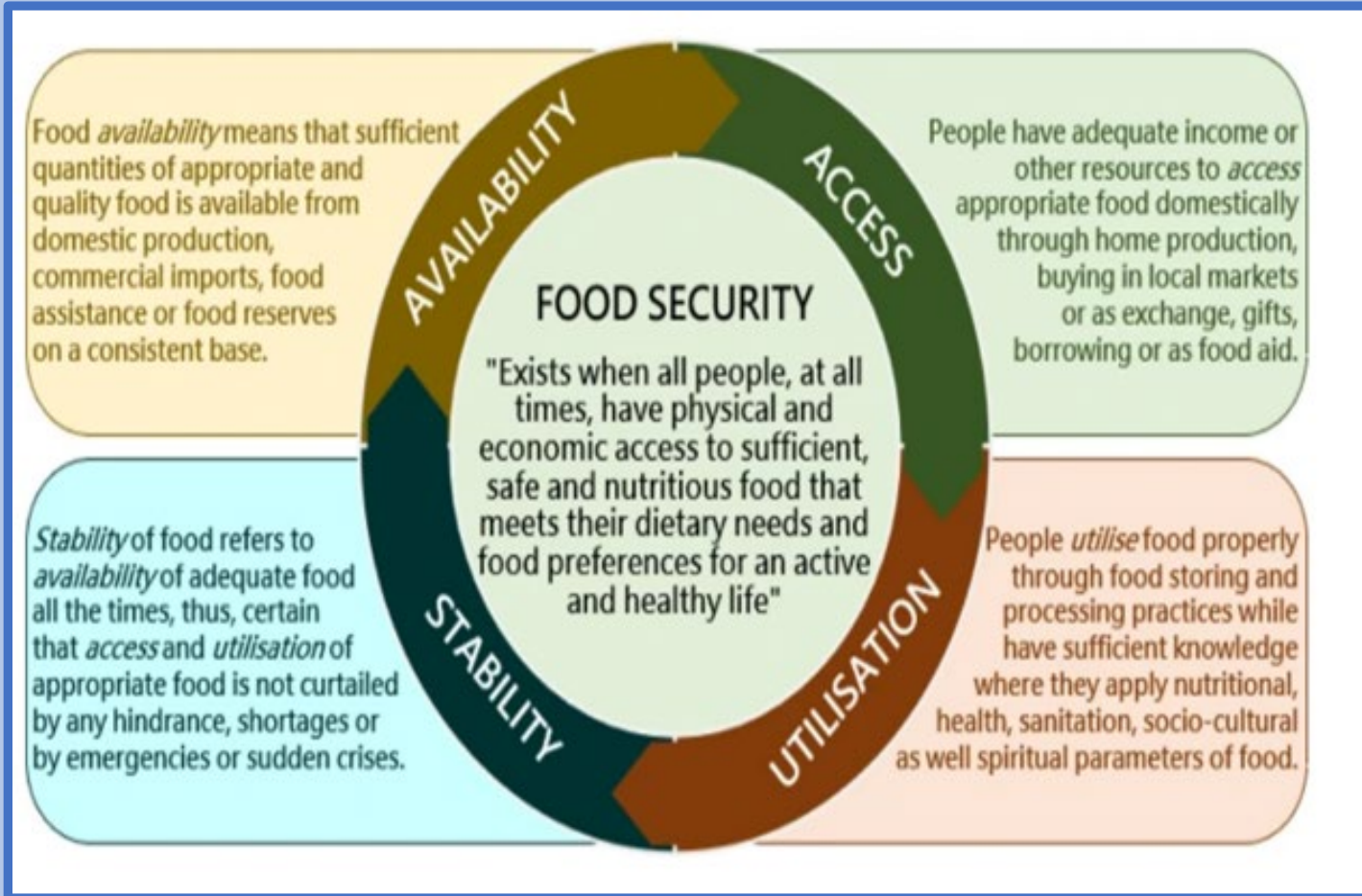
- Export more than 20%
- 1/3<sup>rd</sup> of the country's available food supply is discarded in landfills

- Prevalence in US:
  - 11.1-12%

Kirsten Jaglo, Kenny, S., & Stephenson, J. (2021). From Farm to Kitchen: The Environmental Impacts of U.S. Food Waste. 113.

# A Bit More Complex than supply:

## Four Dimensions of Food Security



USA



**Availability**  
Sufficient quantities/ quality



**Access**  
Income/ Resources to obtain food



**Stability**  
Available at all times



**Utilization**  
Food storage and processing

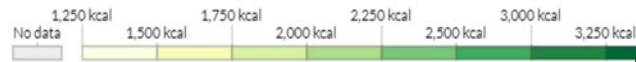
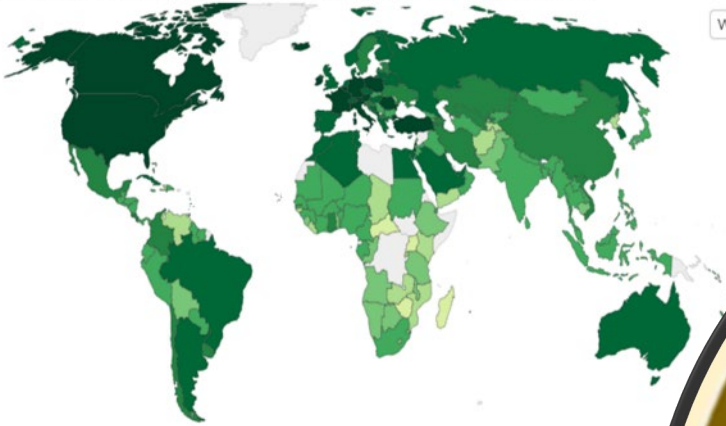


## Daily supply of calories per person, 2018

Daily per capita caloric supply is measured in kilocalories per person per day. This indicates the caloric availability delivered to households but does not necessarily indicate the number of calories actually consumed.

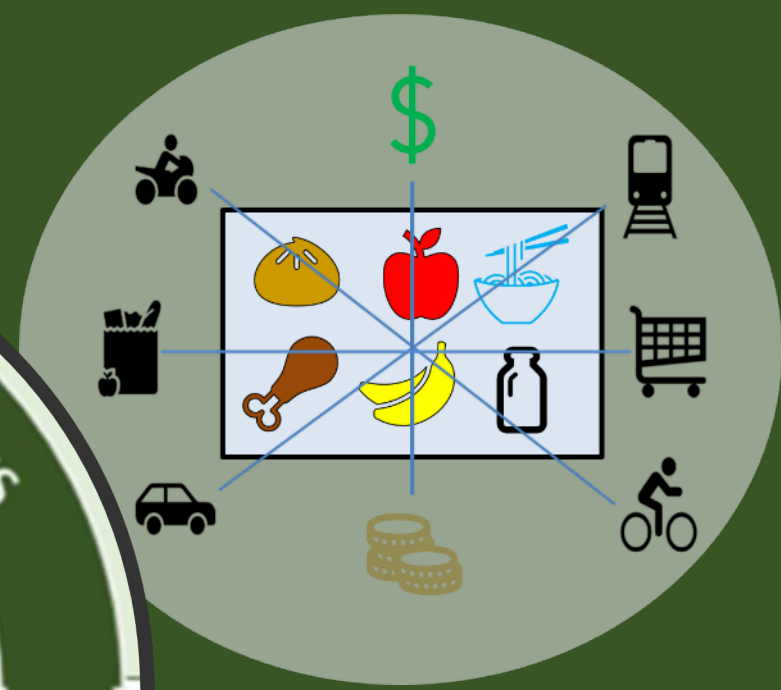
Our World  
in Data

World



Source: Our World in Data based on the UN FAO & historical sources

OurWo



2022 Russian invasion of Ukraine resulted in:

- crop damage
- supply chain disruption
- decreased productivity

13+ million Ukrainian families displaced from homes without means to generate income or store food



# Food Access in America: Variations on a Theme

## Food Deserts

Low-income community lacking stores that sell healthy and affordable food.

\*Dependent upon the population density of the region:

Rural: > 10 miles from grocery store

Urban > 1 mile from grocery store



Image Credit: Jurgen Mantzke

## Food Swamps

High concentration of unhealthy food options, like fast-food restaurants and convenience stores

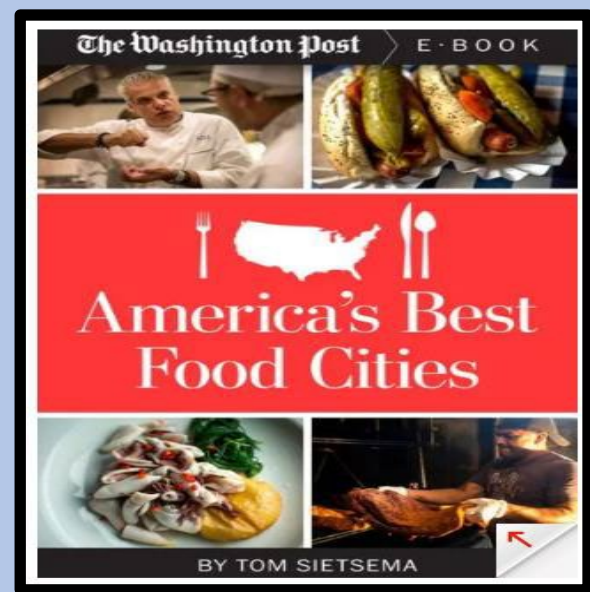


<https://www.thrillist.com/eat/nation/red-white-food-mapping-all-50-states-most-significant-chain-restaurants>

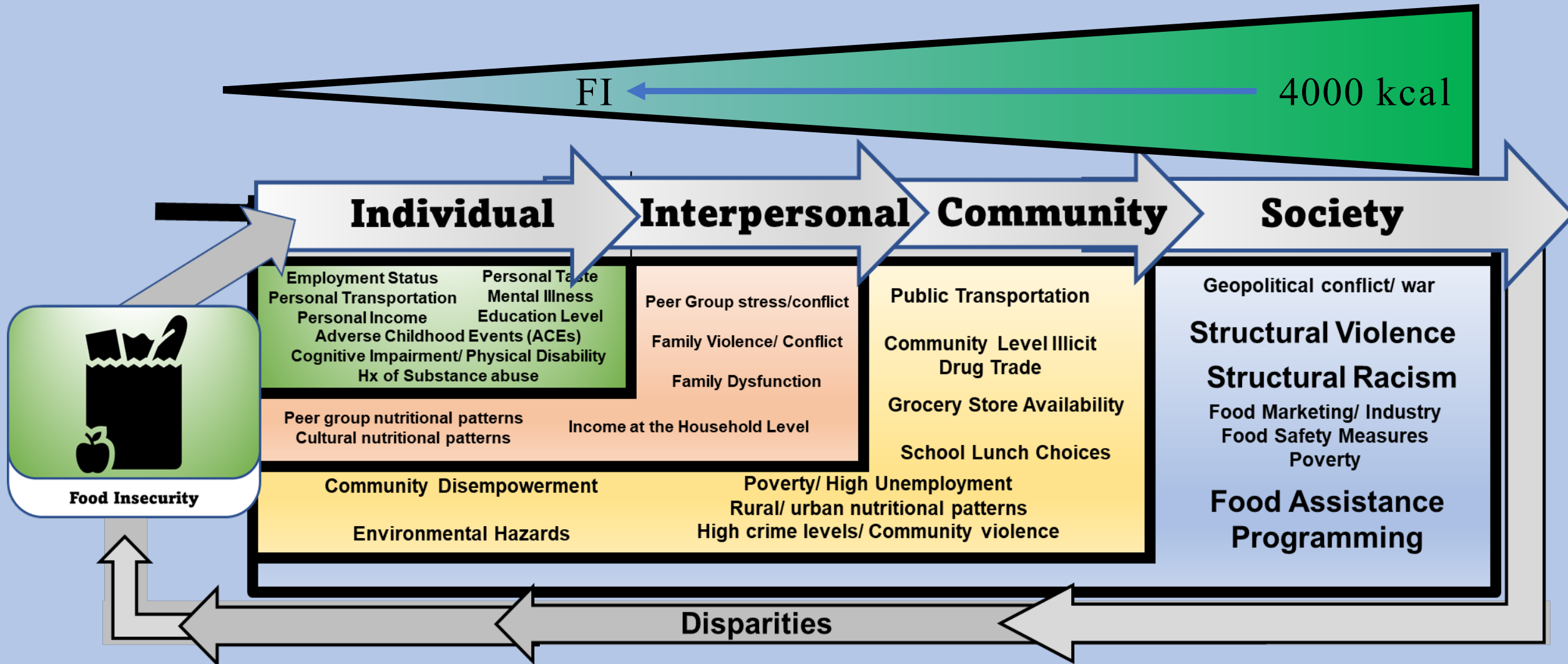
## Food Mirage

Grocery stores appear plentiful

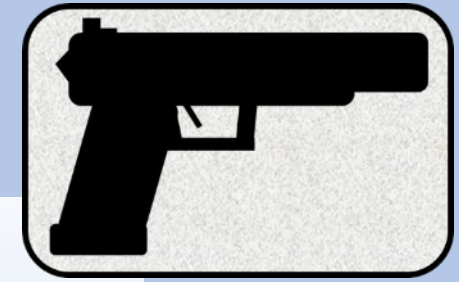
But, healthy foods are prohibitively priced and economically inaccessible for low-income households



