OPUS

Obesity-Related Policy, Systems, and Environmental Research in the US

Panel Discussions

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Where Do We Go Next? Scaling Systems Approaches for Equitable Obesity Prevention

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Critical Considerations for Next-Generation Childhood Obesity Interventions

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June 2024

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Disclosures

I do not have any conflict of interest to disclose.

Where do we go next?

Scaling systems approaches for equitable obesity prevention

Implementation Gaps of Intensive Lifestyle Interventions (1)

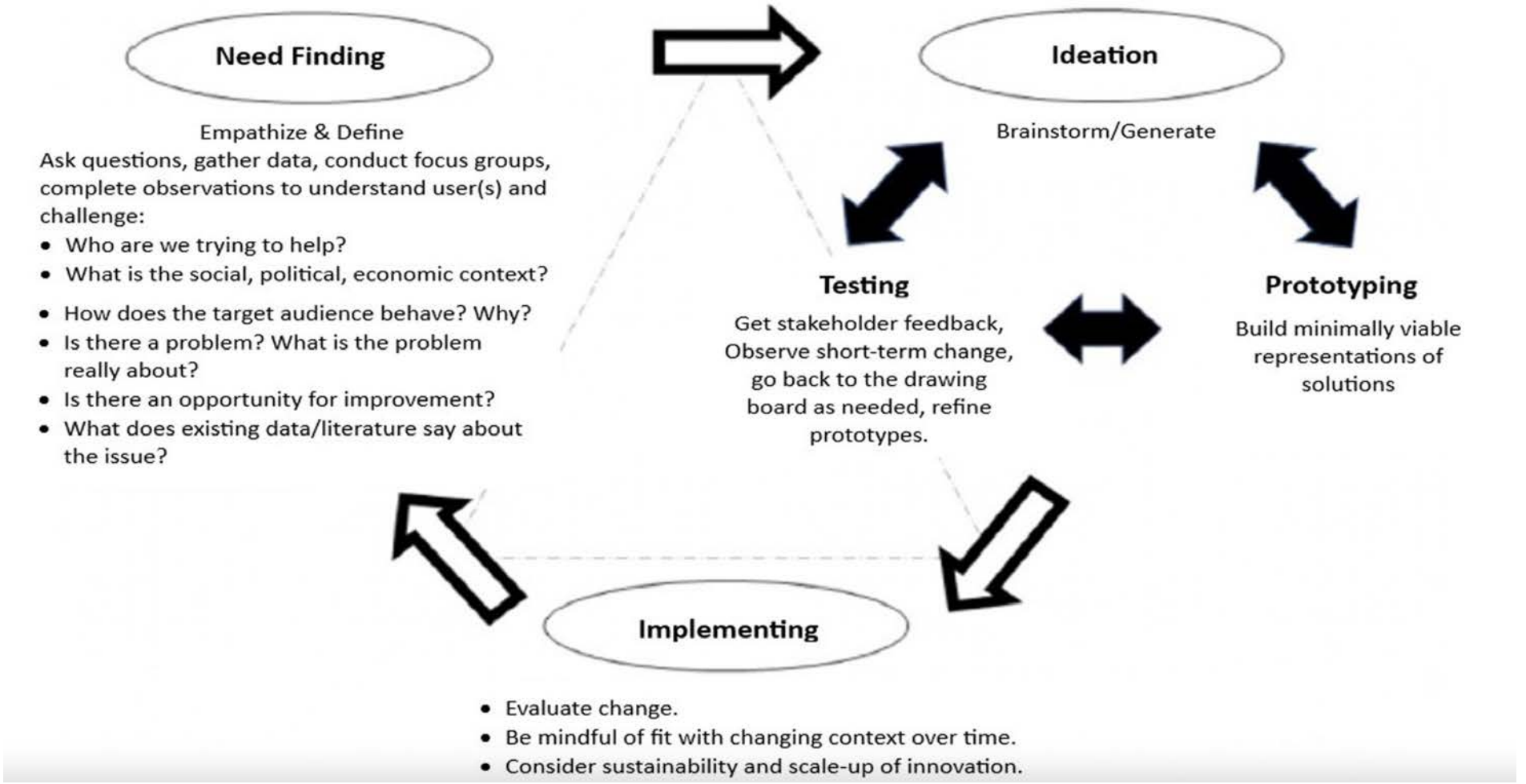
1. Implementation context
   - Mismatch between intervention and community readiness
   - Overlooking the built and social environment
   - Lack of attention to cultural nuance

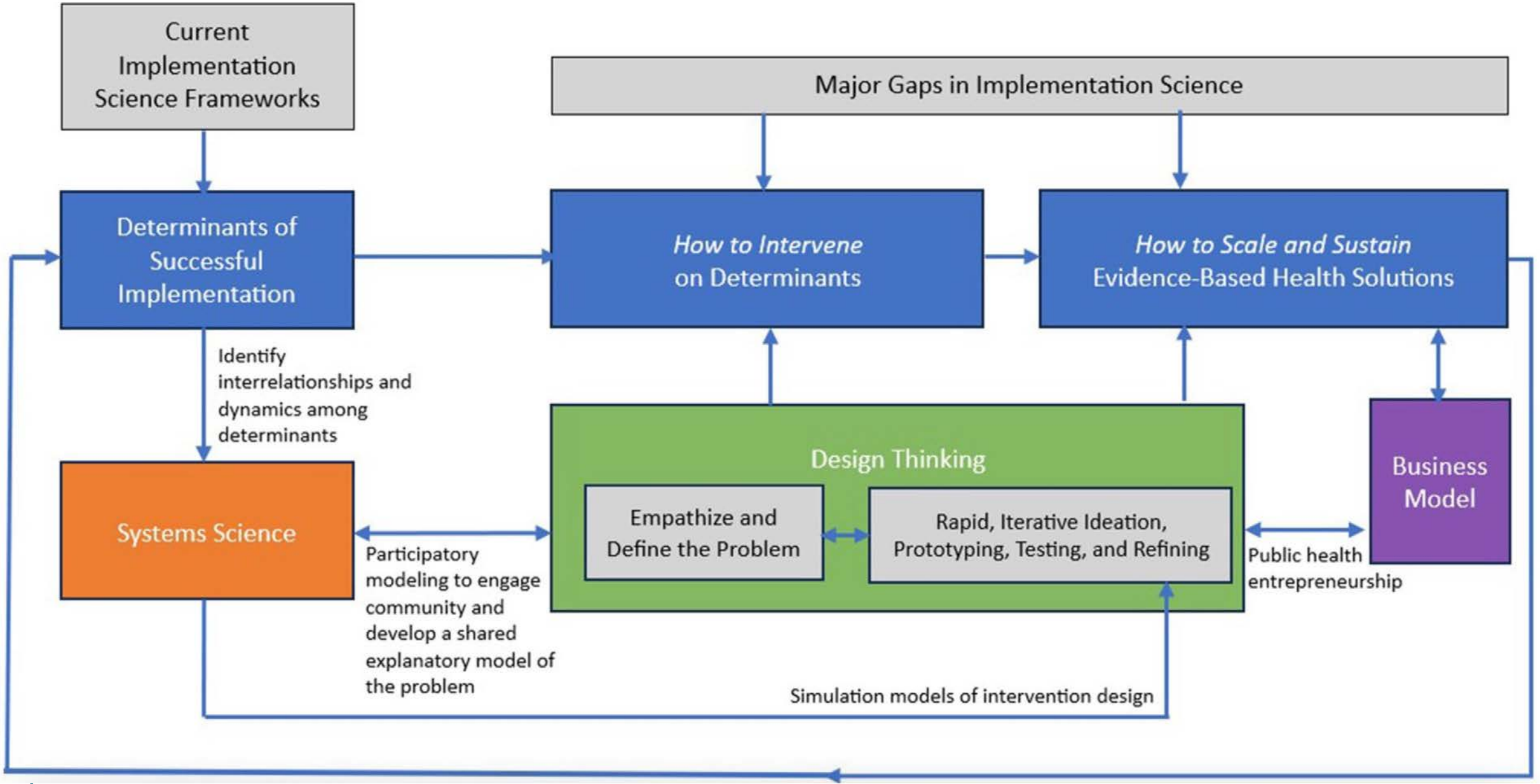
2. Intervention components, targets, and sequencing
   - Discounting different individual stages of change for different behaviors
   - Overlooking participants' mental health, cognitive load, and executive functioning
   - Knowledge gap on optimal sequencing of intervention components

