Food Insecurity and COVID-19: Amplifying Threats to Health

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Disclosure Slide

I do not have any conflicts of interest to disclose.
Food Insecurity Worldwide
Worsening with COVID-19 pandemic

• 2020 Projections:
  o Severe hunger → doubles to 265M people¹
  o Extreme poverty → affects 71-100M more people²
  o Global food crisis & potential famine → 30+ countries³

More may die of COVID-19 consequences than of the disease itself

¹United Nations World Food Programme, 2020; ²World Bank, 2020; ³Beasley, UNWFP, 2020
COVID-19 Pandemic & Food Insecurity
A Perfect Storm
Food Insecurity Snapshots

- **United States**: Increased food insecurity (FI) in all 50 states
  - Household rates of FI **doubled** overall & **tripled** for families with children by April-May 2020¹
  - 2020 projections based on unemployment ➔ **17M more**² people with FI, or **45% increase** from 2018³

- **India**: Pandemic lockdown increased rural household FI⁴
  - 68% reported **reduced size** of meals
  - 50% reported **reduced number** of meals
  - 84% reported food support from national food safety-net

¹Schanzebach & Pitts, IPR, 2020; ²Feeding America, 2020; ³Coleman-Jensen et al., USDA Economic Research Service, 2019; ⁴VikasAnvesh Foundation et al., 2020
“This is truly more than just a [viral] pandemic – it is creating a hunger pandemic. This is a humanitarian and food catastrophe.”

David Beasley, Executive Director of the UN World Food Programme; interview with The Guardian, April 21, 2020
Demand for Food Assistance is Surging¹⁻²

Preparations for an emergency food drive in Des Moines, Iowa, USA

Line for free lunch in Minneapolis, Minnesota, USA

Volunteers prepare free meals for the homeless in Rio de Janeiro, Brazil

¹Feeding America, 2020; ²Slattery & Boadle, Reuters, April 21, 2020
COVID-19 and Food Insecurity: An Emerging Syndemic

- Susceptibility to SARS-CoV-2
- More Severe COVID-19 Illness
- Worse Long-Term Health

Food Insecurity

- Coping Behaviors
- Poor Nutrition
- Poor Mental Health

Poor Health Outcomes
Increased Virus Exposures

Coping Behaviors
Exchange sex for food
Pressure to continue working

Poor Nutrition
Nutrient deficiencies

Poor Mental Health
Stress
Depression and anxiety

Increased Virus Exposures

Immunologic Decline

Susceptibility to SARS-CoV-2

Food Insecurity

Coping Behaviors
- Prioritize food over healthcare\(^1\)\(^-\)\(^2\)
- Pro-inflammatory dietary patterns\(^3\)

Poor Nutrition
- Nutrient deficiencies\(^4\)

Poor Mental Health
- Stress\(^5\)

Inflammation (IL-6, CRP, TNF-R1)\(^6\)\(^-\)\(^8\)

More Severe COVID-19 Illness

Chronic Disease

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\(^1\) Weiser & Bangsberg, PLoS ONE, 2010; \(^2\) Kushel & Haas, JGIM, 2006; \(^3\) Lopez-Garcia, AJCN, 2004; \(^4\) Rose & Oliveira, AJPH, 1997; \(^5\) Tuthill & Weiser, J Nutr, 2019; \(^6\) Mehta & Manson, Lancet, 2020; \(^7\) Leddy & Weiser, JID, 2019; \(^8\) Gowda & Aiello, AJPH, 2012.
Food Insecurity May Increase COVID-19 Morbidity

FIs important driver of chronic illness:

- 2x odds of diabetes
- 40% higher odds of hypertension
- 3x odds of HIV
- 2x odds of obesity
- 48% higher odds of obstructive airway disease
- 46% higher odds of chronic kidney disease

These same conditions elevate risk of severe COVID-19 and long-term health consequences

Addressing Food Insecurity During the Pandemic and Beyond

- Prioritize FI during pandemic: Incorporate food insecurity into all aspects of pandemic response.
- Bolster the health sector’s role: Include FI screening and referrals for all patients.
- Invest in structural change: Invest in livelihoods, support local economies, and build local food systems.
Evidence-Based Interventions: Food is Medicine

Food is Medicine interventions can improve health and reduce healthcare costs.

<table>
<thead>
<tr>
<th>Food pharmacies</th>
<th>Produce prescriptions</th>
<th>Medically tailored groceries and meals</th>
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<tbody>
<tr>
<td>Lowers BMI¹</td>
<td>Improves diabetes management²-⁴</td>
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<tr>
<td>Reduces major cardiovascular events⁵</td>
<td>Lowers hospital and ED admissions⁶-⁸</td>
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Evidence-Based Interventions:
Social Protection Approaches

Social protection approaches can improve nutrition and chronic disease outcomes.

- Cash transfers
- Economic strengthening
- Livelihood interventions

Shamba Maisha Agricultural Livelihood Intervention\(^1\)\(^2\)

- Improved food security and diet quality
- 7.6x odds of viral suppression
- Improved mental health
- Increased CD4 by 165 cells/mm

The syndemic of food insecurity and COVID-19 is catastrophic for health and well-being globally.

There has never been a more urgent time for action.