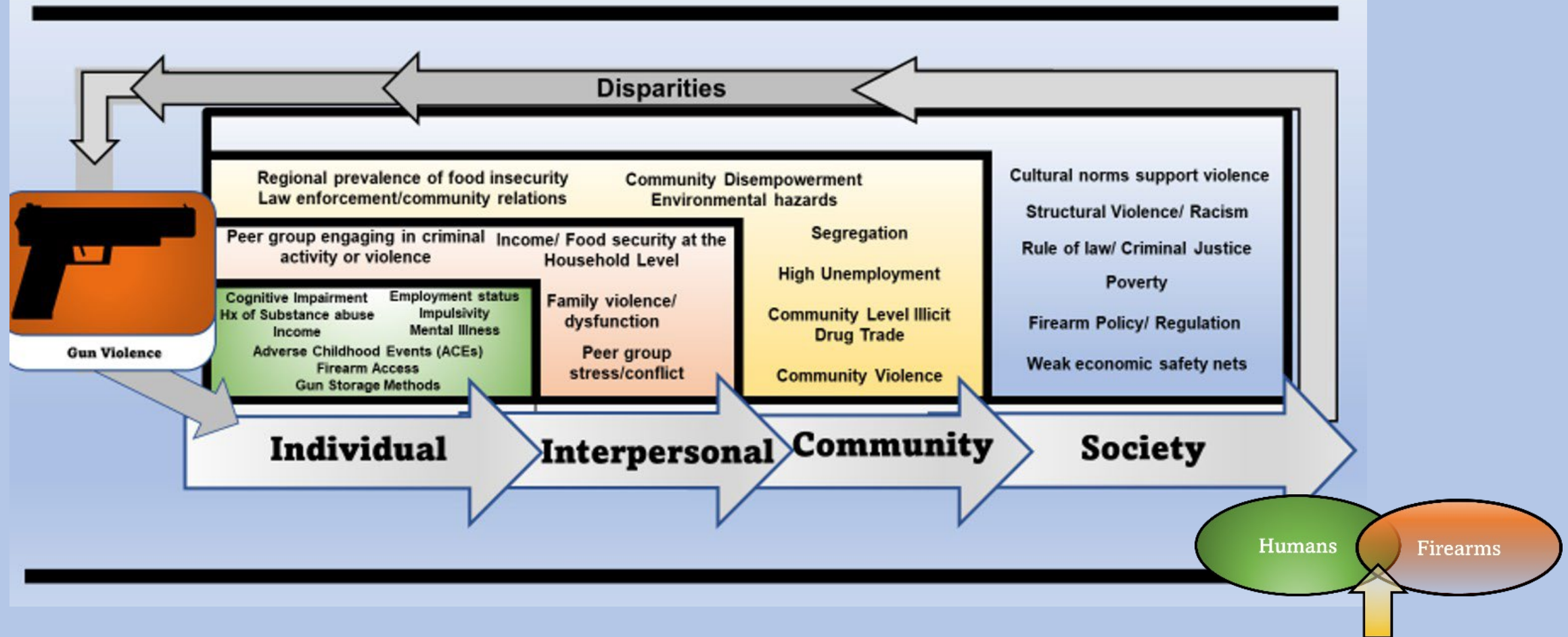
# Socio-Ecologic Model: Food Insecurity

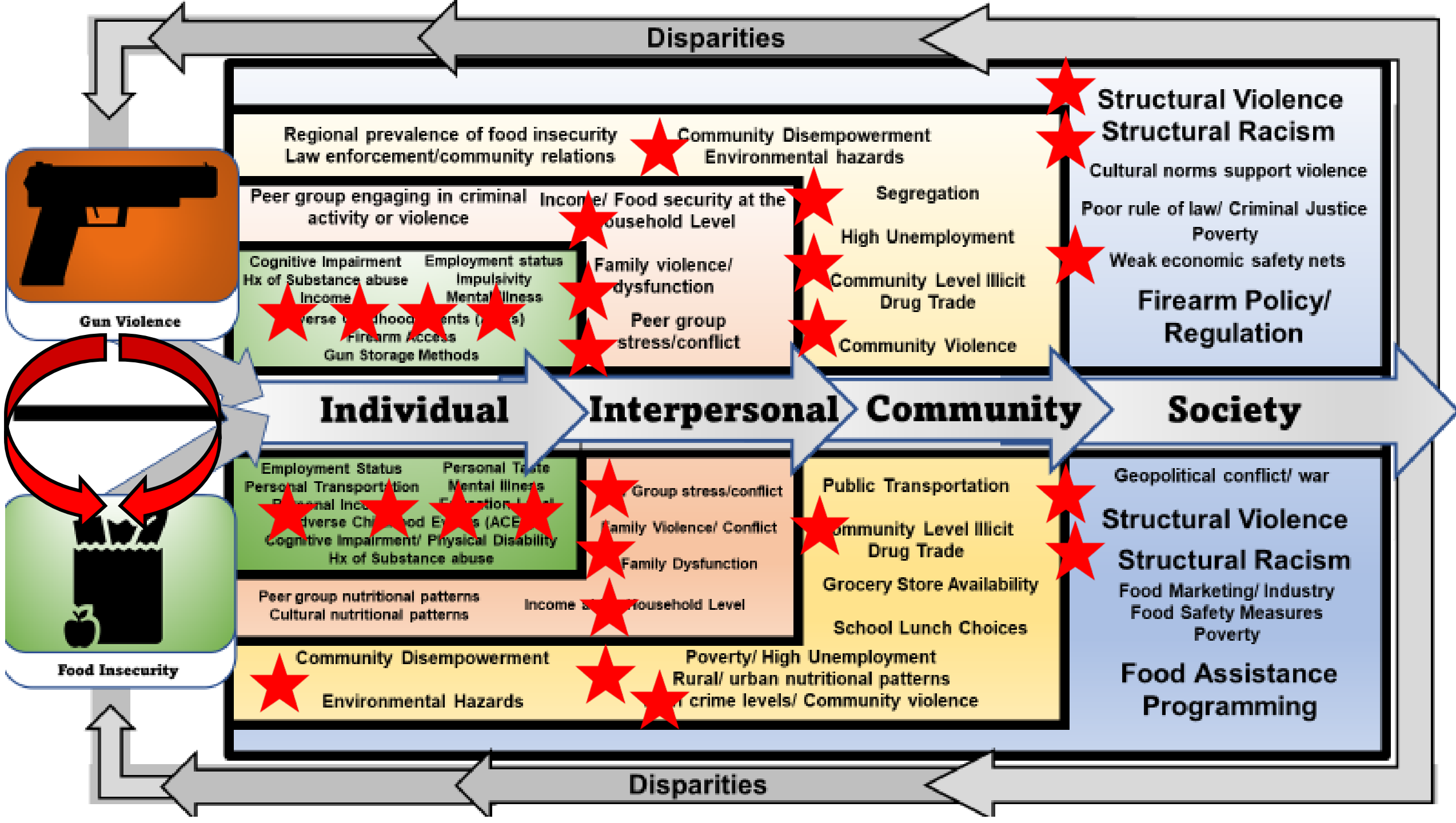


# Causes: Gun Violence



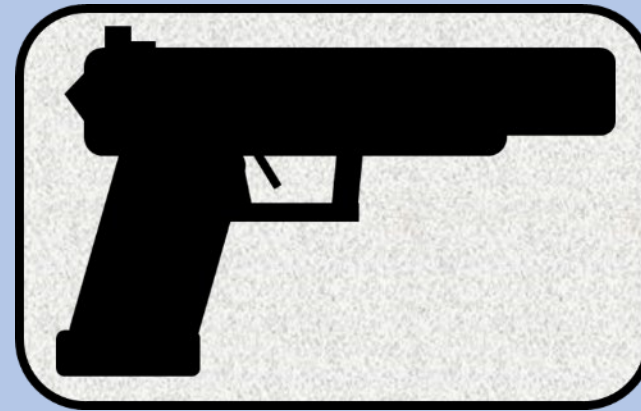
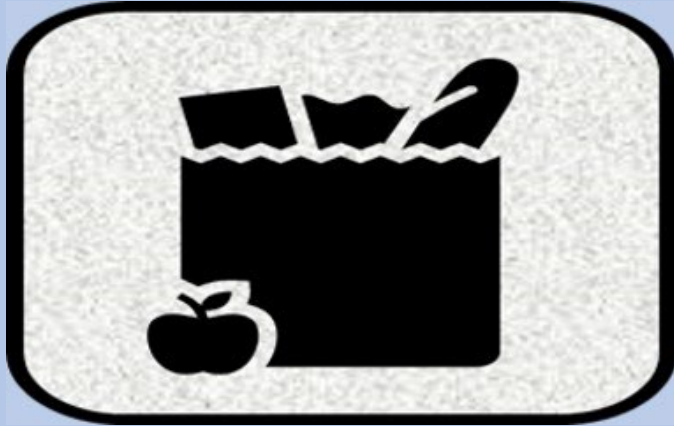
## The Socio-Ecological Model







# Disparities

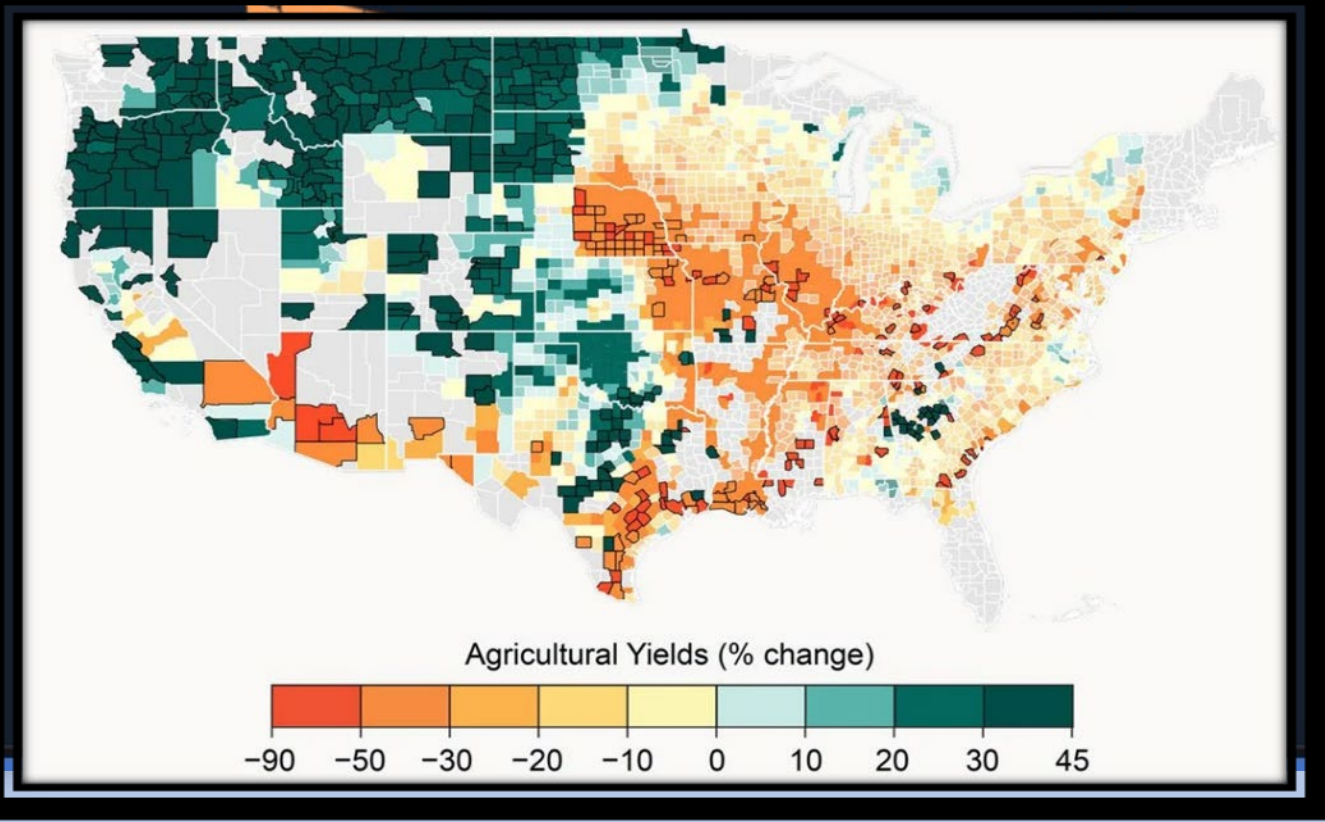
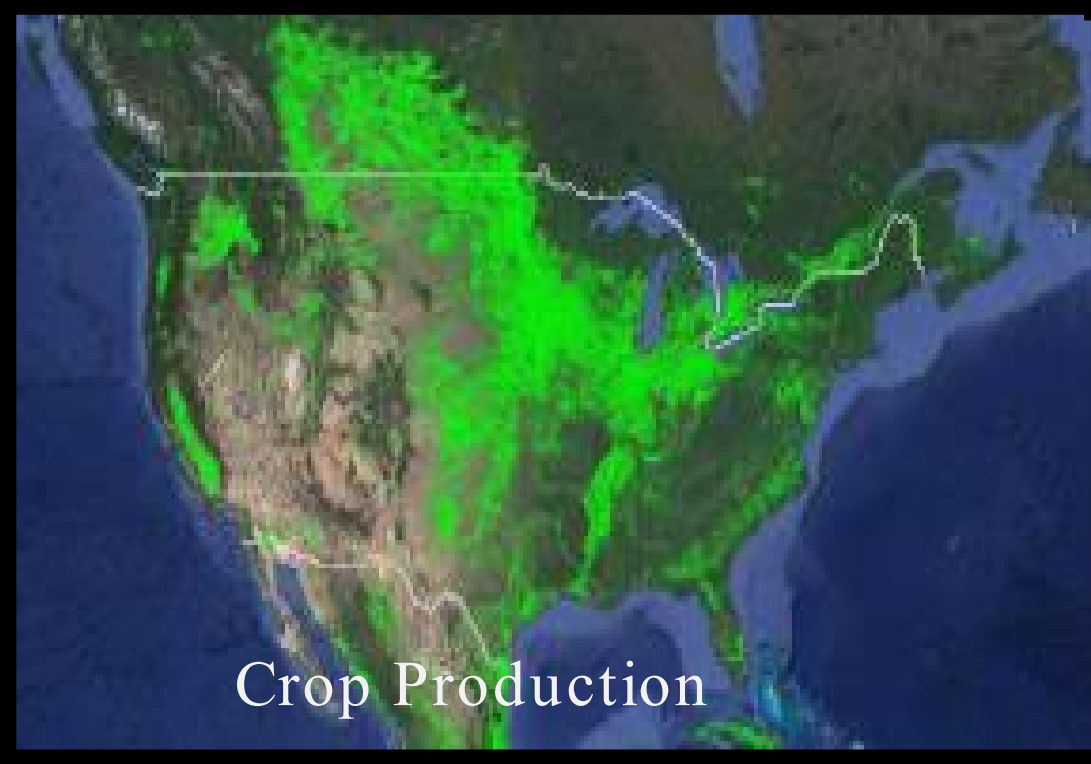




# Geographic Disparity: FI



## Changing Climate...

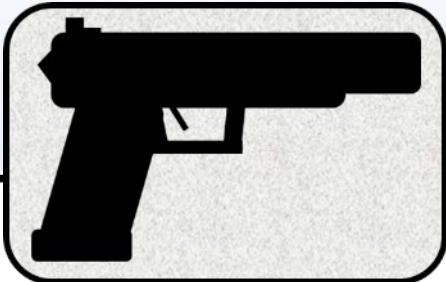


<https://www.usgs.gov/news/featured-story/new-map-worldwide-croplands-supports-food-and-water-security>

<https://www.ucsusa.org/resources/climate-change-and-agriculture>

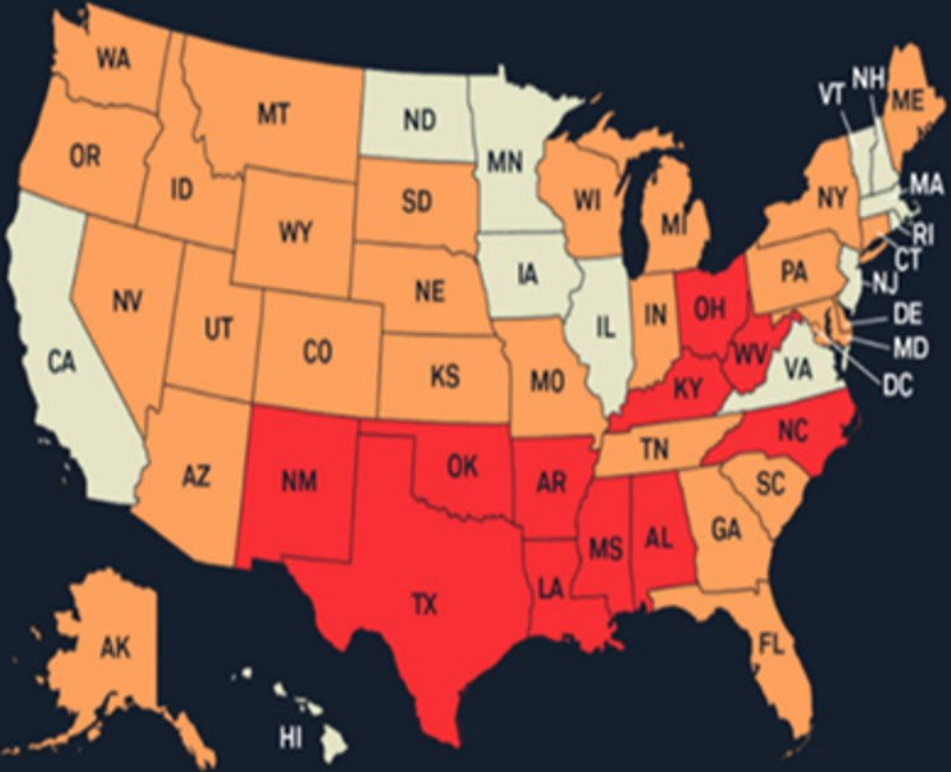
<https://www.pbs.org/newshour/health/1-in-10-americans-dont-have-enough-food-the-pandemic-is-making-things-worse>

# Geographic Disparities: GV



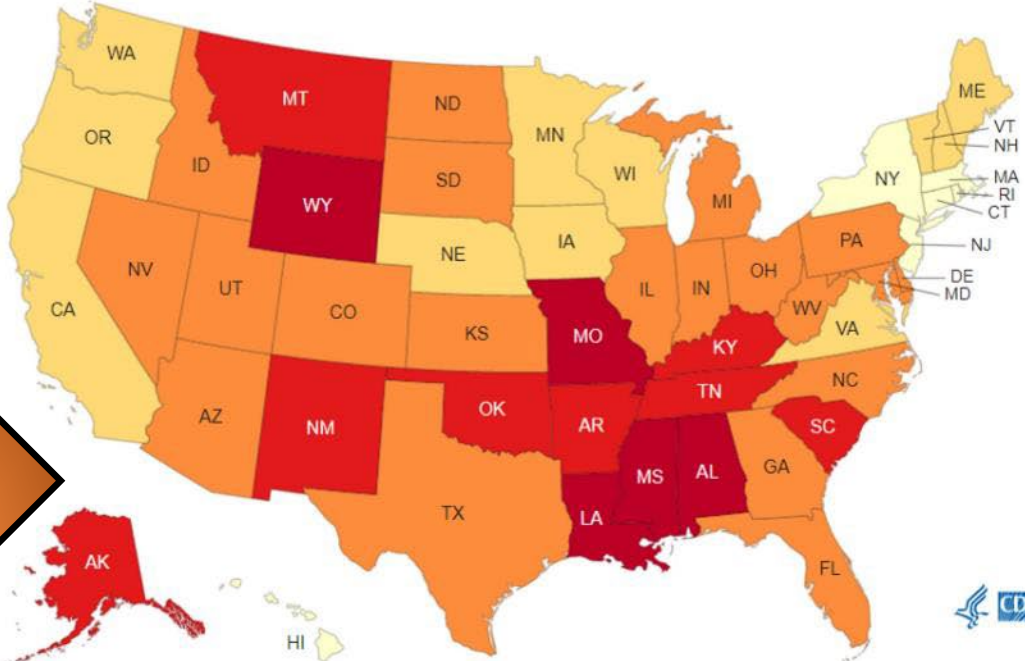
## Food Insecurity

Below U.S. average    Near U.S. average    Above U.S. average



2019

## Firearm Mortality by State



Age-Adjusted Death Rates<sup>1</sup>

- 3.4 - < 8.44
- 8.44 - < 13.48
- 13.48 - < 18.52
- 18.52 - < 23.56
- 23.56 - 28.6

20.1

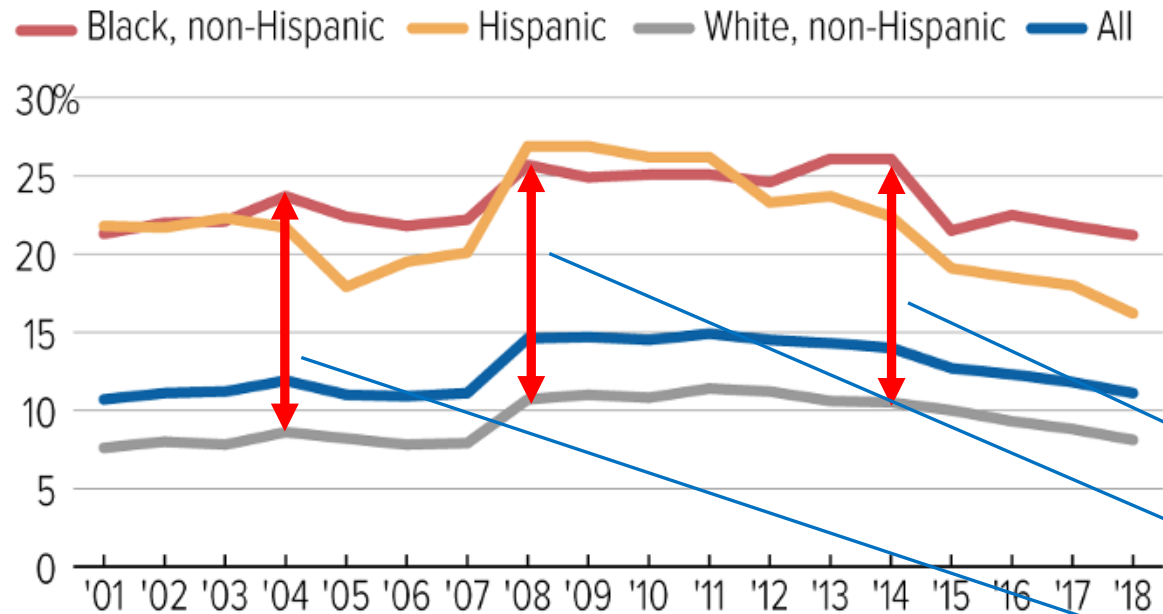
2020

# Racial Disparities: FI



## Food Insecurity by Race and Ethnicity Reveals Stark Disparities

Percentage of households that lacked access to adequate food at some point in the year, by race and ethnicity, 2001-2018