Implementation Gaps of Intensive Lifestyle Interventions (2)

3. Delivery strategies
    - Push vs. pull strategies
        - Opt-out to maximize reach with personal customization on intervention content
    - In-person vs. virtual delivery
    - Intervention packaging and formats
        - Optimal dosage
        - Delivery channel
        - Integration with care or day-to-day life
        - Gamification
        - Incentives & disincentives

Leveraging Systems and Design Thinking to Improve Intervention Implementation




Current Implementation Science Frameworks
Major Gaps in Implementation Science
Determinants of Successful Implementation
How to Intervene on Determinants
How to Scale and Sustain Evidence-Based Health Solutions
Identify interrelationships and dynamics among determinants
Design Thinking
Empathize and Define the Problem
Rapid, Iterative Ideation, Prototyping, Testing, and Refining
Business Model
Systems Science
Participatory modeling to engage community and develop a shared explanatory model of the problem
Public health entrepreneurship
Simulation models of intervention design

Public Health Entrepreneurship

References

Huang TT, Callahan EA, Haines ER, Hooley C, Sorensen DM, Lounsbury DW, Sabounchi NS, Hovmand PS. Leveraging systems science and design thinking to advance implementation science: moving toward a solution-oriented paradigm. *Frontiers in Public Health* 2024; 12:1368050. https://doi.org/10.3389/fpubh.2024.1368050.

Finn EB, Whang C, Hong PH, Costa SA, Callahan E, Huang TT. Strategies to improve the implementation of intensive lifestyle interventions for obesity. *Frontiers in Public Health* 2023; 23:1202545. https://doi.org/10.3389/fpubh.2023.1202545.

Thank you!

Obesity-Related PSE Implementation Science:
How do we build the field?

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June 2024

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Disclosures

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Obesity-Related PSE Implementation Science

How do we build the field?

Purpose of this talk

- To catalyze thinking about how to advance implementation science for obesity-related policy, systems and environmental interventions
  - Provide an ongoing example focused on the built environment and physical activity

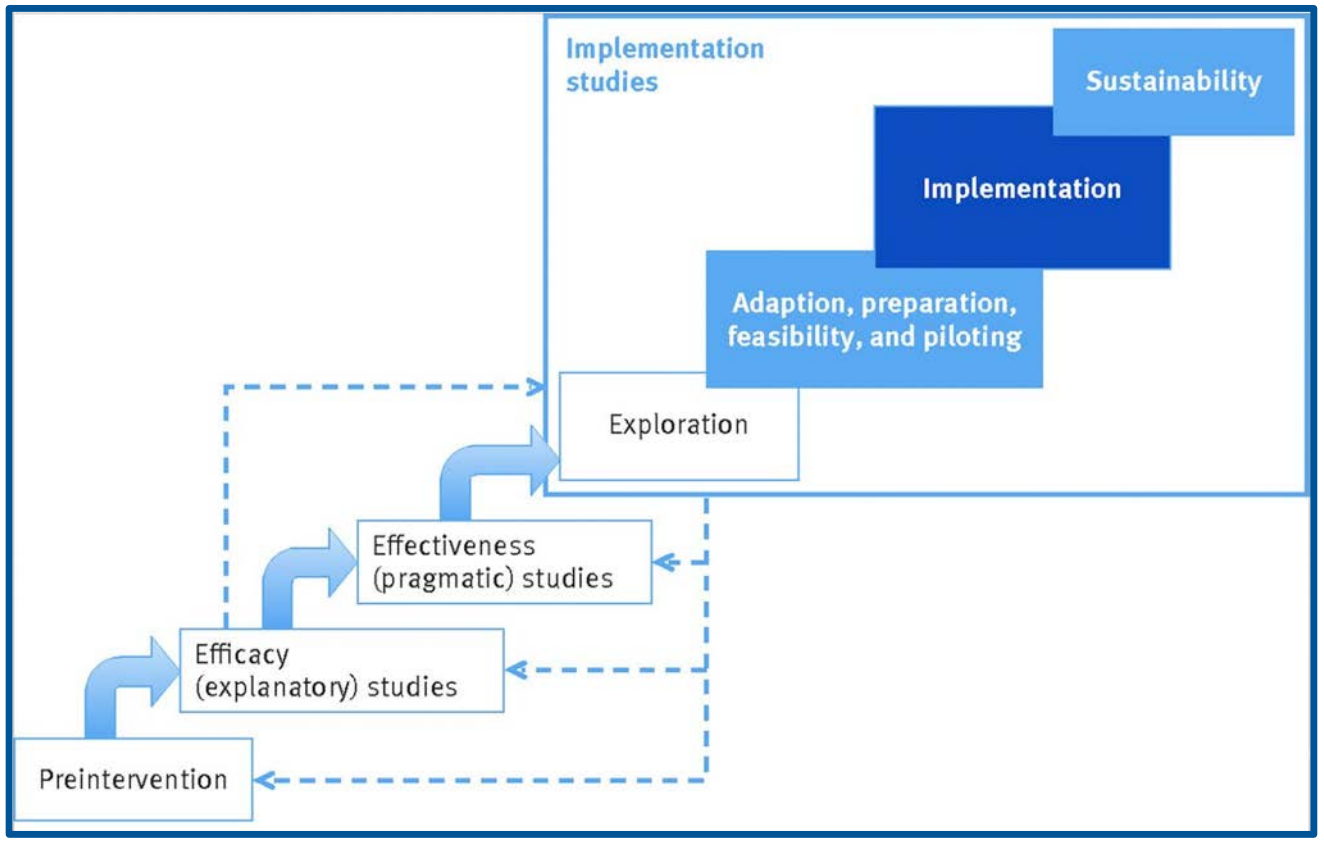
What is implementation science?

*"Implementation science is the **study of methods** to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings to improve the impact on population health." (https://cancercontrol.cancer.gov/is)*

*"Implementation research is the scientific study of the **use of specific strategies** to adopt and integrate evidence-based health interventions into clinical and community settings in order to improve patient/population outcomes." (NIH)*

*"Dissemination research is the scientific study of **targeted distribution of evidence** (knowledge, interventions, practices, policies) to a specific audience (e.g., public health, clinical practice, decision-makers) with the intention of understanding how to best spread and sustain evidence-based interventions. (Adapted from NIH)*

What is implementation science?



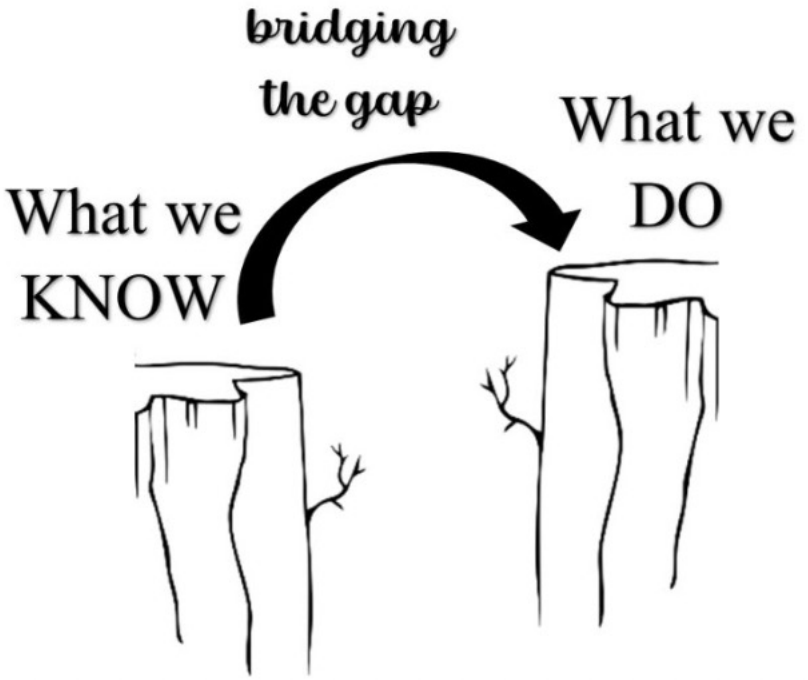


Image credit: https://depts.washington.edu/uwhivishub/resources/implementation-science-101/

Pinnock H, Barwick M, Carpenter CR, Eldridge S, Grandes G, Griffiths CJ, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor SJ; StaRI Group. Standards for Reporting Implementation Studies (StaRI) Statement. BMJ. 2017 Mar 6;356:i6795. doi: 10.1136/bmj.i6795.

PSE implementation science

Policy making

Policy-focused dissemination research

- Goal: Enact policies that are aligned with best evidence

Policy strategies

Non-policy implementation research

- Goals: Use policy as implementation strategies to put evidence-based interventions into practice

PSE Implementation

PSE implementation research

- Goal: Identify strategies that maximize the implementation (and impact) of PSE interventions

Adapted from Purtle J. *Policy Implementation Science*. YouTube. Feb 23, 2022. Accessed January 24, 2023. https://cancercontrol.cancer.gov/is/training-education/training-in-cancer/TIDIRC-open-access/module-8; https://www.youtube.com/watch?v=lK6qbppqSOQ.

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Methodological issues that need to be considered

Implementation science element	PSE-related questions
1. Engage **partners or other interest holders**	How do we do this across multiple sectors, centering communities and influencing decision-makers with intention? What are best, scalable practices?
2. Guided by relevant **framework, model or theory** (FMT)	How applicable are available FMT? What else is needed?
3. Tests an **implementation strategy**	What are the most promising strategies? How do strategies studied to date apply? What's novel?
4. Takes **local context** into consideration; Allows adaptation; Strives for scalability	How do we develop implementation strategies across multiple sectors and levels that can be scaled?
5. Uses an appropriate **study design**	What study designs accommodate the complex, messiness of PSE implementation? What about hybrid designs?
6. Assess **implementation outcomes**	What are most appropriate? What tools need to be developed? How to handle grant timelines?

Built environment interventions that combine one or more interventions to improve pedestrian or bicycle transportation system interventions with one or more land use and environmental design interventions to increase physical activity

What are Built Environment Intervention Approaches?

Built environment intervention approaches to increase physical activity create or modify environmental characteristics in a community to make physical activity easier or more accessible. Intervention approaches must be designed to enhance opportunities for active transportation, leisure-time physical activity, or both. The CPSTF recommends intervention approaches that include one or more components from each of the boxes below.

Built Environment Approaches in Combination by Intervention Type

Pedestrian and Bicycle Transportation System Intervention Component	Land Use and Environment Design Intervention Component
o Street pattern design and connectivity o Pedestrian infrastructure o Bicycle infrastructure o Public transit infrastructure and access	o Mixed land use o Increasing residential density o Proximity to community or neighborhood destinations o Parks and recreational facility access