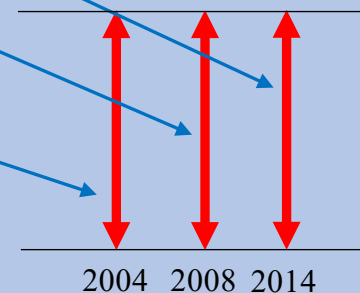


Source: U.S. Department of Agriculture

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Food insecurity disproportionately impacts populations:

<b>White:</b>	<b>7%</b>
<b>National Avg:</b>	<b>11.1%</b>
<b>Hispanic:</b>	<b>16.2%</b>
<b>Black:</b>	<b>21.2%</b>



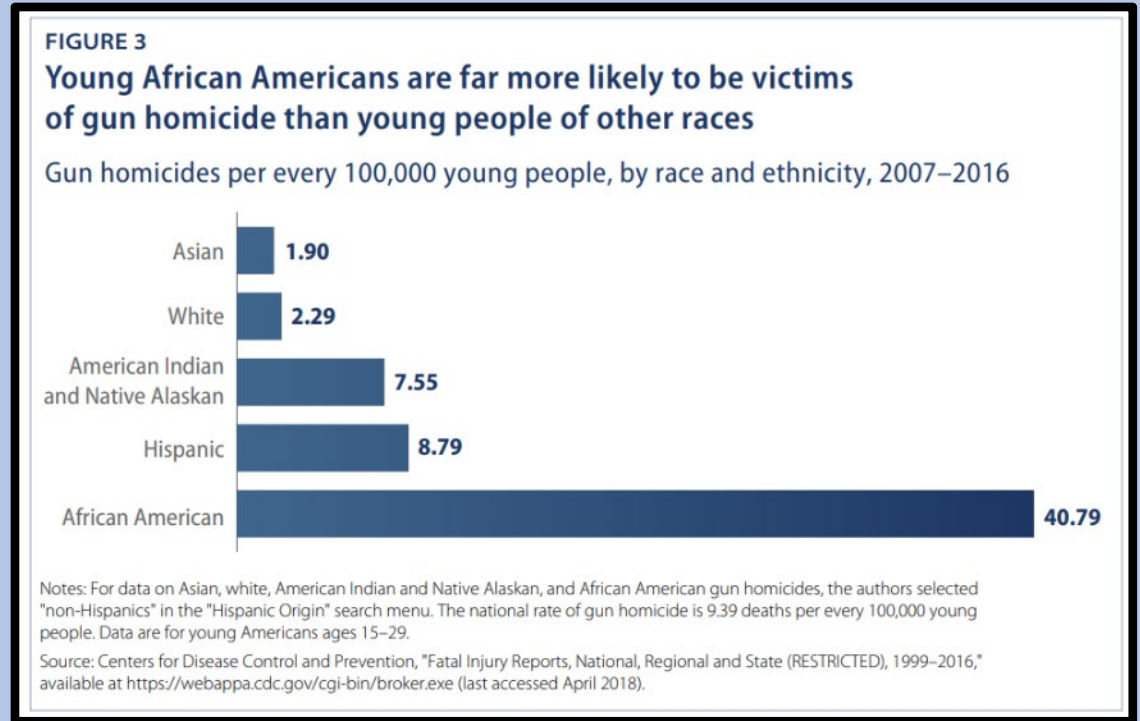
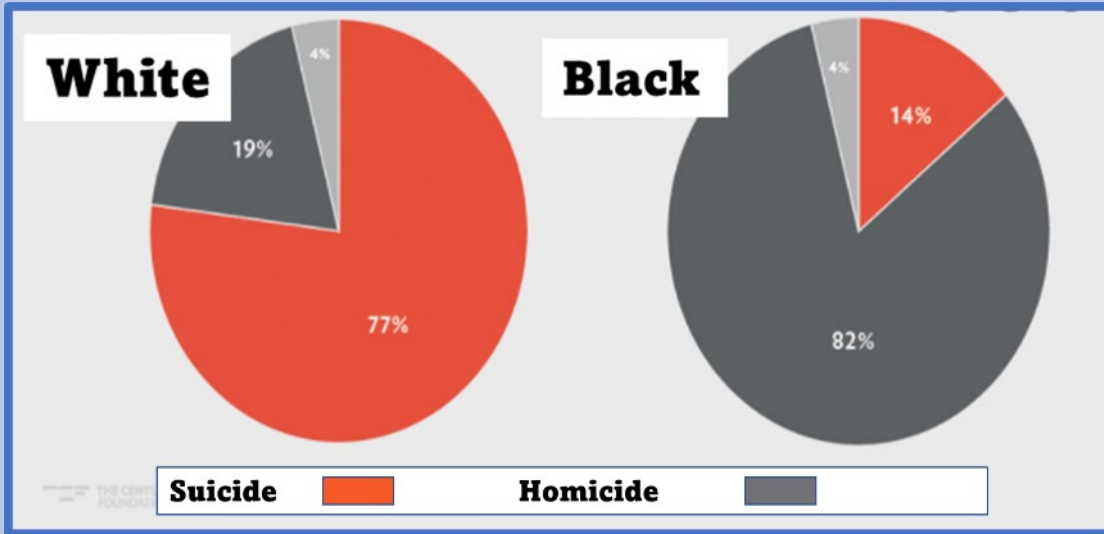
Regardless of deflection, disparities persist

<https://www.cbpp.org/food-insecurity-by-race-and-ethnicity-reveals-stark-disparities>

Morales et al. Journal of racial and ethnic health disparities, 1–15. 14 Oct. 2020.

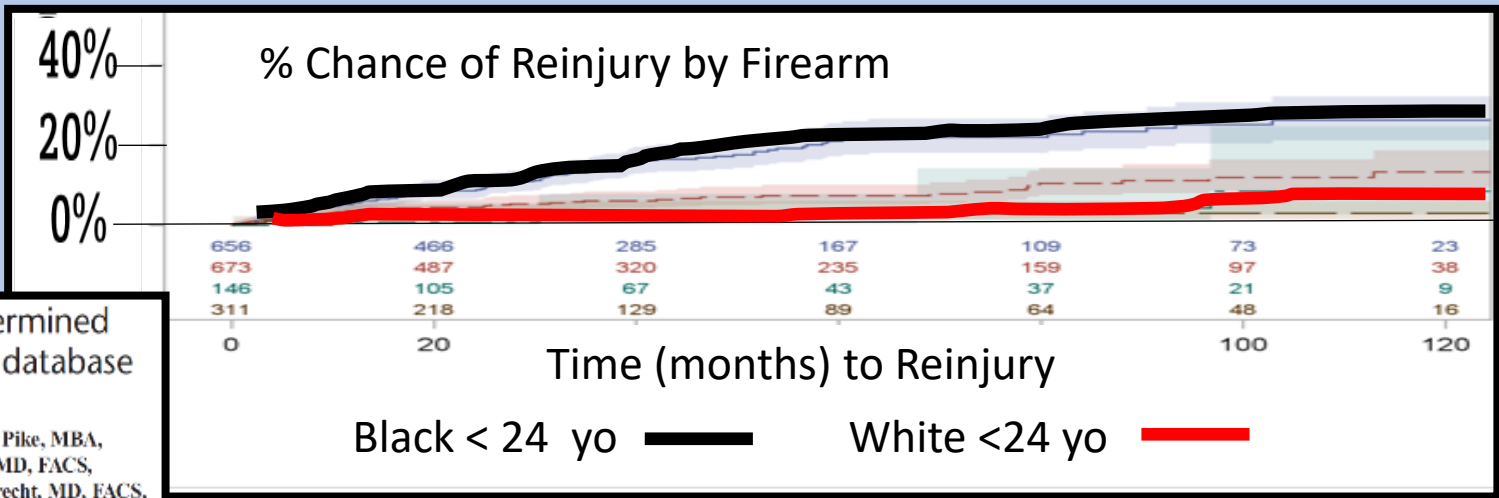
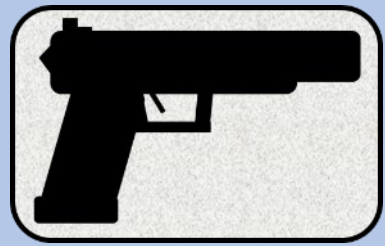
Coleman-Jensen et al. ERR-270, U.S. Department of Agriculture, Economic Research Service. 2019. <https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=7154.9>. Accessed 06-08-2021.

# Racial Disparities: GV



From: <https://www.americanprogress.org/wp-content/uploads/2018/05/YouthUnderFire-report.pdf>

<https://tcf.org/content/commentary/gun-violence-americas-unresearchable-epidemic/?agreed=1>



Recidivism rates following firearm injury as determined by a collaborative hospital and law enforcement database

William Aaron Marshall, MD, Michael E. Egger, MD, MPH, FACS, Annabelle Pike, MBA, Matthew C. Bozeman, MD, Glen A. Franklin, MD, FACS, Nicholas A. Nash, MD, FACS, Jason W. Smith, MD, PhD, FACS, J. David Richardson, MD, FACS, Brian G. Harbrecht, MD, FACS, Matthew V. Bennis, MD, FACS, and Keith R. Miller, MD, FACS, Louisville, Kentucky

# Is there a relationship between violence and food insecurity?

Is there a relationship between violence and hunger?

Yes. I think so.

How are they related?

Causative Relationship.

Which causes which?

Bidirectional Causation.

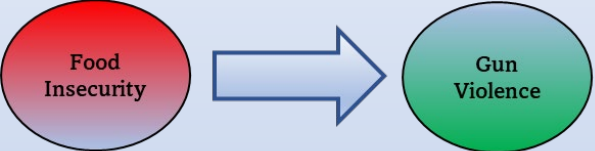
Anything else?

Yes. Bidirectional Causation with shared common external contributors to both

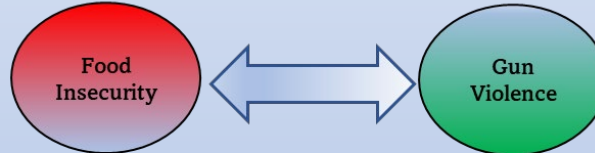
How many of your patients that have been injured by firearm attribute their injuries to hunger?

Very few.

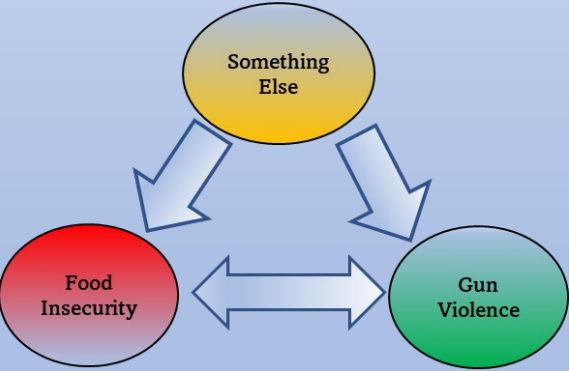
Please explain.



Causative



Bidirectional Causation



Bidirectional Causation with common external contributor

## Objective 2:

Examine the relationship between food security and violence at the geopolitical and neighborhood levels

# Association/ Causation?



Causative

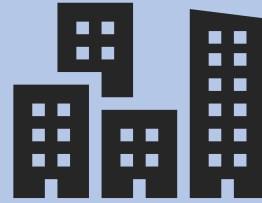


- Well-established connection in human history.
- From global perspective, until very recently both entities have decreased in incidence
- 2017 every country involved in violent conflict also classified in “protracted crisis” by UN from food security perspective
- War- impede food imports, raise food prices, interrupt food supply, and reduce disposable income.

The screenshot shows the United Nations website interface. At the top left is the UN logo and the text "United Nations Meetings Coverage and Press Releases". Below this is a navigation menu with items: Home, Secretary-General, General Assembly, Security Council, Economic and Social Council, and International Court of Justice. A light blue banner contains a notice about website migration. Below the banner, there are links for "MEETINGS COVERAGE" and "SECURITY COUNCIL", and a "PRINT" button. The main content area displays the title "8267TH MEETING (AM)" and "SC/13354 24 MAY 2018". The headline reads: "Adopting Resolution 2417 (2018), Security Council Strongly Condemns Starving of Civilians, Unlawfully Denying Humanitarian Access as Warfare Tactics". The introductory text states: "The Security Council today adopted a resolution condemning the starving of civilians as a method of warfare — as well as the unlawful denial of humanitarian access to civilian populations — with members welcoming it as a landmark expression of unity on those critical issues."



# Extrapolation



Neighborhood

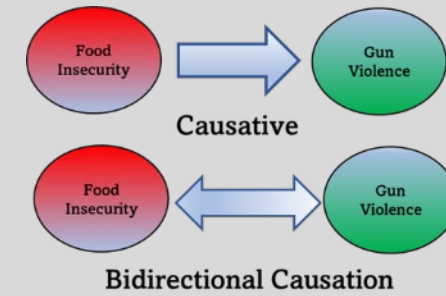


Geopolitical

Household

\*\*\*Extrapolating this association observed in relationships within and between large groups and geopolitical entities to neighborhoods and communities in urban America can be difficult.

# Any Supportive Literature?



Very low food Security Mothers and Children: **60% described a life-changing violent event** (1)

Food Insecure Households: **significantly increased parent-to-child psychological and physical aggression** (from the Fragile Families and Child Wellbeing Study) (2)

Food Insecurity strongly correlated with; **sexual, physical, psychological violence** (3)

Children living in food insecure regions: **6xs more likely to be exposed to violence** (witnessing or being victim of violent injury by age four) (4)

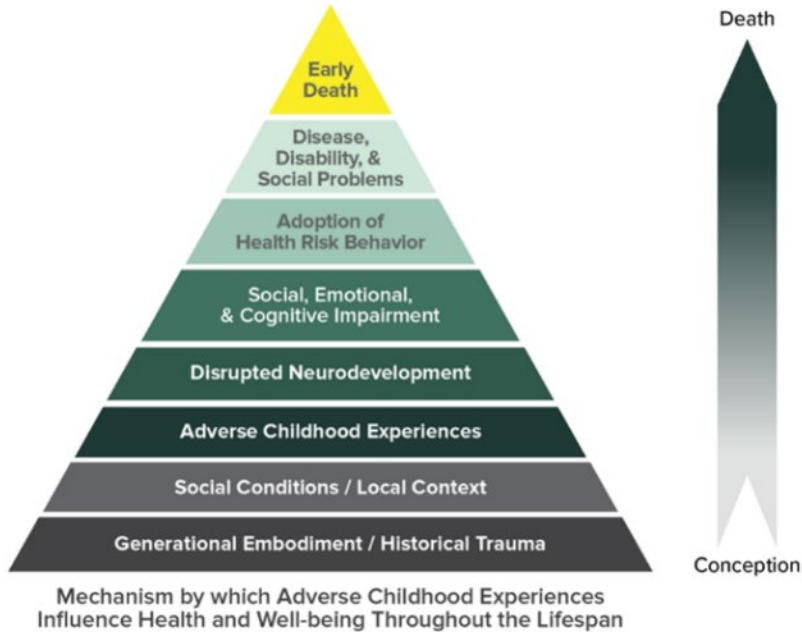
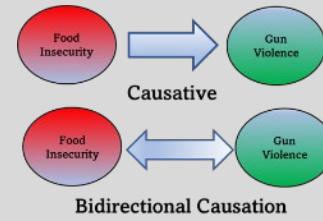
Modeling: **For every 1% increase in food insecurity, associated 12% increase in violent crime** (6)

Low food access regions correlated with: **high prevalence of gun violence** (5)

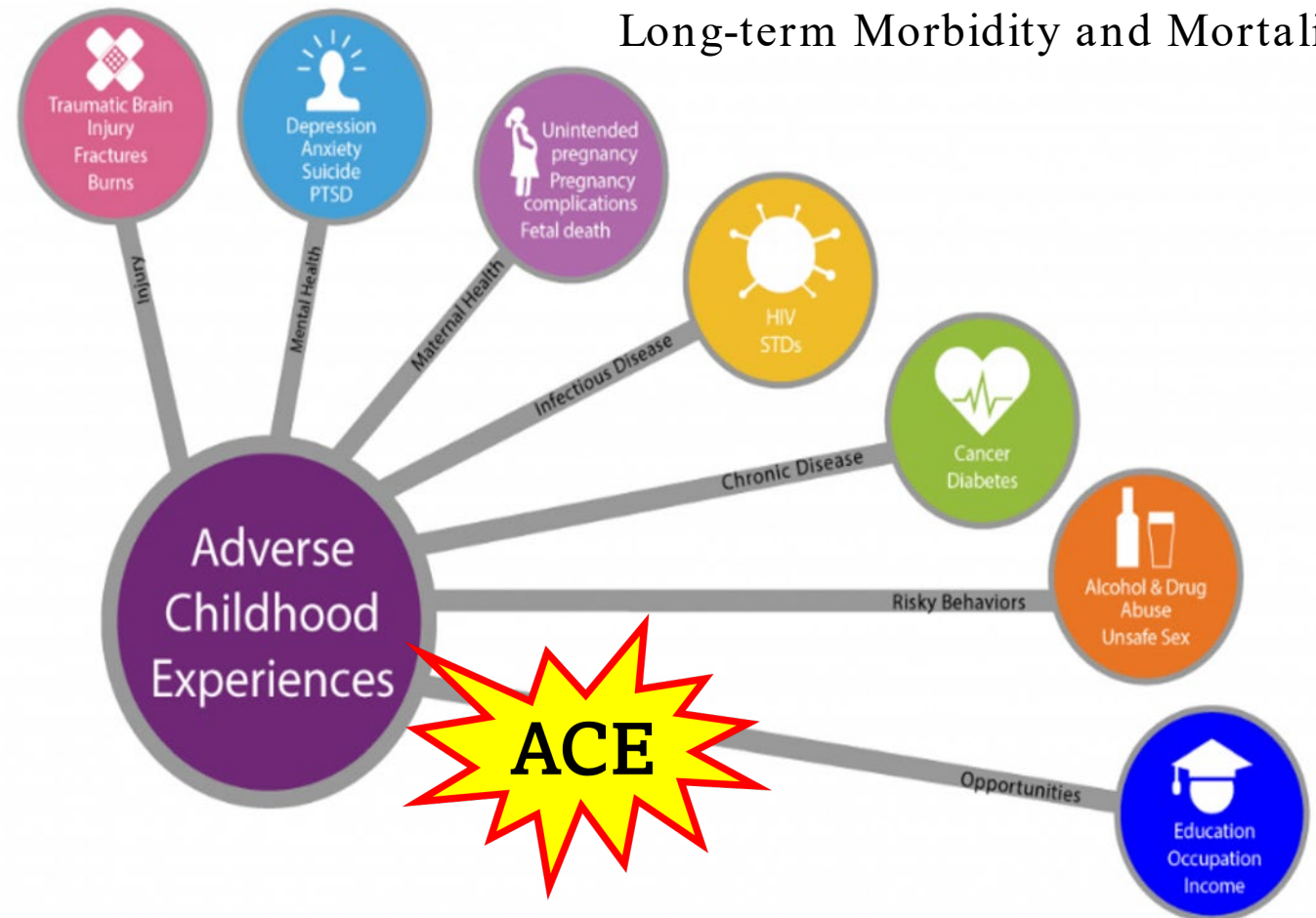


1. Chilton MM et al. Public Health Nutr. 2014 Jan;17(1):73-82
2. Helton JJ et al. Child Maltreat. 2019 May;24(2):213-221.
3. Conroy AA et al. PLoS One. 2019;14(3);e0213365
4. Jackson DB et al. Health Ed and Behavior. 2018;45(5);756-763
5. Smith RN et al. Am Surg. 2020 Sep; 86(9):1067-1072.
6. Caughron JR. Clemson, SC; Clemson U, 2016.  
[https://tigerprints.Clemson.edu/cgi/viewcontent.cgi?article=3571&context=all\\_theses](https://tigerprints.Clemson.edu/cgi/viewcontent.cgi?article=3571&context=all_theses)