Community Preventive Services Task Force

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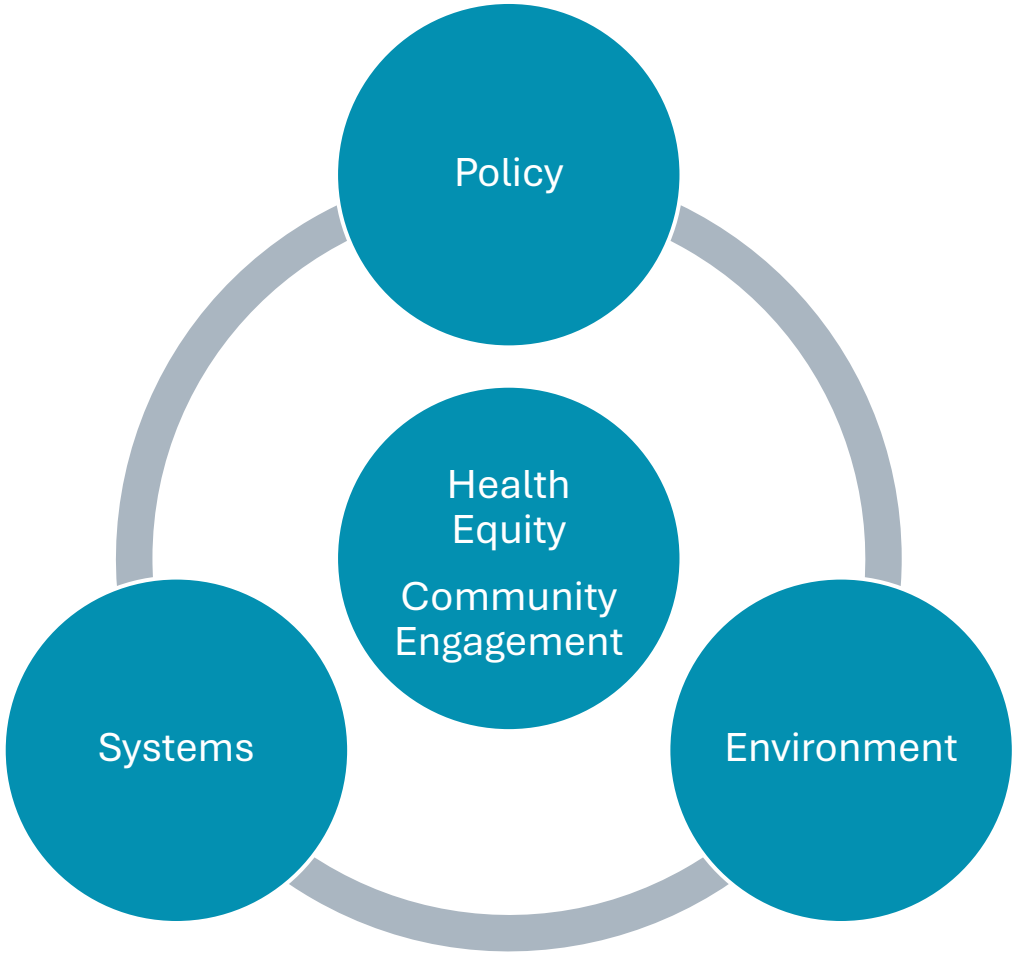
The relationship between built environment policy, and environment and systems



- Implementing built environment changes is often driven by relevant policies and plans
- Implementing these environmental changes and plans as intended falls to systems
  - Responsible for implementation
  - Influence implementation

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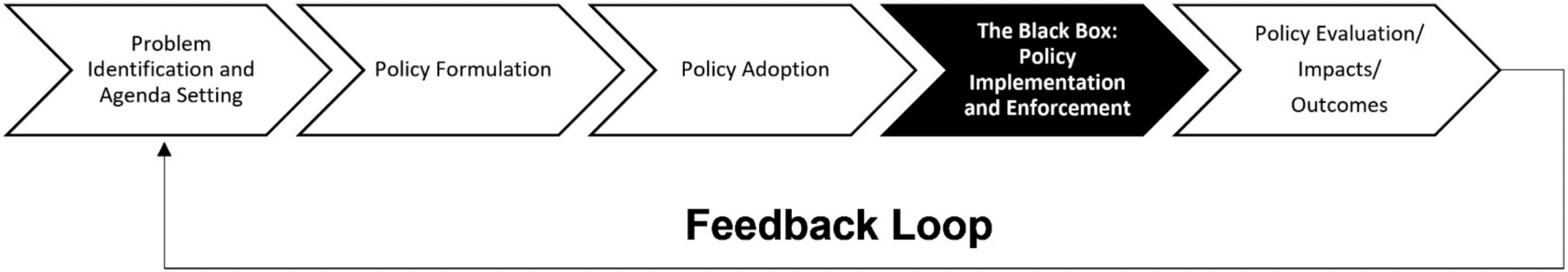
The policy process: a simplified depiction



Chriqui JF, Asada Y, Smith NR, Kroll-Desrosiers A, Lemon SC. Advancing the science of policy implementation: a call to action for the implementation science field. Transl Behav Med. 2023 Nov 5;13(11):820-825.

Built environment PSE operationalization

(P) Policies, plans and other opportunities that support community design changes (examples)	(S) Systems at the local level	(E) Environmental (community design) changes *Community Guide Recommendations
Local policies and plans -Complete Streets, Safe Routes, Vision Zero -Transit-oriented development -Zoning ordinances, design guidelines -Comprehensive/Master plans -Long range transportation plans, Mobility plans	**Inside system** - Focus on changing practices and culture of built environment decision making within the local government and affecting specific projects	**Activity-Friendly Routes (Transportation systems)** -Street pattern design and connectivity -Pedestrian infrastructure -Bicycle infrastructure -Public transit infrastructure and access
State funding sources/programs -State-specific funding programs -State transit, bike-ped plans **Federal funding sources/programs** -Justice40 initiative -Bipartisan Infrastructure Law	**Outside+ system** -Focus on increasing understanding among non-governmental partners and the community-at-large about government decision making -Increasing engagement through participation in existing public input opportunities, and fostering new opportunities	**Everyday Destinations (Land use and environmental design)** -Proximity to destinations -Mixed land use environments -Residential density -Parks and recreational facilities access

Our research goal

- To develop, pilot and (ultimately) test an implementation strategy that supports equitable implementation of built environment changes that promote physical activity and co-benefits while mitigating unintended consequences
  - Focused on “inside” and “outside+” systems

Prevention Research Center at UMass Chan Medical School

WORCESTER A TOWN JUNE 14, 1722 A CITY FEBY. 29, 1848

Coalition for a Healthy Greater Worcester
ELIMINATING HEALTH DISPARITIES
IMPROVING QUALITY OF LIFE
BUILDING COMMUNITY

walk massachusetts
COMMUNITY | MOBILITY | ACCESS

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Worcester, MA

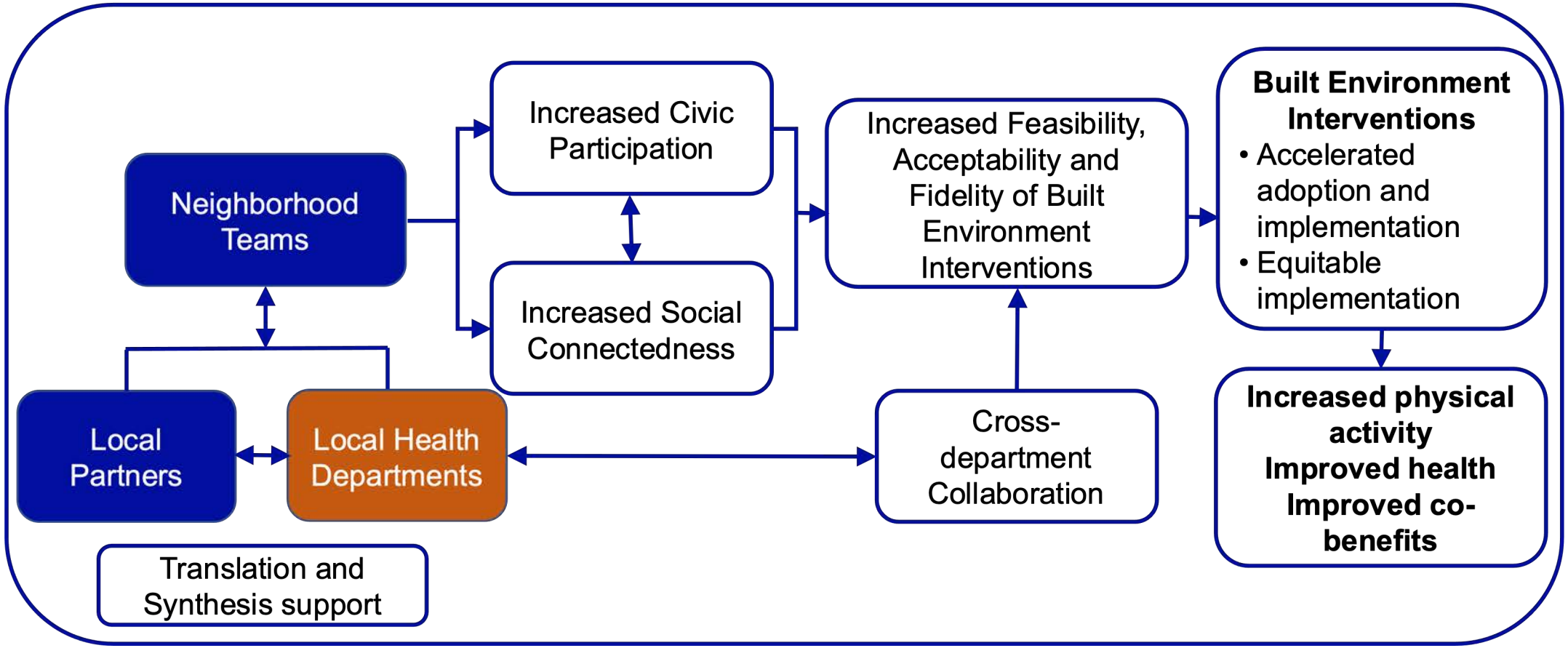
- 2nd largest city in New England
- Top 13% most diverse U.S. cities
- “Gateway” city-anchors the regional economy and faces social and economic challenges
- 14% population growth from 2010-2020
- 68% increase in mean housing cost between 2011 and 2022
- Outdated, auto-centric infrastructure
- Engaged, collaborative multi-sector infrastructure focused on public health, health equity and addressing the social determinants of health
- Built environment opportunities
  - New Master Plan; Complete Streets policy and plan; Vision Zero initiative;
  - Mobility Action Plan (Transportation Advisory Group; Department of Transportation and Mobility);
  - Mass DOT Complete Streets funding program; Safe Streets for All planning group (Bipartisan Infrastructure Law)

Neighborhood Connect Implementation Strategy

Training and Technical Assistance Model

Inside System -Worcester Division of Public health (Local Health Department (LHD))	Outside+ System -Neighborhood Residents supported by the LHD, Coalition for a Healthy Greater Worcester and Walk Massachusetts
Connect with the Community: by co-leading the Outside+ training and technical assistance strategy; learning what issues are most important to residents in given neighborhoods	**Connect as a Community:** by learning civic participation principles and fostering buy-in on the importance of the built environment on physical activity and co-benefits (e.g., safety)
Connect across Local Government: by identifying opportunities for involvement; understanding which co-benefits are most important and communicating accordingly and representing public health and community interests	**Connect with the Environment:** by conducting walk/bike/mobility audits to document and understand neighborhood built environment issues and opportunities
	Connect with the Policy Process: by learning about and engaging with built environment decision-making processes in their jurisdiction

Neighborhood Connect Implementation Strategy Theory of Change



Methodological considerations

Implementation science element	Neighborhood Connect approach
1. Engage **partners or other interest holders**	15 person CAB (Residents; multi-sector interest holders); 3 delivery partners (LHD, coalition, advocacy group)
2. Guided by relevant **framework, model or theory**	Project modified version of the Interactive Systems Framework
3. Tests an **implementation strategy**	Training and technical assistance model -Inside system -Outside+ system
4. Takes **local context** into consideration; Allows adaptation; Strives for scalability	Built into implementation strategy development; Guided by a CAB, partners and national informants/advisors
5. Uses an appropriate **study design**	Neighborhood-level stepped wedge design
6. Assess **implementation outcomes**	Development of implementation new measures (acceptability, feasibility, appropriateness); Create new measures for civic participation and LHD cross-sector involvement; Track built environment implementation fidelity

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Building from what we've learned at this workshop….

- As we pursue the next generation of obesity-related PSE intervention research, there needs to be consideration of:

- Further defining and operationalizing systems, including multi-sector interest holders who are the implementers
- Prioritizing implementation, including the development of scalable implementation strategies
  - Even as we are building new effectiveness research
- What is and isn't applicable from the current field of implementation science
- Methodological advances needed to integrate obesity-related PSE research and implementation science
  - High-level thought and guidance
  - Specific methodological advancements (especially in measurement and study design)

Thank you!