# Adverse Childhood Experiences



Downstream Impact:  
Long-term Morbidity and Mortality



## Prior Slide

Very low food Security Mothers and Children: 60% described a life-changing violent event 1

Food Insecure Households: significantly increased parent-to-child psychological and physical aggression (from the Fragile Families and Child Wellbeing Study) 2

Food Insecurity strongly correlated with; sexual, physical, psychological violence (3)

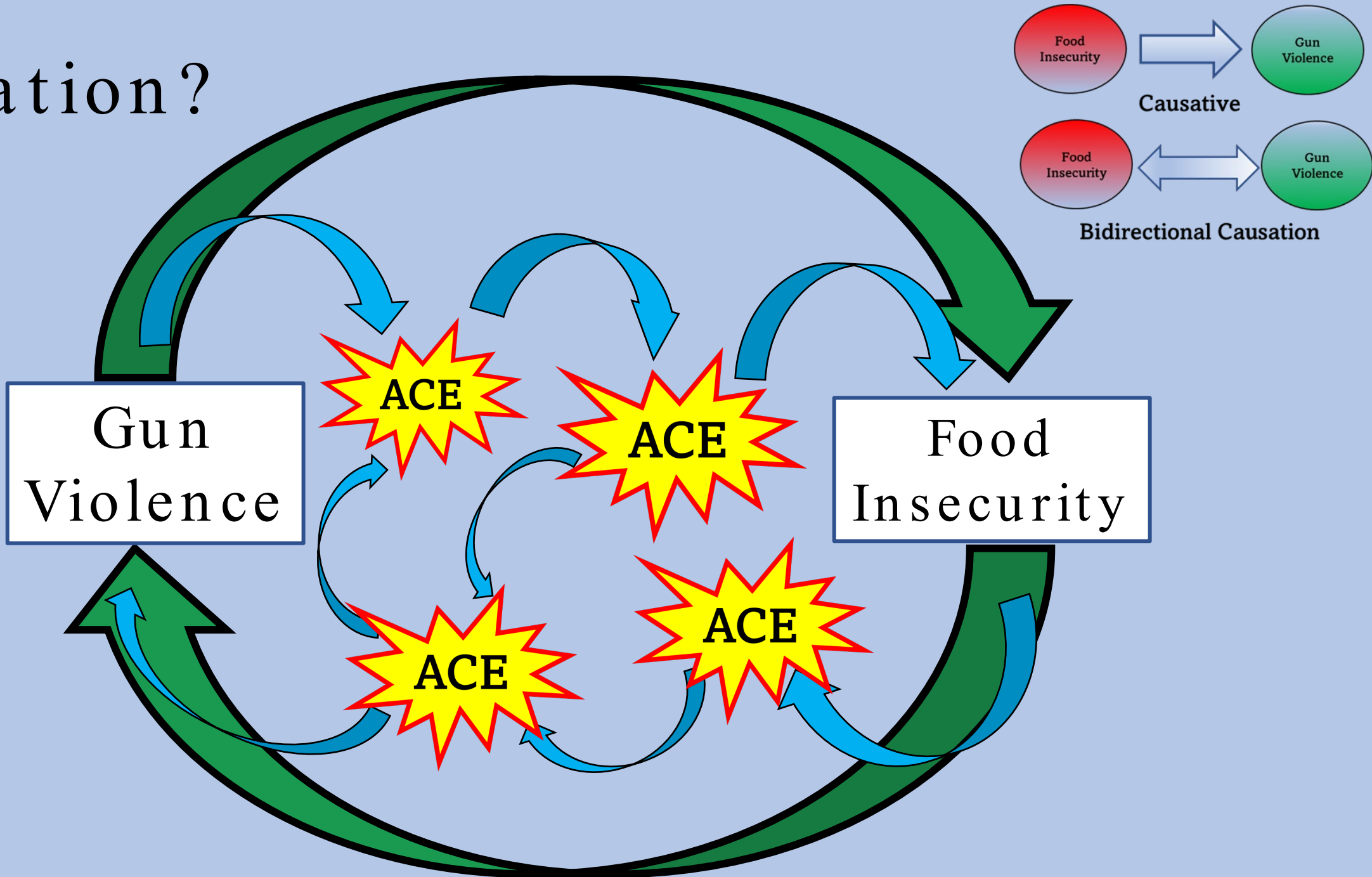
Children living in food insecure regions: 6xs more likely to be exposed to violence (witnessing or being victim of violent injury by age four) 4

Modeling: For every 1% increase in food insecurity, there was associated 12% increase in violent crime 5

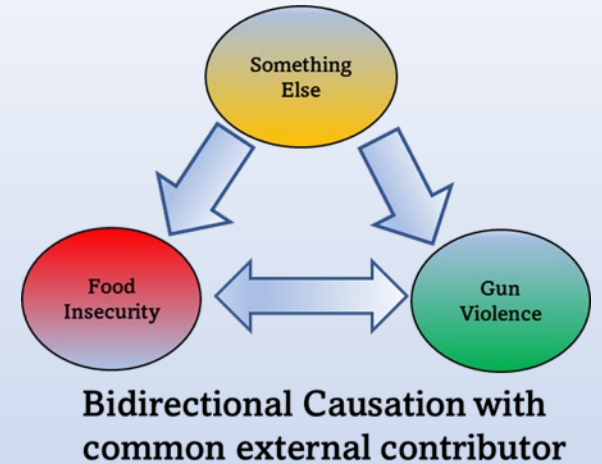
Low food access regions correlated with: high prevalence of gun violence (6)



# Causation?



# What about this common external contributor and the significant disparities?



Objective 3: Discuss how a history of targeted disinvestment has led to the concentrated emergence of multiple public health issues in a subset of the American population

# Map #1: Louisville, KY

BBC

Sign in

Home

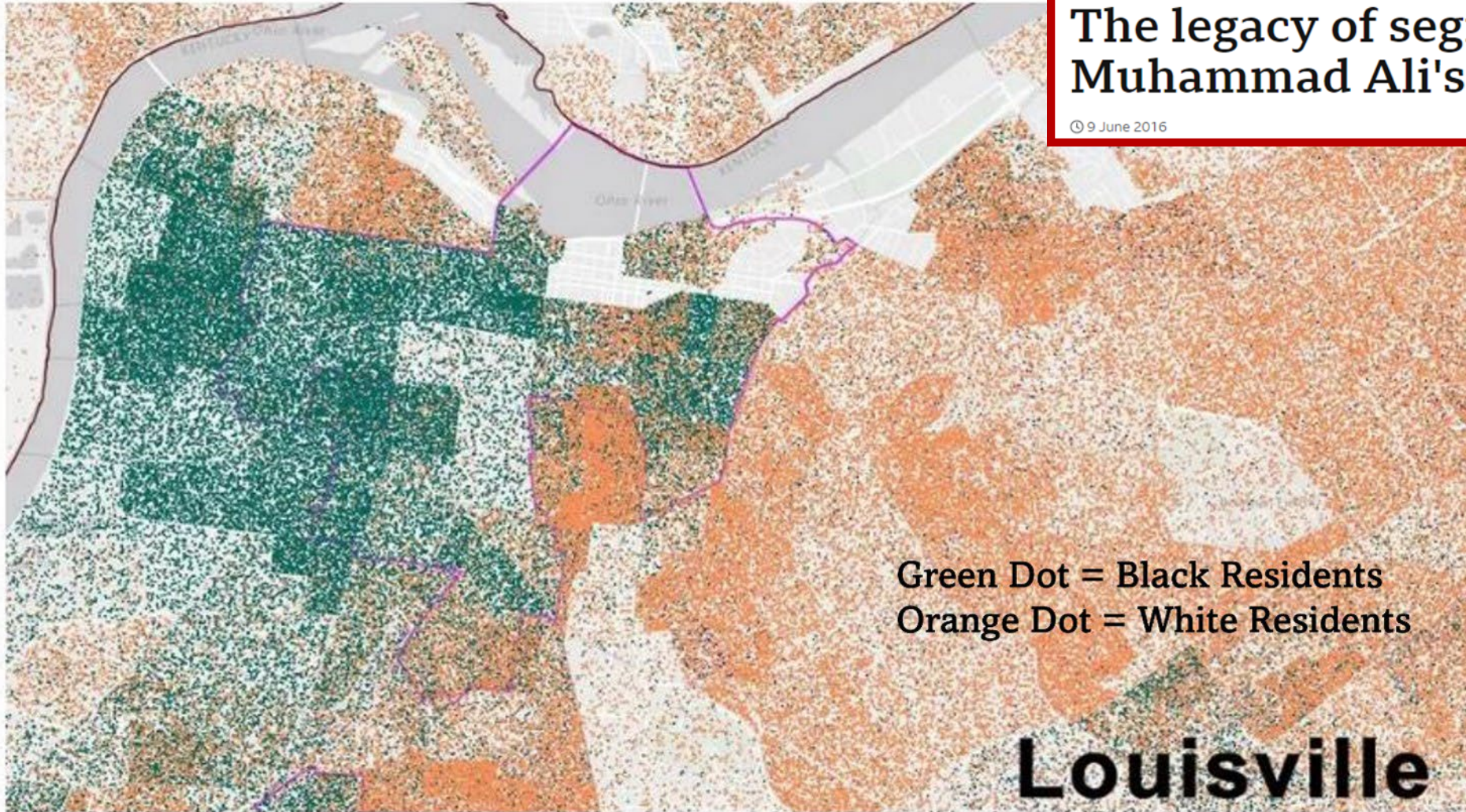
News

Sport

NEWS

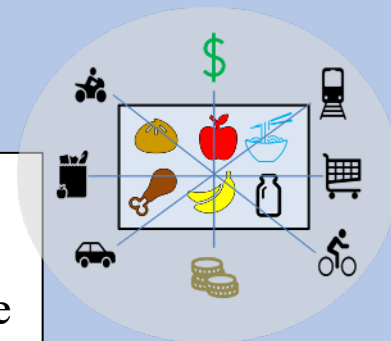
## The legacy of segregation in Muhammad Ali's hometown

© 9 June 2016



US Housing and Urban Development data map shows black residents in green and white residents in orange

# Map #2: Louisville, KY

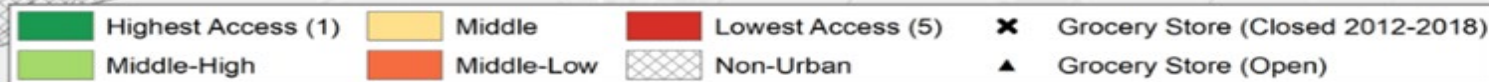
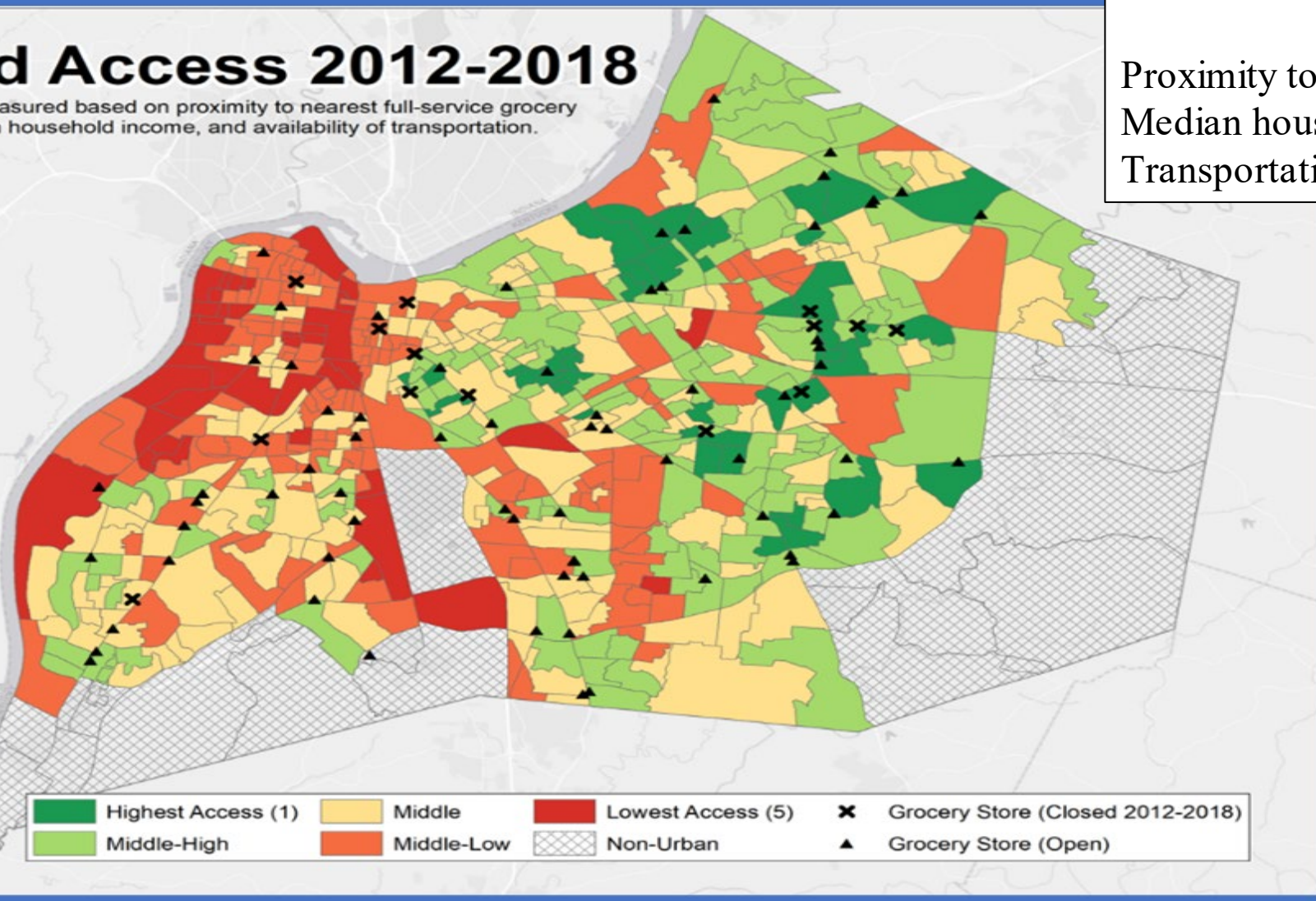


Access measured by:

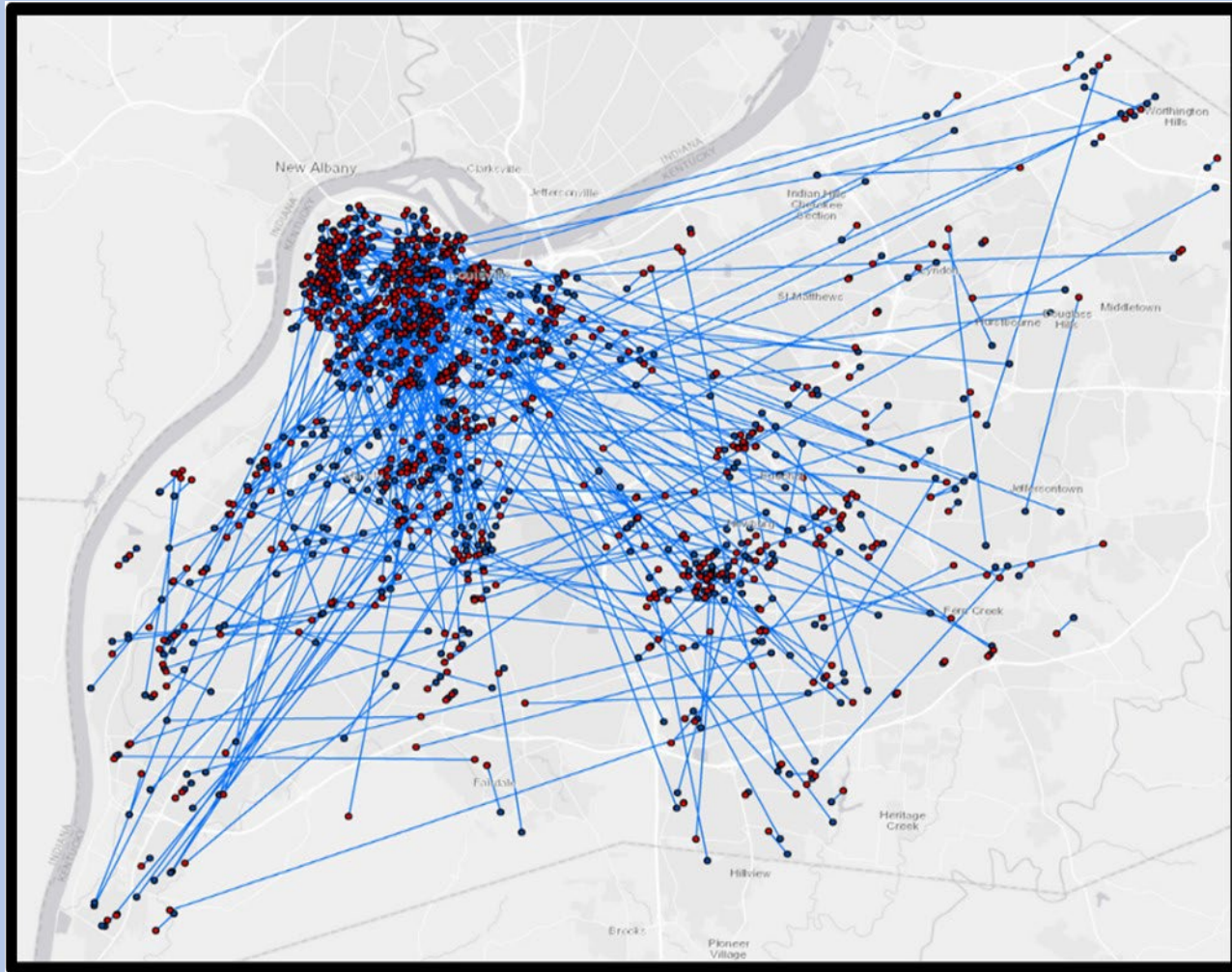
Proximity to grocery store  
Median household income  
Transportation

## Food Access 2012-2018

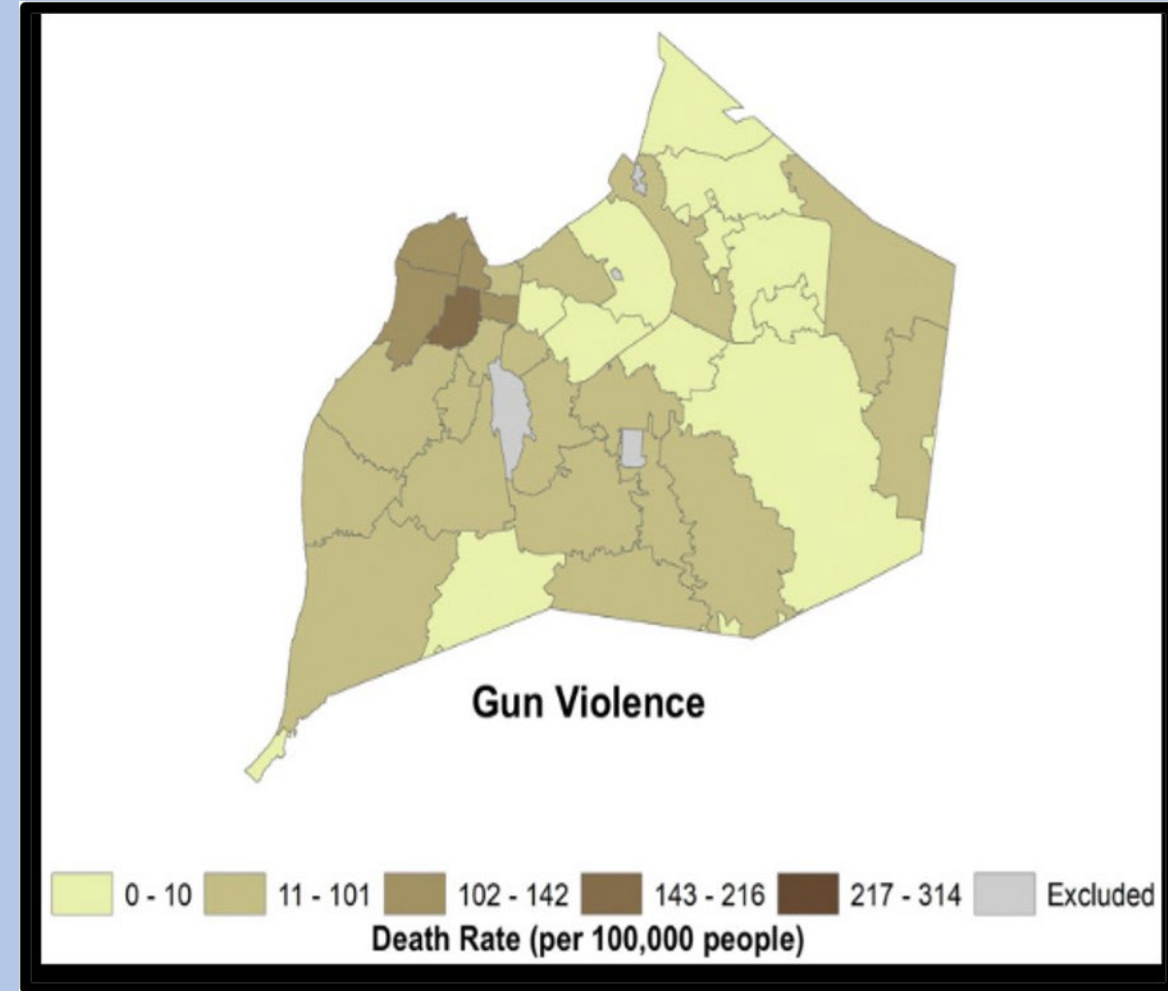
Access is measured based on proximity to nearest full-service grocery store, median household income, and availability of transportation.



# Map #3: Louisville, KY



Firearm Injury

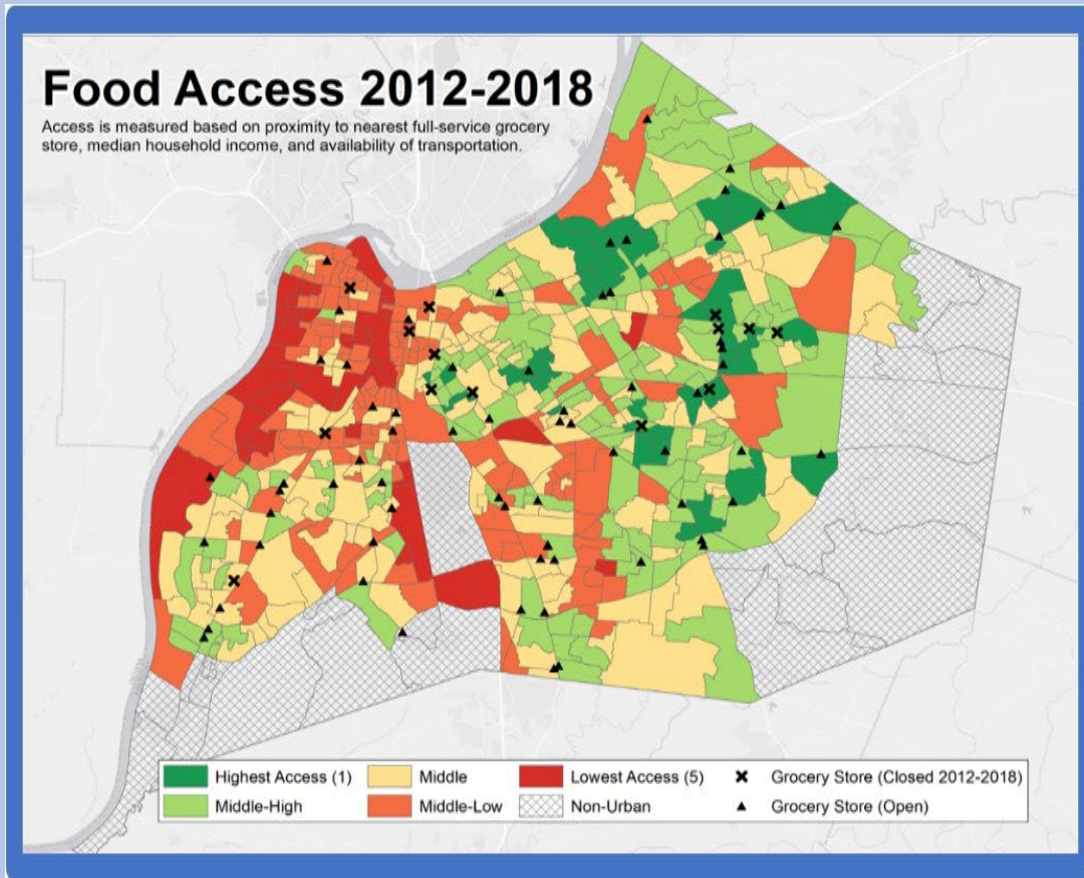


Firearm Fatality

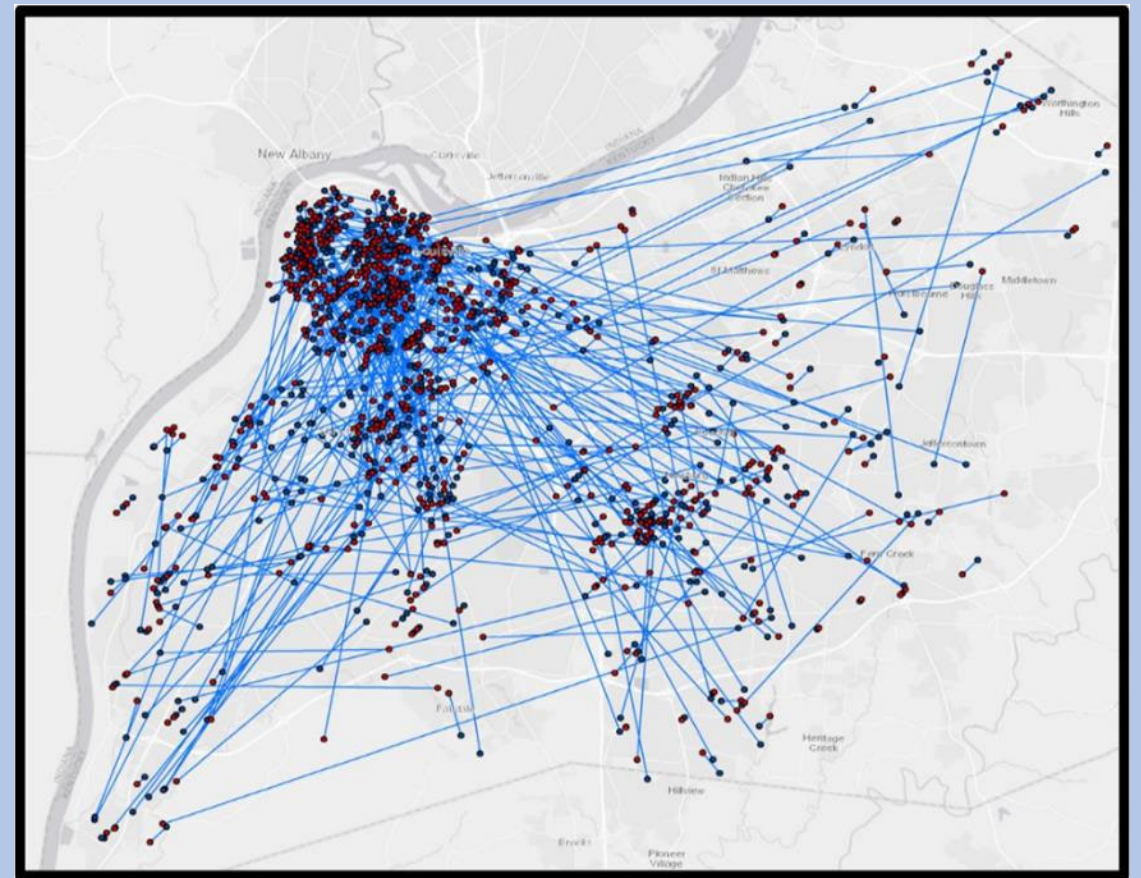


# Trauma Surgeon Reaction to Food Access Map...

Objective 4: Explain why a trauma surgeon has anything to say about this issue

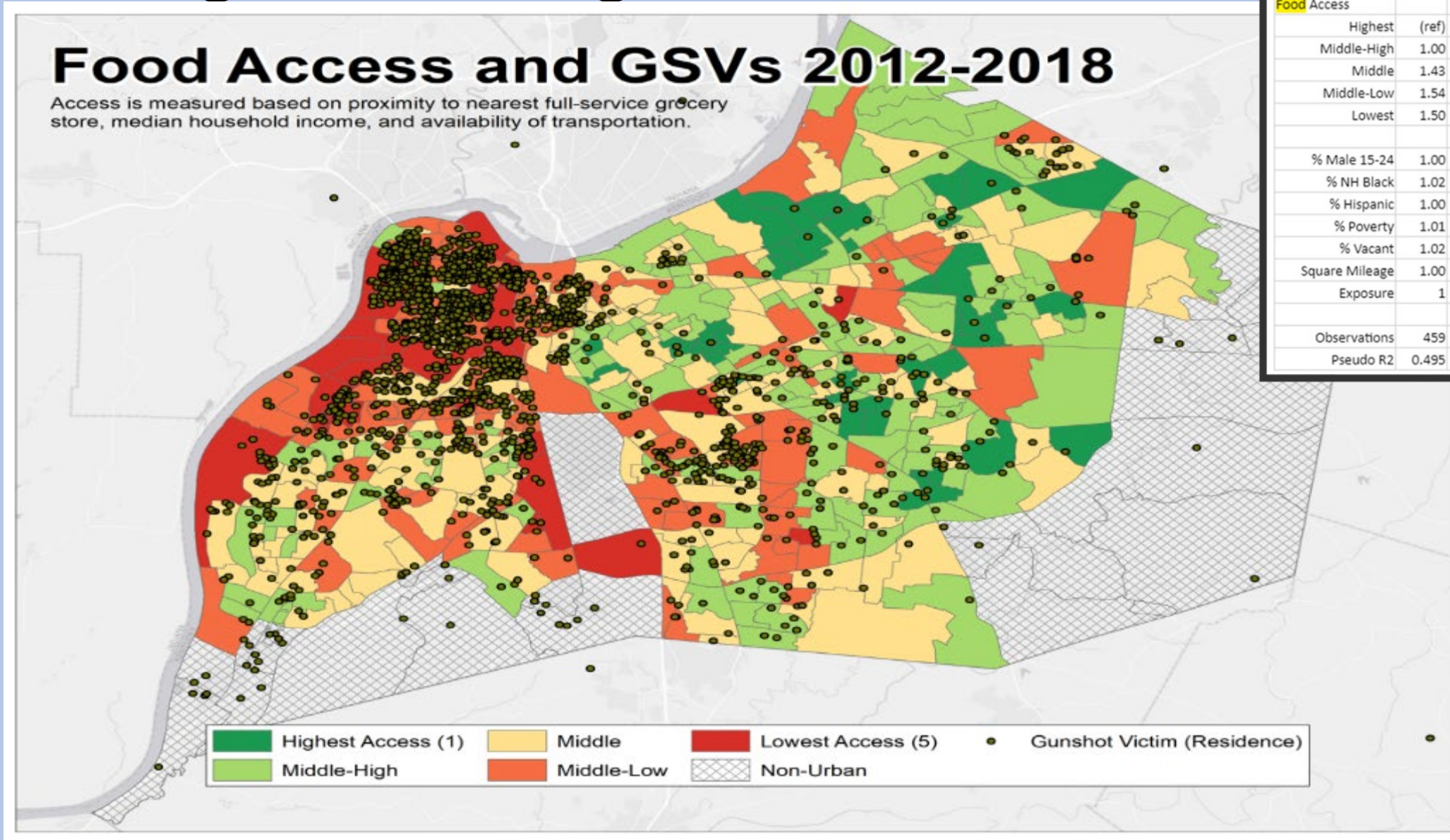


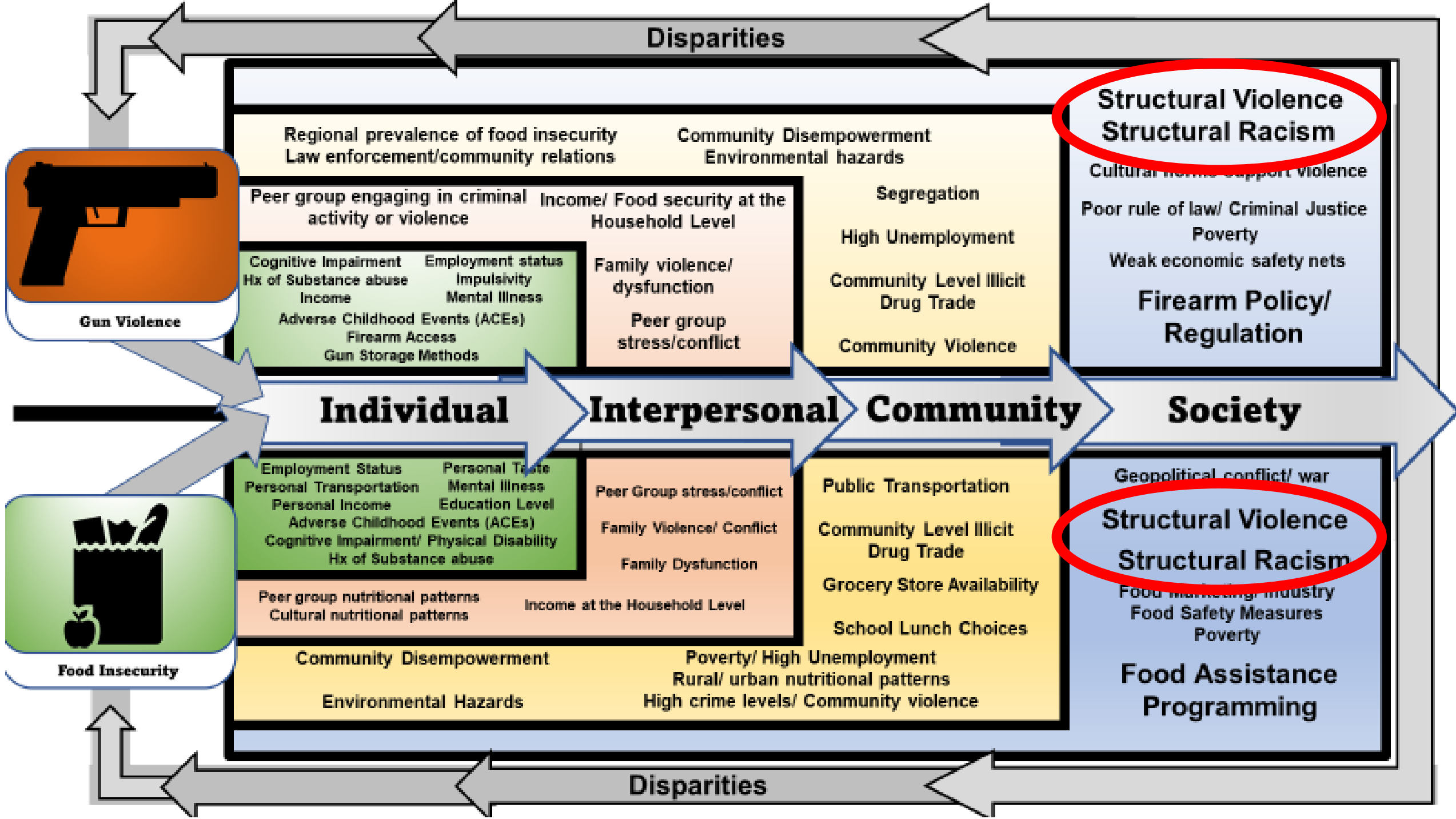
Food Access...