Scalable and Sustainable Approaches to Equitable Obesity Prevention

Nico Pronk, PhD

HealthPartners Institute

June 2024

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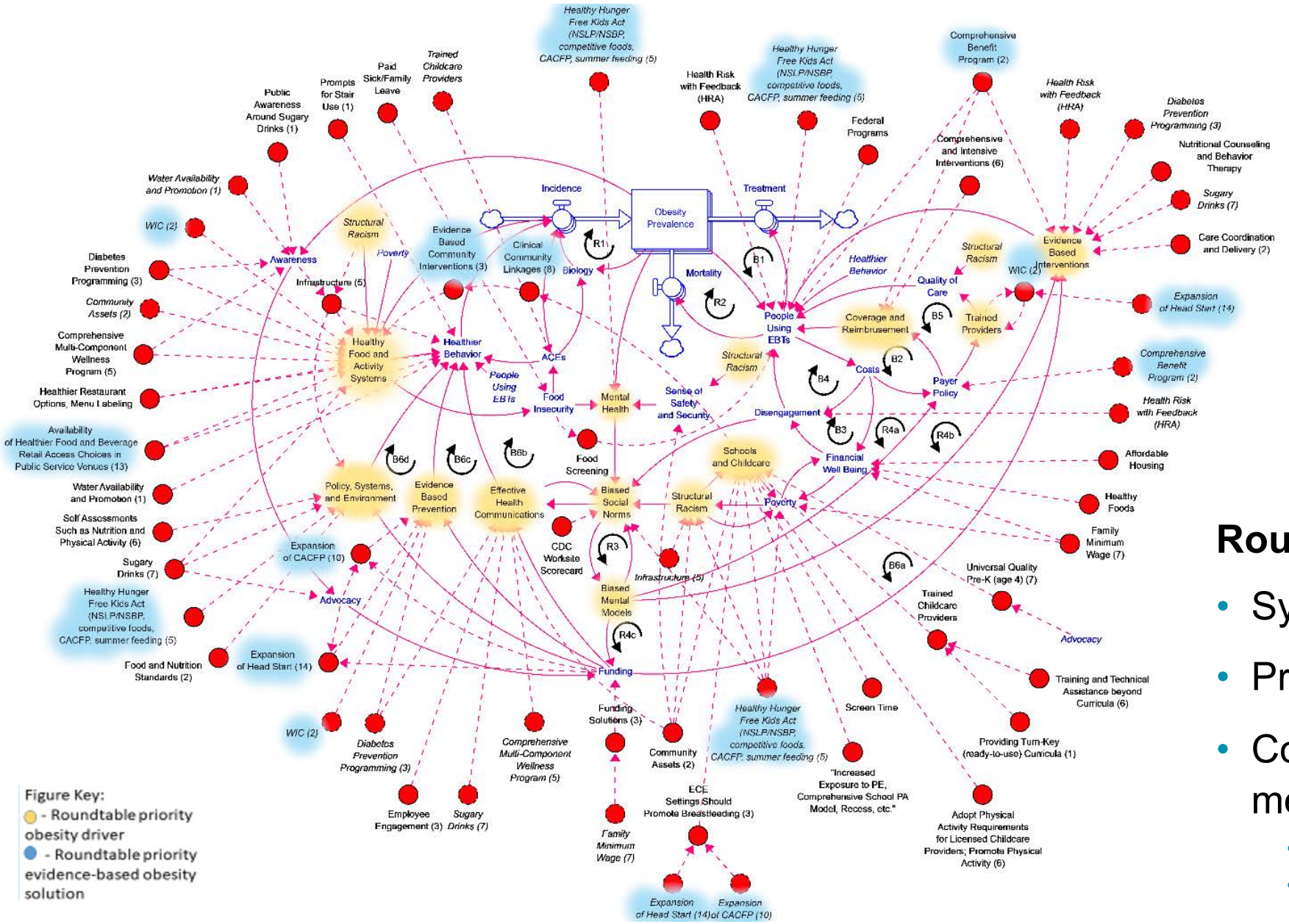
Scalable and Sustainable Approaches to Equitable Obesity Prevention

Topics for Discussion

1. Focus upstream
   - Culture, politics, policy, and environmental circumstances
2. Comprehensive options for prevention and treatment
3. Disseminate and implement using pragmatic frameworks

Scalable and Sustainable Approaches to Equitable Obesity Prevention



Roundtable on Obesity Solutions

- Systems map (causal and solution
- Prevention and treatment included
- Co-created and prioritized by members
  - Structural racism
  - Biased social norms (cultural, lived experience, etc.)
  - Health communications

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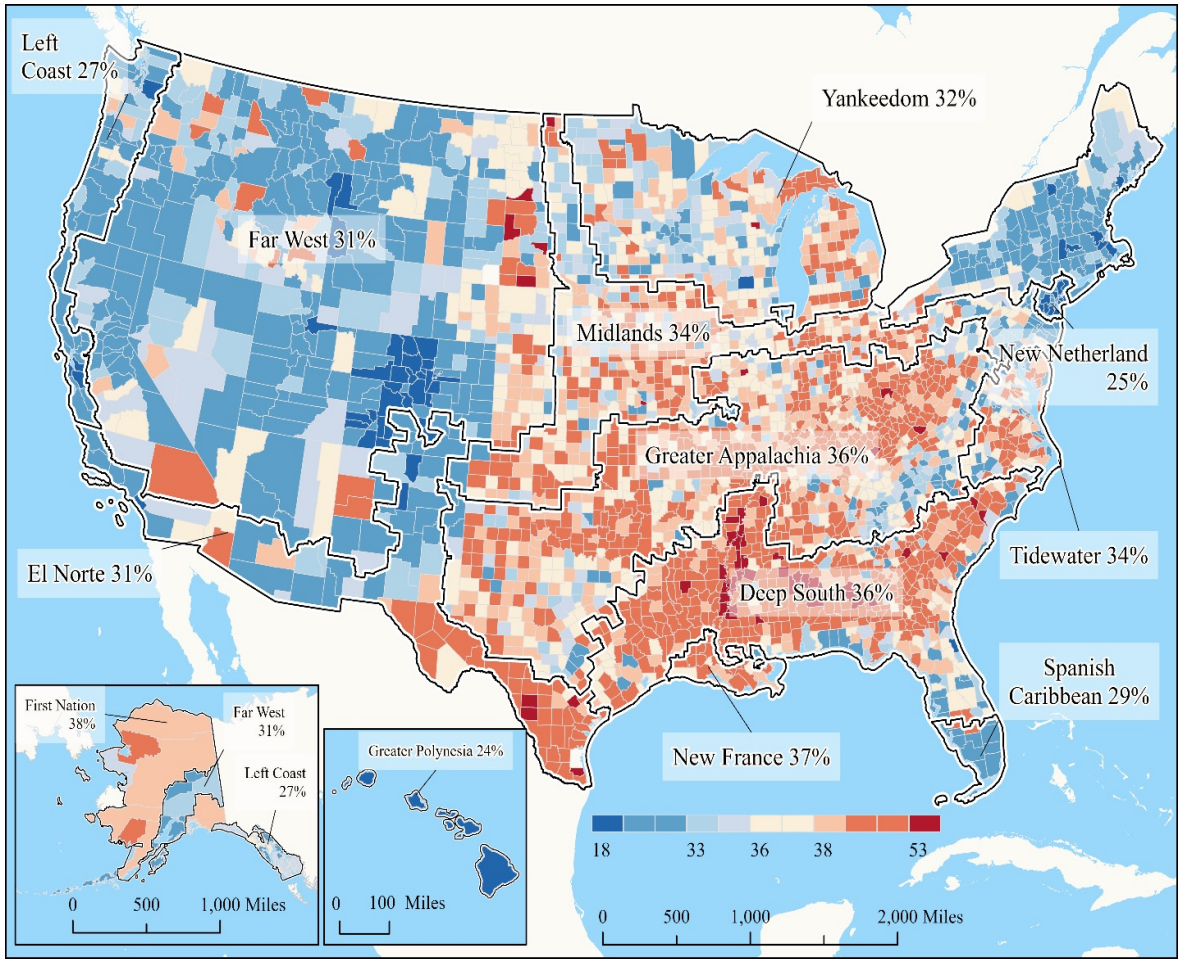
Pronk NP, et al. Curr Probl Cardiol. 2022.

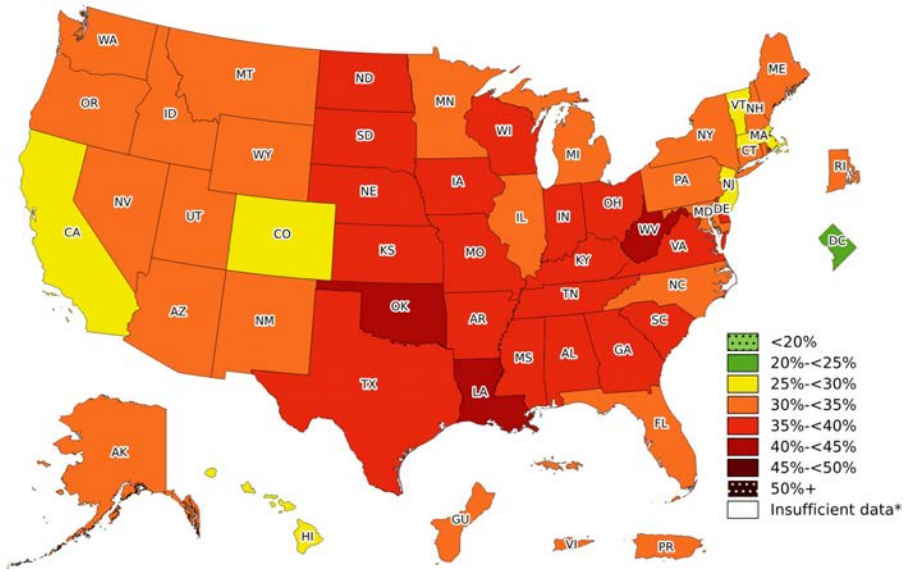
Focus upstream

- Heterogeneity of obesity according to regional cultures
- Culture drives politics
  - Civic engagement
- Policy development
- Social, physical, and economic environments

Regional Cultures and Obesity in the U.S.



John Liberty/Motivf for Nationhood Lab
Arena R, Laddu D, Pronk NP, Woodard C. Prog Cardiovasc Dis. 2023



Prevalence of Obesity Based on Self-Reported Weight and Height Among U.S. Adults by State and Territory, BRFSS, 2022

- **Obesity is not homogenously distributed** across the country—large variation exists
- **Variation by regional culture is significant**

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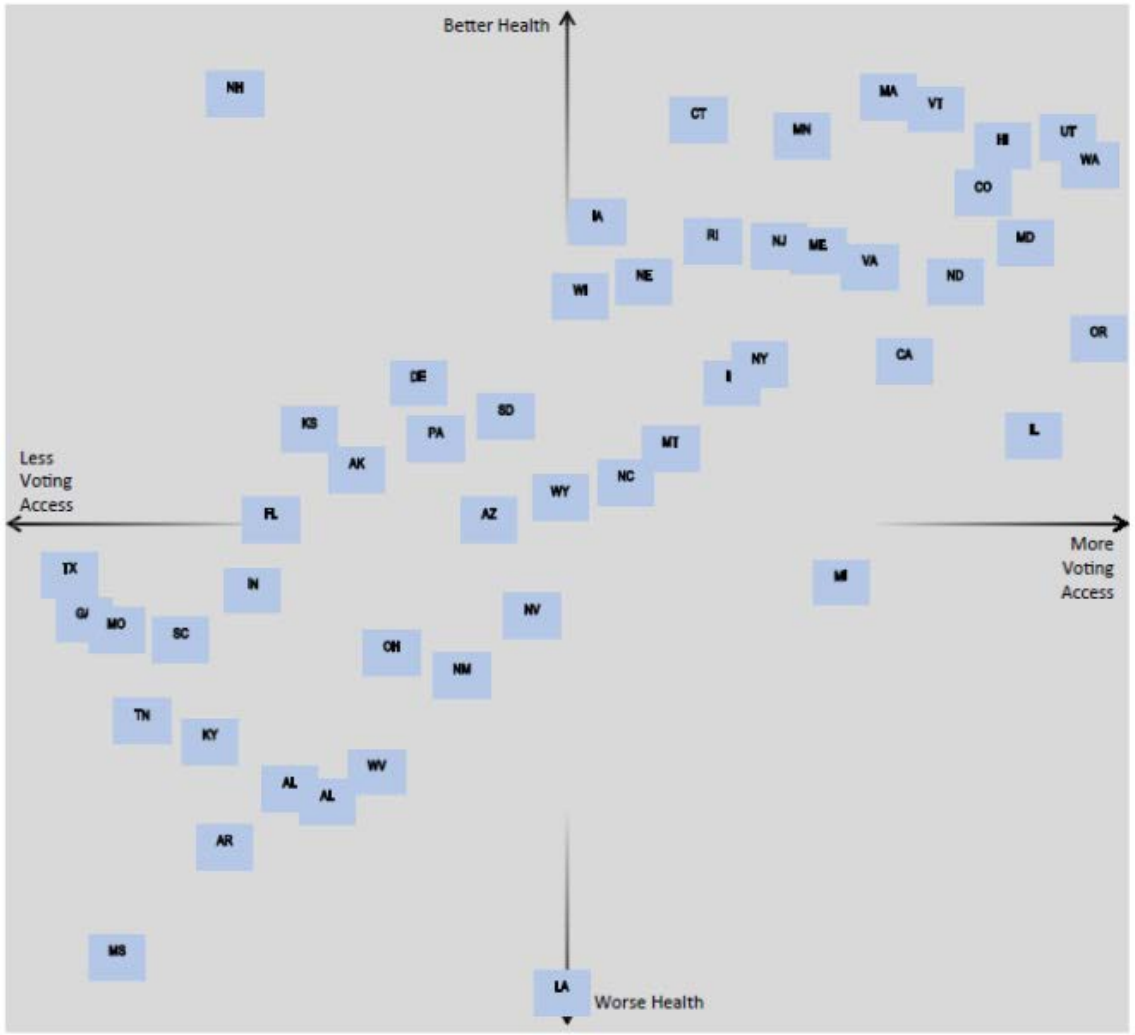
Cultural drivers of politics

Civic engagement

- Comparison of 12 public health indicators and voter turnout to the restrictiveness of voting access in each state
- **States with more inclusive voting policies and greater levels of civic participation are healthier**.
- States with exclusionary voting laws, more barriers to voting, and lower rates of voter participation have worse public health outcomes



Pronk, Arena, Ayers. The Lancet Reg Health Am. 2023.20: 100471

Policy development

- Key factors in obesity policy
  - Health outcomes
  - Economic impact/sustainability
  - Scalability
- Public policy needs to align with implementation efforts and practice realities

- Health outcomes
  - Evidence of effectiveness of interventions
  - Effect **Size**
- **Scalability**
  - Can target audiences be reached?
- Economic impact /**sustainability**
  - Cost per unit of intervention
  - **Scope** of services (to be costed)

Social, physical, and economic environments

- Policy impacts the social, physical, and economic environment
  - Prevention focus
    - Incidence reduction critical for long-term impact
  - Treatment of obesity
  - Equitable access
  - Addressing stigma and bias
    - Across communities
    - In the care delivery setting