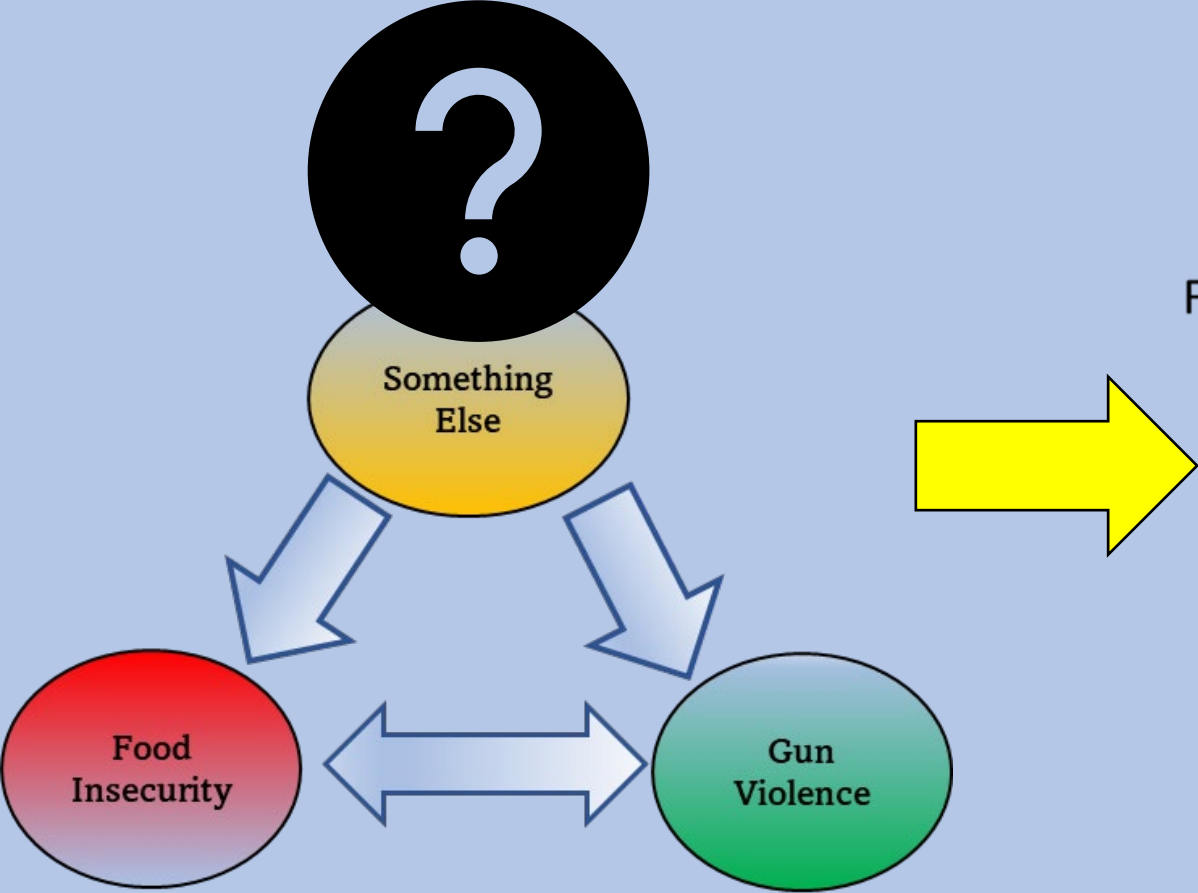
Firearm Injury

# Putting them together.

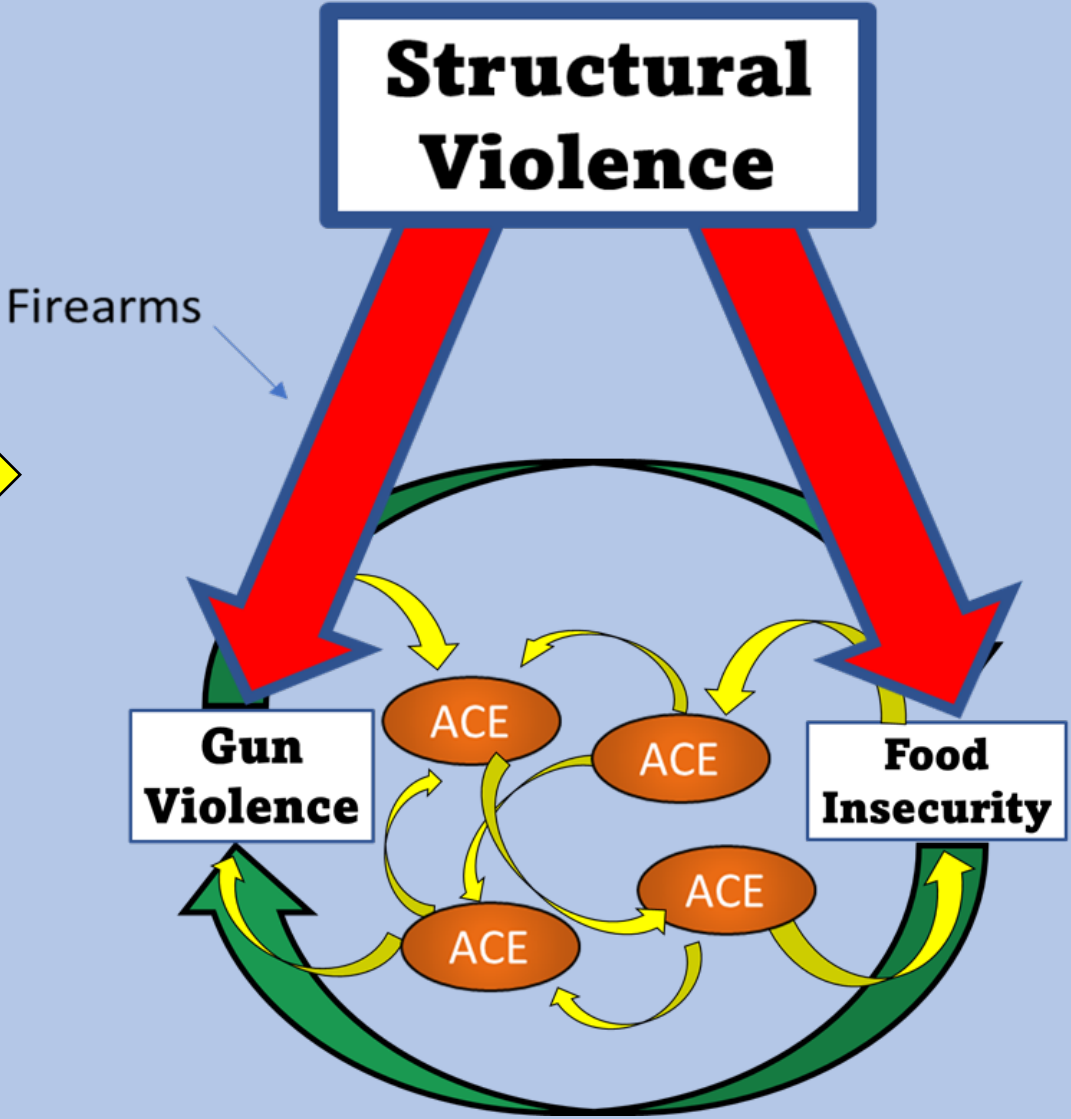




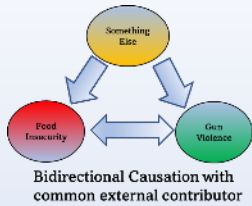
# Structural Violence: The Something Else



Bidirectional Causation with common external contributor

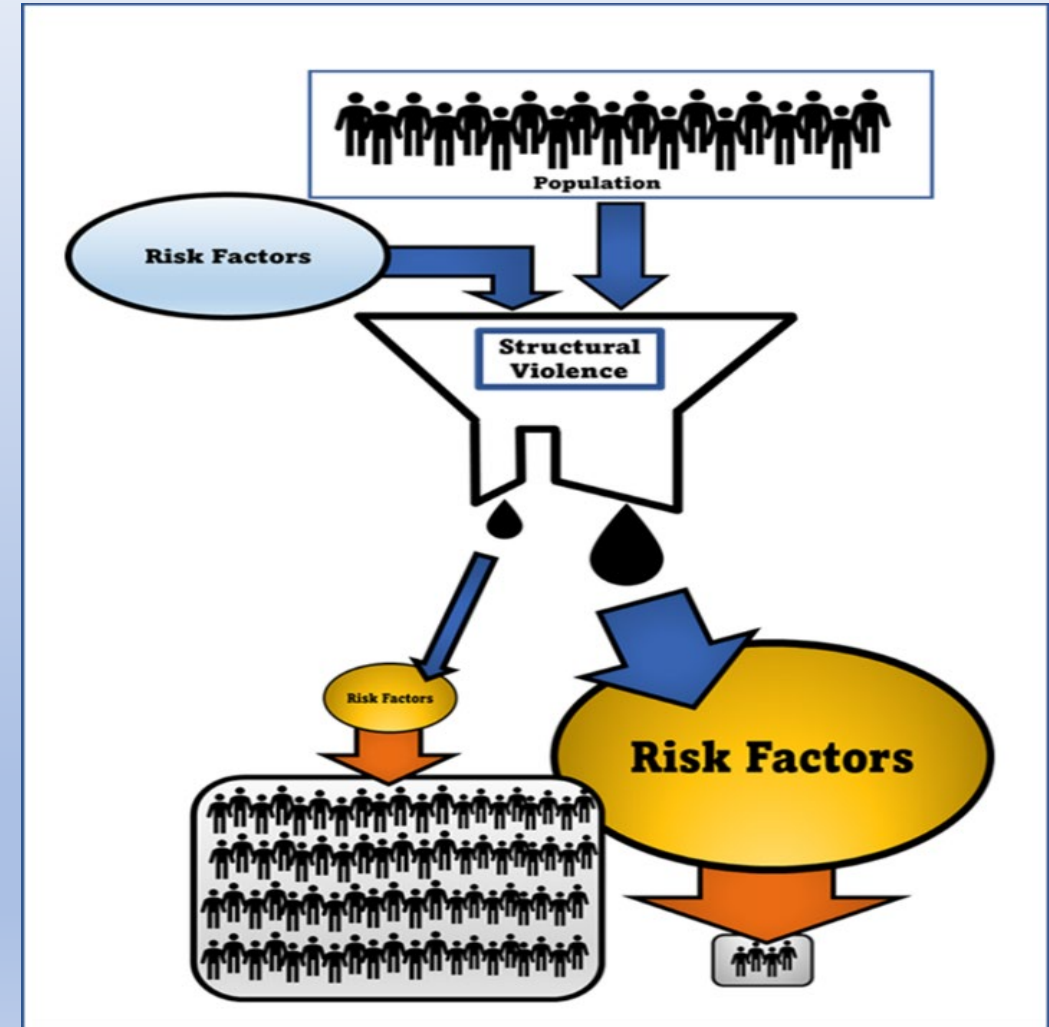


# Structural Violence:



- “social structures or institutions harm people by preventing them from meeting basic needs.”
- Closely related to Structural Racism (race specific rather than other distinctions)
- Systematic, Systemic
- Creates unfair disadvantage for populations, promotes health inequity
- almost invisible “normalization of the abnormal”
- Differs from physical violence-
  - injuries not caused by individual, but rather “exerted systematically.”

The ensuing concentrated disadvantage sets the stage for the emergence of multiple public health challenges in the same subset of the population.



# Map #4: Louisville, KY

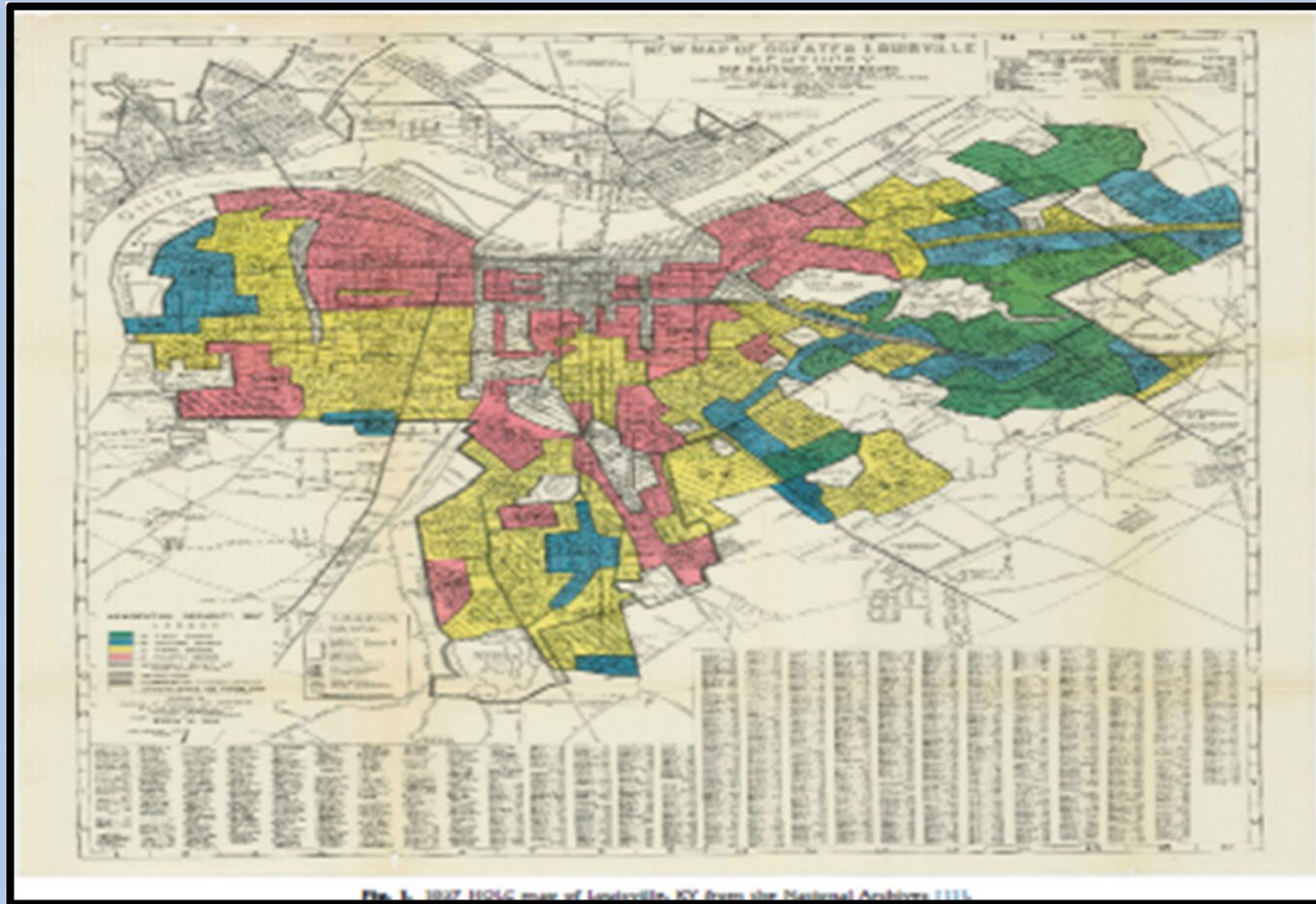
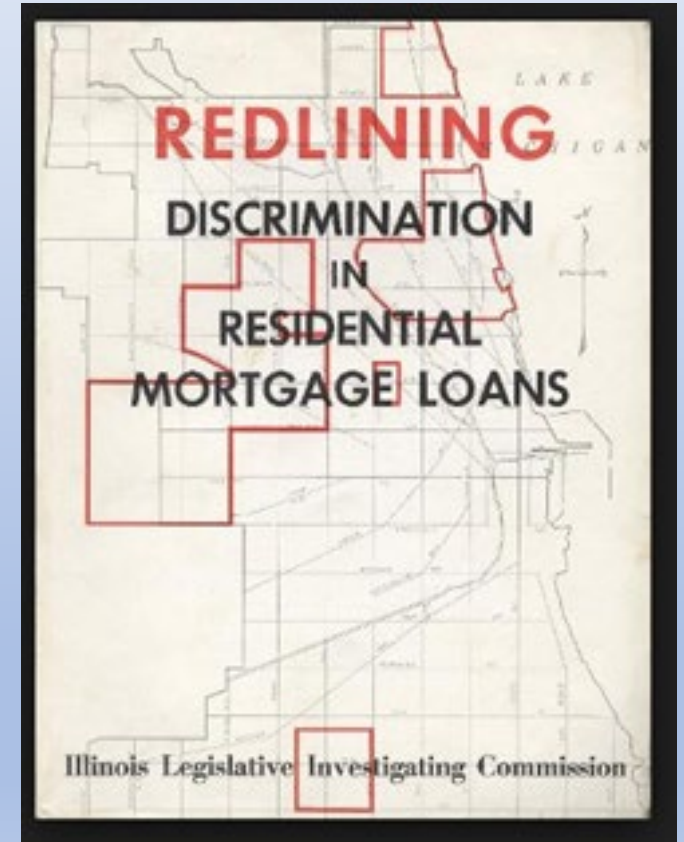


Fig. 1. 1837 1836 map of Louisville, KY from the National Archives (11)

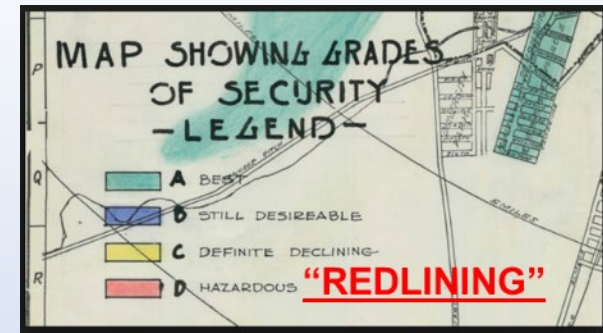
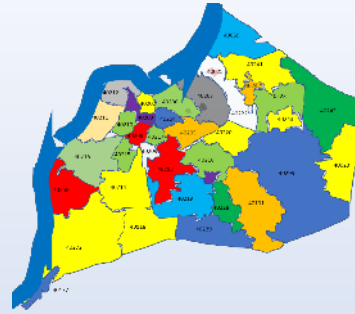
# An Example of Structural Violence:

## Redlining

- **Redlining: practice of denying services to residents of certain areas based on the racial or ethnic composition of those areas.**
- Federal Housing Administration (FHA), 1934
  - Created to aid the housing market during Great Depression by providing assistance/ insurance for private mortgages
  - Asked Home Owner's Loan Corporation (HOLC) to create residential security maps ("redlining maps")
    - 200+ American cities to guide investments
  - Maps assigned grades "A" through "D" to neighborhoods to indicate their desirability for investment



# REDLINING



- ‘A’ grade: “homogeneous”
- ‘D’ grade: “undesirable population or an infiltration of it”
  - Neighborhoods with high percentage of African Americans or immigrant populations invariably rated ‘D’
- Most ‘A’ areas had specific deed restrictions that prevented the sale of property to racial minorities



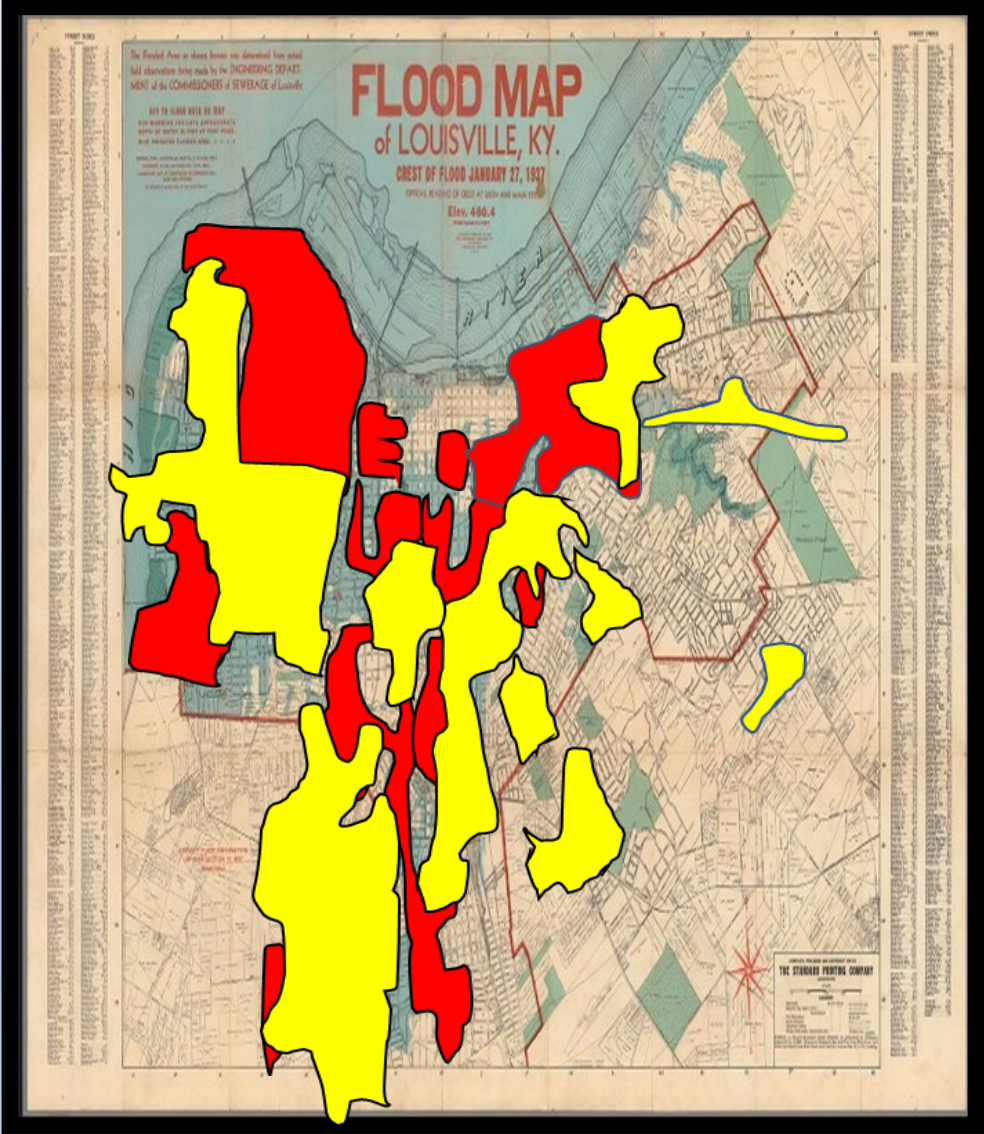
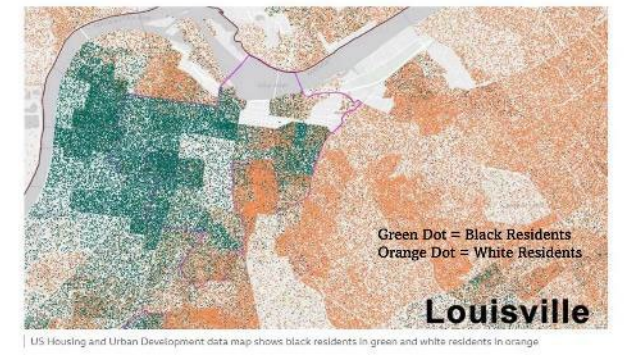
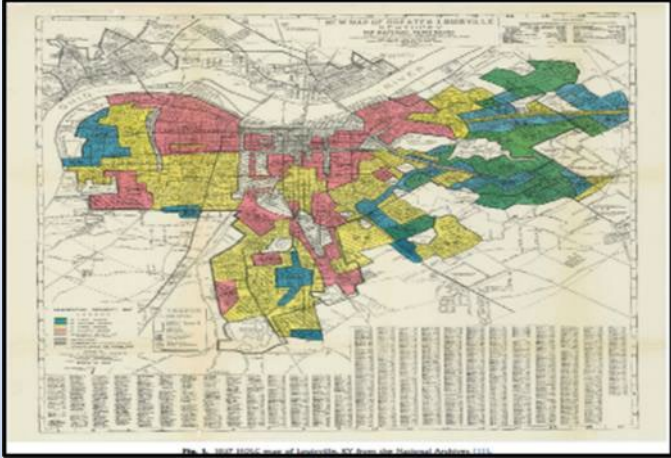
14. **RACIAL RESTRICTIONS**...No property in said addition shall at any time be sold, conveyed, rented or leased in whole or in part to any person or persons not of the White or Caucasian race. No person other than one of the White or Caucasian race shall be permitted to occupy any property in said addition or portion thereof or building thereon except a domestic servant actually employed by a person of the White or Caucasian race where the latter is an occupant of such property.

- Issues exaggerated after WW2 GI Bill
  - Explosive growth of suburbs with concomitant urban decay
- Policies explicitly persisted into the 1970s, and well beyond



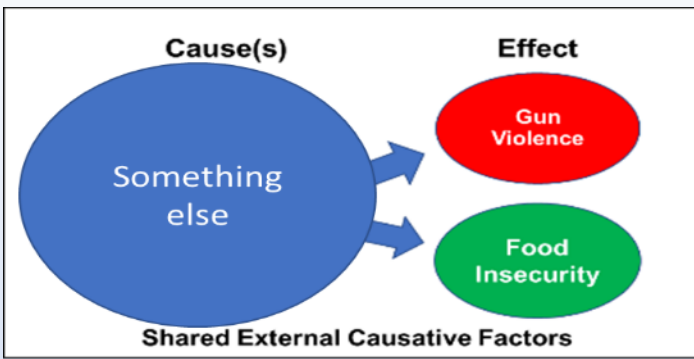
# Louisville

Every city has it's history...



[https://www.weather.gov/lmk/flood\\_37](https://www.weather.gov/lmk/flood_37)

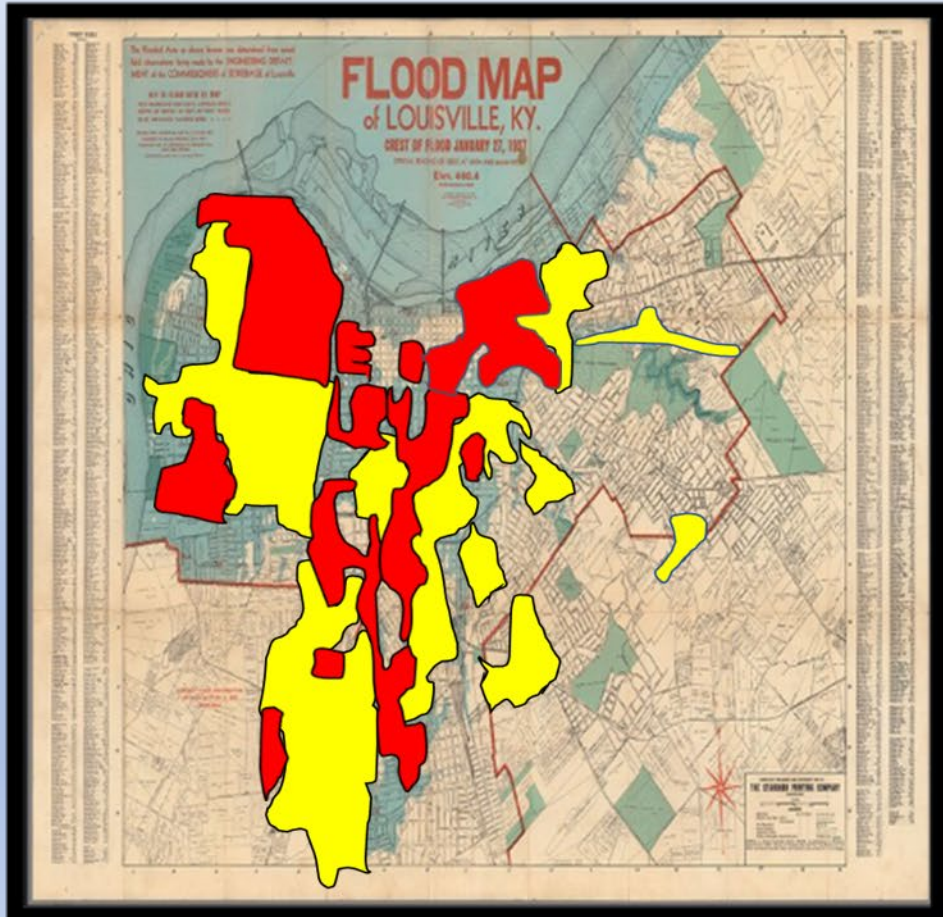
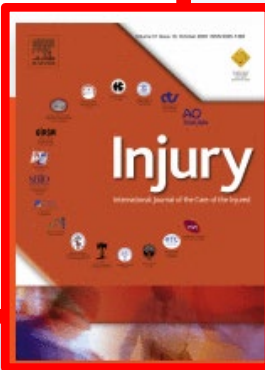
<https://louisville.edu/artsandsciences/news/podcasts/1937-flood>



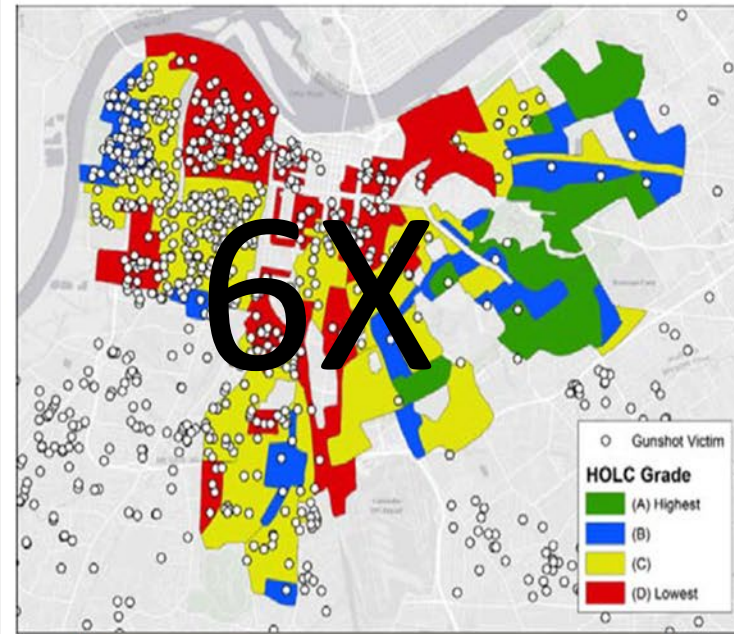
# The impact of historical racism on modern gun violence: Redlining in the city of Louisville, KY<sup>☆</sup>

Matthew Benns<sup>\*</sup>, Matthew Ruther, Nicholas Nash, Matthew Bozeman, Brian Harbrecht, Keith Miller

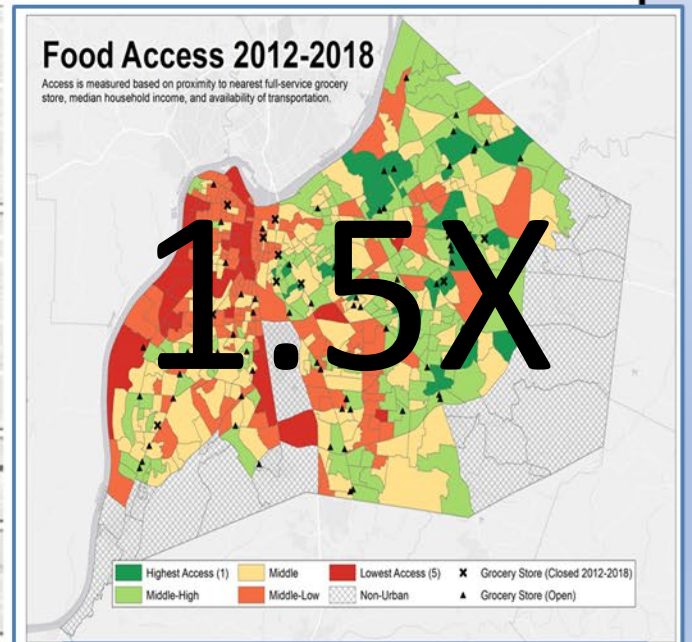
Department of Surgery, University of Louisville School of Medicine, 530 South Jackson Street, Louisville, KY 40203



**Conclusion:** Redlined neighborhoods within Louisville, KY in 1937 had significantly more GSVs today. The impact of historical and institutional racism on modern gun violence merits acknowledgement and further study.



Redlining and GV



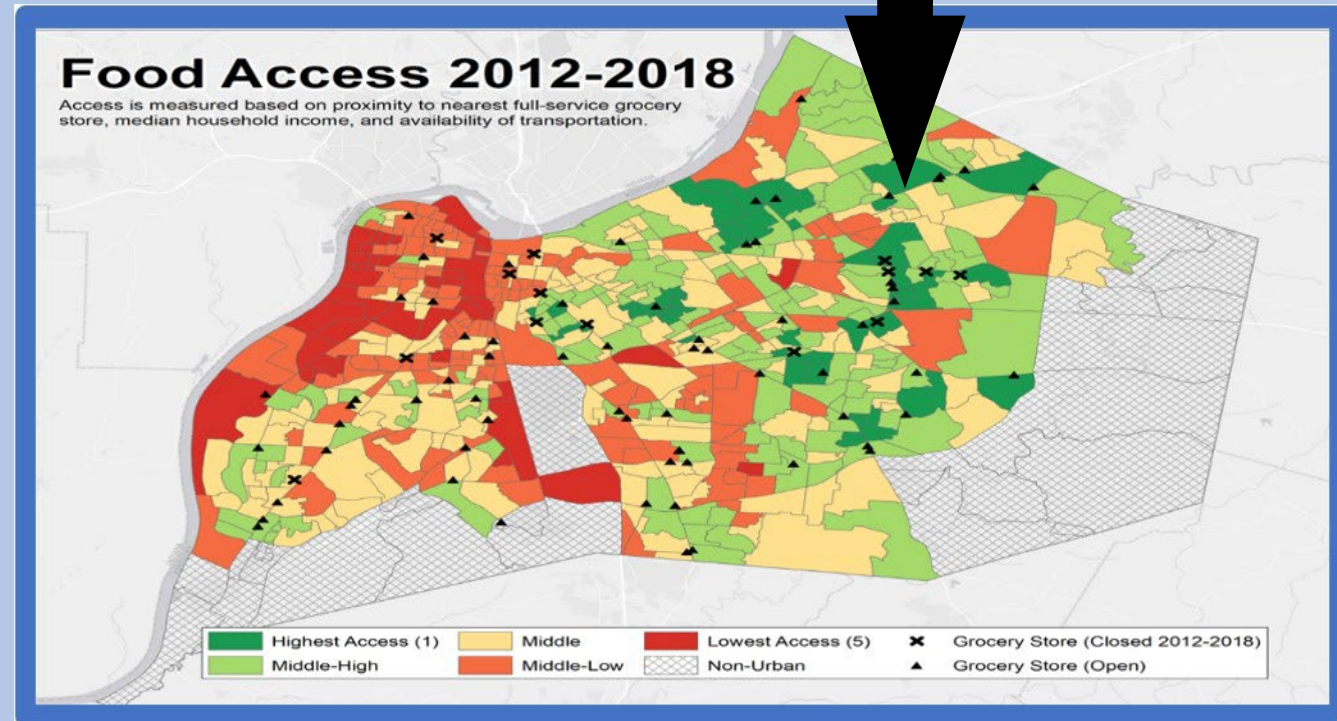
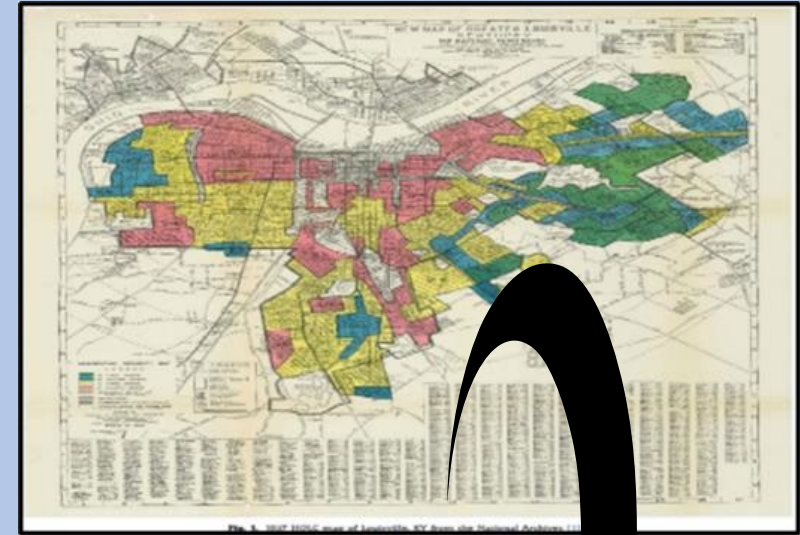
Food Access and GV