Comprehensive options for prevention and treatment

- Community programs
  - E.g., school, workplace, parks
- Digital health programs
- Commercial weight loss options
- Lifestyle coaching access
- Nutrition counseling access
- Multi-sectoral collaborations
  - E.g., workplace-to-clinic or clinic-to-community programs
- People-first language
- Obesity medicine clinic access
- Anti-obesity medications options
- Bariatric surgery options

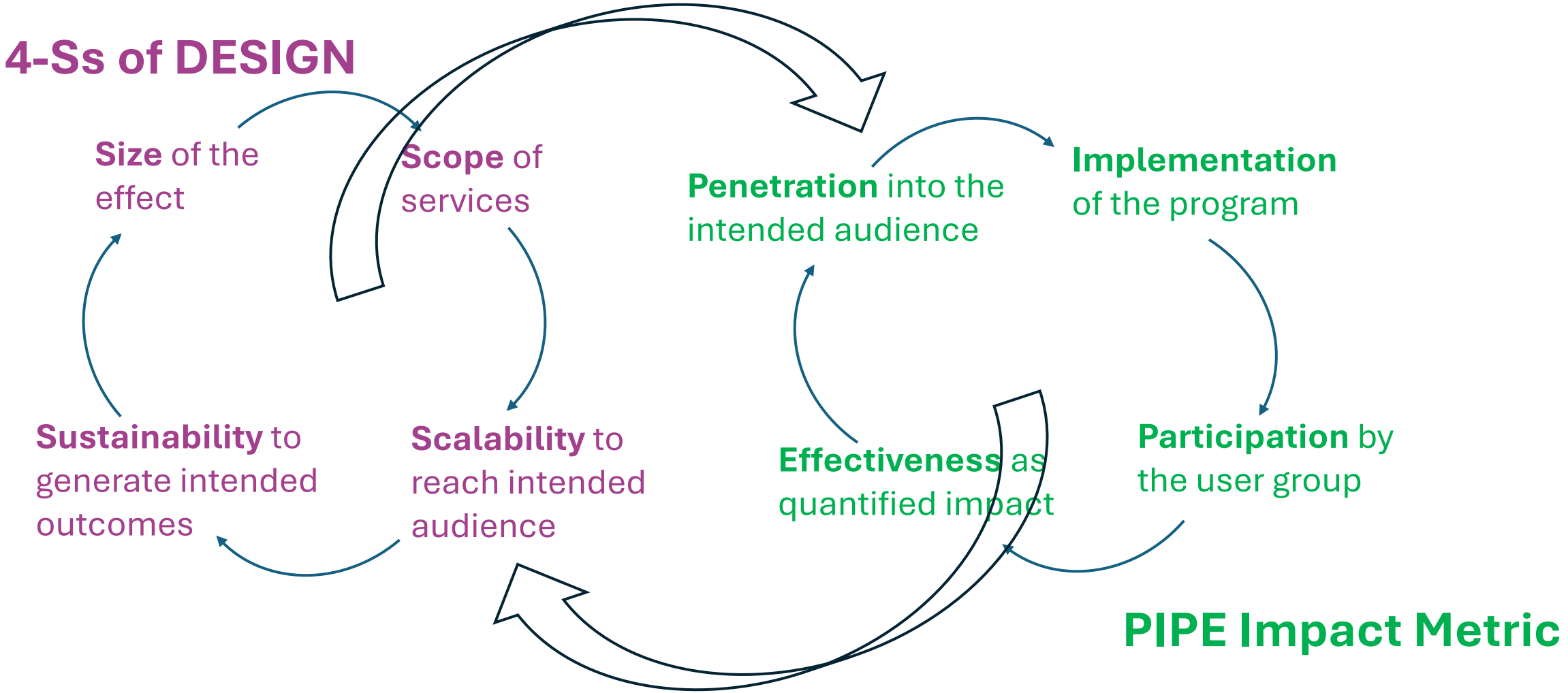
Pronk NP. ACSM's Health & Fitness J. 2024 In press.

Closing gaps in care

- Comprehensive care teams that reach beyond the clinic walls
- Education of the health workforce

- Clinician knowledge about comprehensive obesity solutions
- Clinical decision support
- Addressing stigma and bias
- Equitable insurance coverage
- Safety and adverse events
- Referrals to community resources
- Cost-effectiveness
- Social support resources

Pragmatic dissemination and implementation framework



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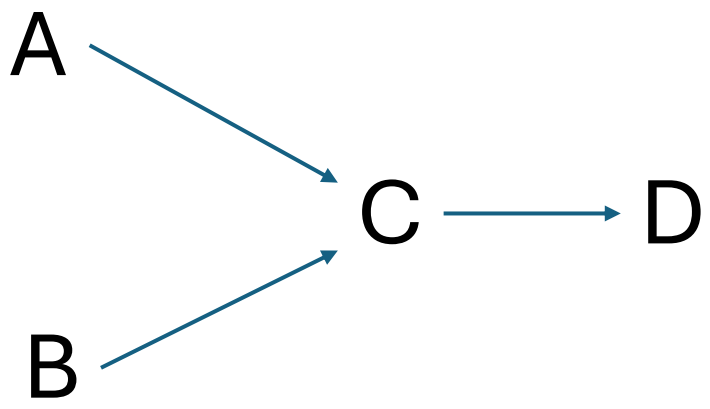
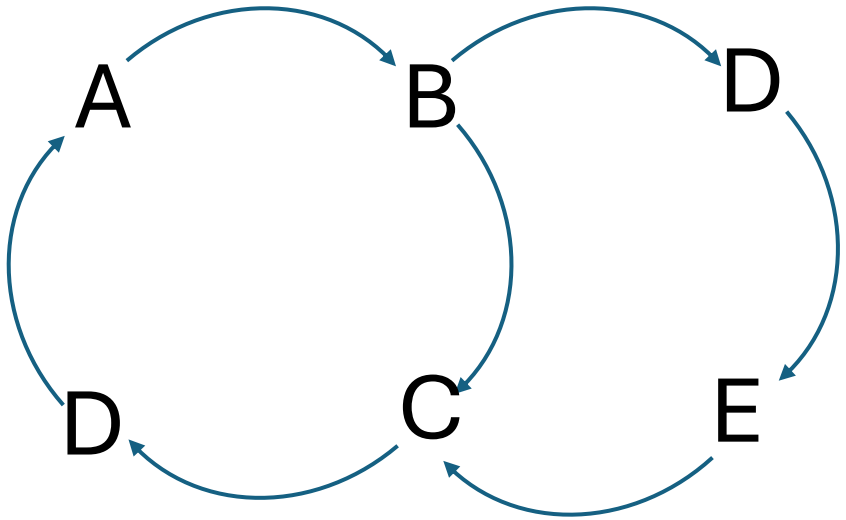
Conclusion





“Reality is made up of circles, but we see straight lines”

-Peter Senge

Thank you!

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