# Supermarket Redlining

Disinclination to locate supermarkets in urban communities densely populated by minority communities or low-income neighborhoods

Guise of low projected profit margins and anticipated higher rates of crime

Poorest urban neighborhoods 44% less supermarket space than richest neighborhoods



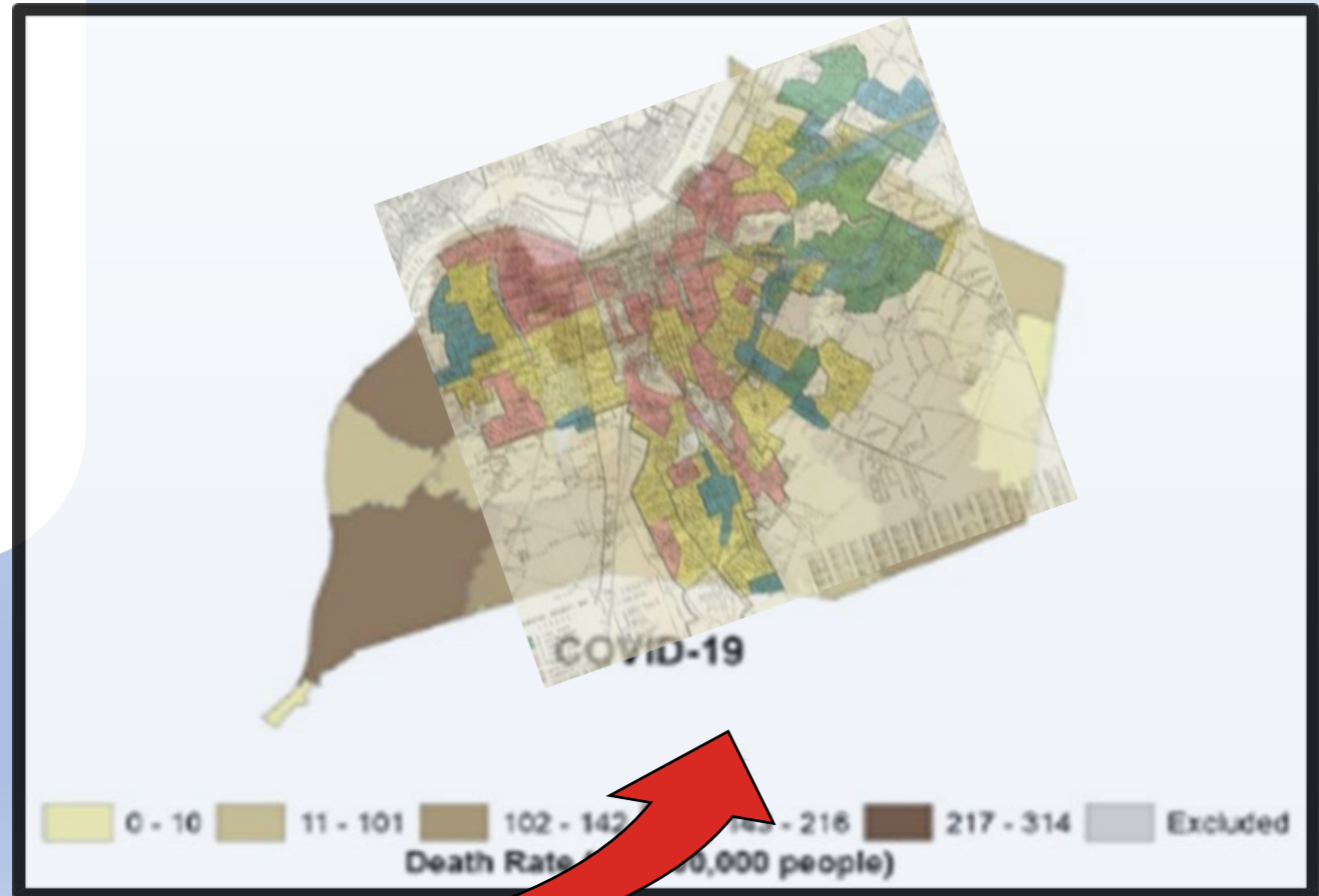
Zhang, M., & Debarchana, G. (2016). Spatial Supermarket Redlining and Neighborhood Vulnerability: A Case Study of Hartford, Connecticut. *Transactions in GIS*: TG, 20(1), 79–100. <https://doi.org/10.1111/tgis.12142>.

<https://www.bbc.com/news/world-us-canada-36472454>.

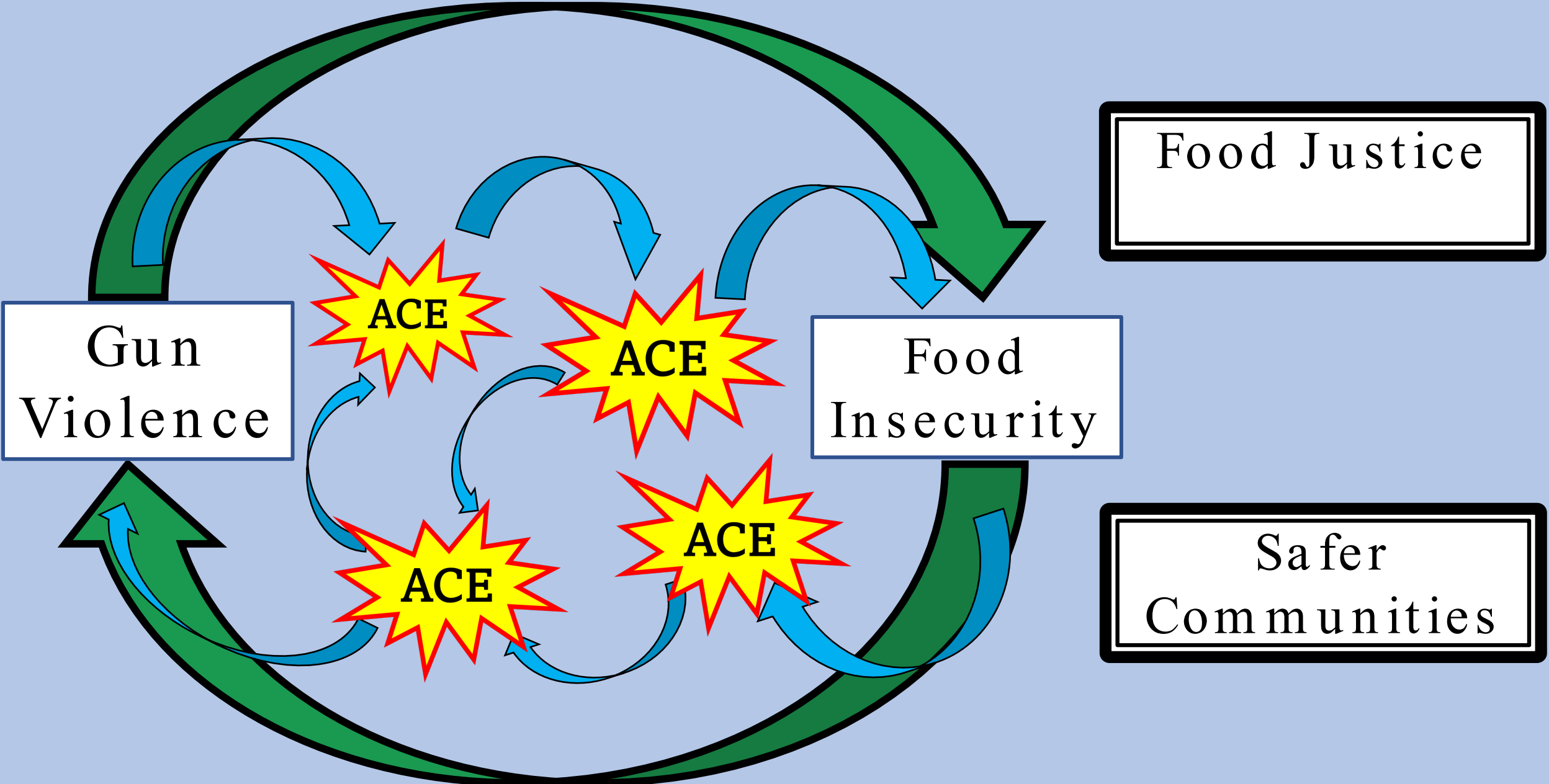
Miller et al. JACS. 2021 . Abst.

Structural Racism is a potent contributor to the observed disparities in firearm injury and food insecurity..

...and multiple other public health issues.



Good News!



Gun  
Violence

ACE

ACE

Food  
Insecurity

Food Justice

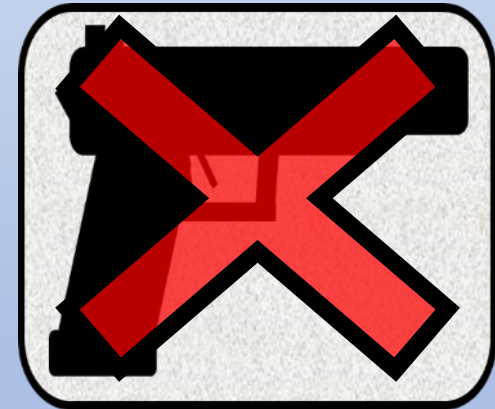
ACE

ACE

Safer  
Communities

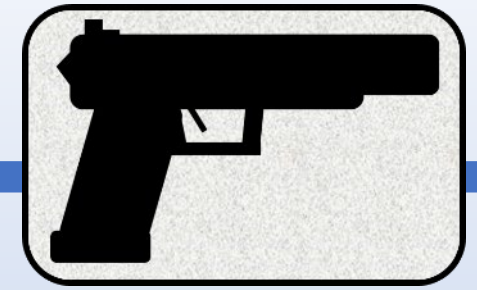
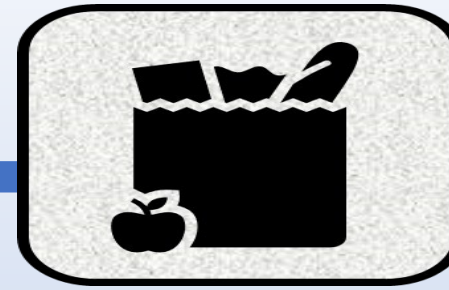
The efforts of this group are not only working to improve food access, but also to reduce firearm violence.

And working to address multiple overlapping public health issues.



So, thank you on behalf of all of us.

# Conclusions:



Food Access is the issue

FI and GV share multiple root cause contributors

FI and GV share stark disparities relevant to the populations most impacted

Given that SV concentrates multiple PH issues within similar populations, programming and preventative efforts can result in significant synergy





Nutrition Access  
Task Force Chair  
**Micah Osborne**  
President, Stratum Nutrition

# Convoy of Hope



**Amy Durkalski**  
Nutritionist and  
Community  
Health Specialist



**Alyssa  
Killingsworth**  
Partner  
Relations Manager



**Laurel Harvey**  
Rural Initiative  
Program



# Global Nutrition Overview

**Amy Durkalski**

Nutritionist and Community Health Specialist

Convoy of Hope

# Global Program Agriculture and Sustainability

**Alyssa Kingsworth**

Partner Relations Manager,  
Convoy of Hope

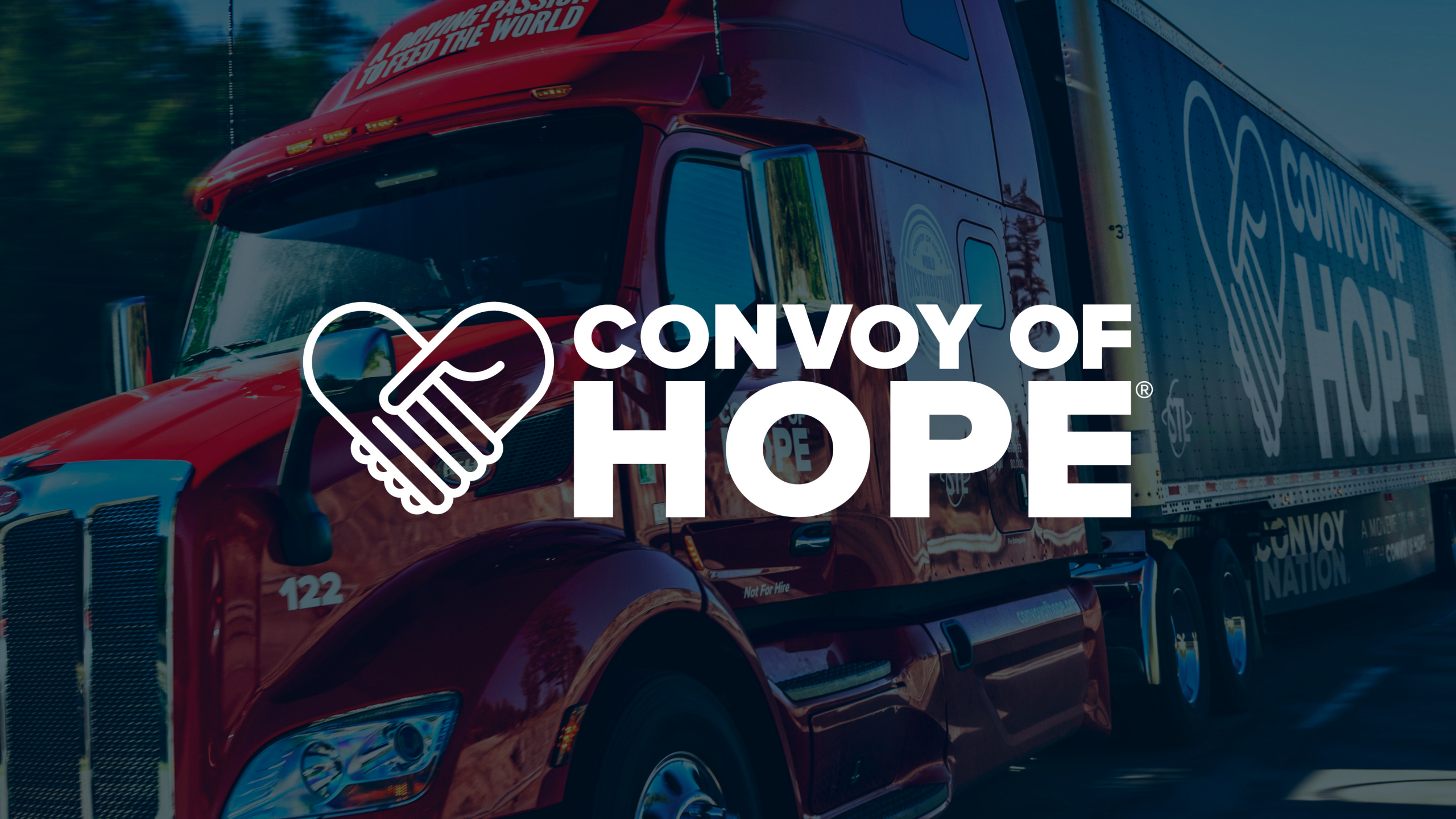
# Rural Initiatives Community and Product Partners

**Laurel Harvey**

Rural Initiatives Program,  
Convoy of Hope



# CONVOY OF HOPE<sup>®</sup>





# Children's Feeding

A CONVOY OF HOPE® Program





# Children's Feeding

Convoy of Hope is currently feeding more than 465,000 children every school day across 26 countries.



### Caribbean

Haiti

### Latin America

El Salvador  
Guatemala  
Honduras  
Nicaragua

### Africa

Burkina Faso  
Eswatini  
Ethiopia  
Kenya  
South Africa  
South Sudan  
Tanzania  
Togo  
Uganda  
Zimbabwe

### Europe & Asia

Bangladesh  
Bosnia  
Bulgaria  
France  
Greece  
India  
Israel  
Nepal  
Philippines  
Spain  
Sri Lanka



**Children's  
Feeding**

A CONVOY OF HOPE Program

**Serving across 26  
countries in 2021**

# BURKINA FASO, AFRICA HIGHLIGHT







# Agriculture

A CONVOY OF HOPE® Program



# Agriculture

Convoy of Hope equips people  
with skills, tools, and seeds to  
produce life-sustaining crops.



More than 23,900  
individuals engaged in  
agricultural training



# Women's Empowerment

A CONVOY OF HOPE® Program





35,300+ women and girls empowered



# Rural Initiatives

A CONVOY OF HOPE® Program



**Skippy**









➤ 23 RDPs

➤ Serving 251  
partners in  
7 states





# Rural Initiatives

A CONVOY OF HOPE® Program



# Thank You!

**MICHAEL OLMSTED - Procurement Director**

[molmsted@convoyofhope.org](mailto:molmsted@convoyofhope.org)

**(417) 851-5486**



# QUESTIONS?

## Please reach out to...

### **Keith Miller, M.D. FACS**

Associate Professor of Surgery in Trauma and  
Critical Care, University of Louisville

Associate Trauma Medical Director and Associate  
Program Director, General Surgery and Vice-Chair,  
Kentucky Committee on Trauma

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Michael Olmsted  
Procurement Director  
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(417) 851-5486

# The Impact of Hunger in America

A silhouette of a young child in profile, facing left, holding a dark bowl. The child is set against a warm, golden-brown background that suggests a sunset or sunrise. The lighting is soft and directional, highlighting the contours of the child's head and the bowl.

**WEBINAR: Nov. 16, 3-4 pm ET**

*Hosted by CRN's Nutrition Access Task Force*

*Open to all members*