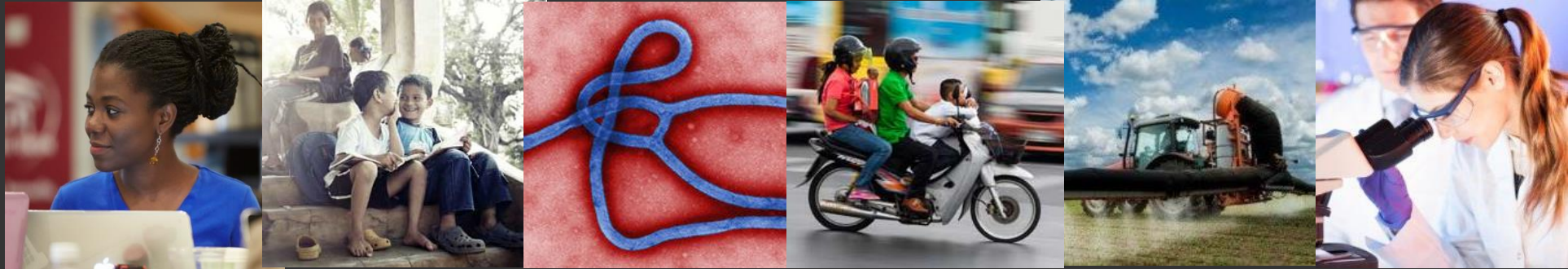




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## The Role of Policy in Implementation Science and Health Equity

Karen M. Emmons, Ph.D.

# Why Policy?

> [Health Educ Behav.](#) 2000 Aug;27(4):483-501. doi: 10.1177/109019810002700410.

## The relationship between organizational characteristics and the adoption of workplace smoking policies

K M Emmons <sup>1</sup>, B Thompson, D McLerran, G Sorensen, L Linnan, K Basen-Engquist, L Bier

Comparative Study

> [J Public Health Policy.](#) Spring 1992;13(1):42-51.

## Restrictive workplace smoking policies: impact on nonsmokers' tobacco exposure

B H Marcus, K M Emmons, D B Abrams, R J Marshall, M Kane, T E Novotny, R A Etzel

Comparative Study

> [Prev Med.](#) Nov-Dec 1998;27(6):846-53. doi: 10.1006/pmed.1998.0368.

## Characteristics of patients adhering to a hospital's no-smoking policy

K M Emmons <sup>1</sup>, B R Cargill, J Hecht, M Goldstein, R Milman, D B Abrams

Review

> [Prev Med.](#) 2001 Apr;32(4):321-31. doi: 10.1006/pmed.2000.0822.

## Intervention and policy issues related to children's exposure to environmental tobacco smoke

K M Emmons <sup>1</sup>, M Wong, S K Hammond, W F Velicer, J L Fava, A D Monroe, J L Evans

Randomized Controlled Trial

> [J Sch Nurs.](#) 2008 Aug;24(4):215-21.

doi: 10.1177/1059840508319627.

## The SunWise Policy intervention for school-based sun protection: a pilot study

Karen M Emmons <sup>1</sup>, Alan C Geller, Vish Viswanath, Linda Rutsch, Jodie Zwirn, Sue Gorham, Elaine Puleo

Editorial

> [J Natl Cancer Inst.](#) 1999 Aug 4;91(15):1269-70. doi: 10.1093/jnci/91.15.1269.

## Preventing excess sun exposure: it is time for a national policy

K M Emmons, G A Colditz



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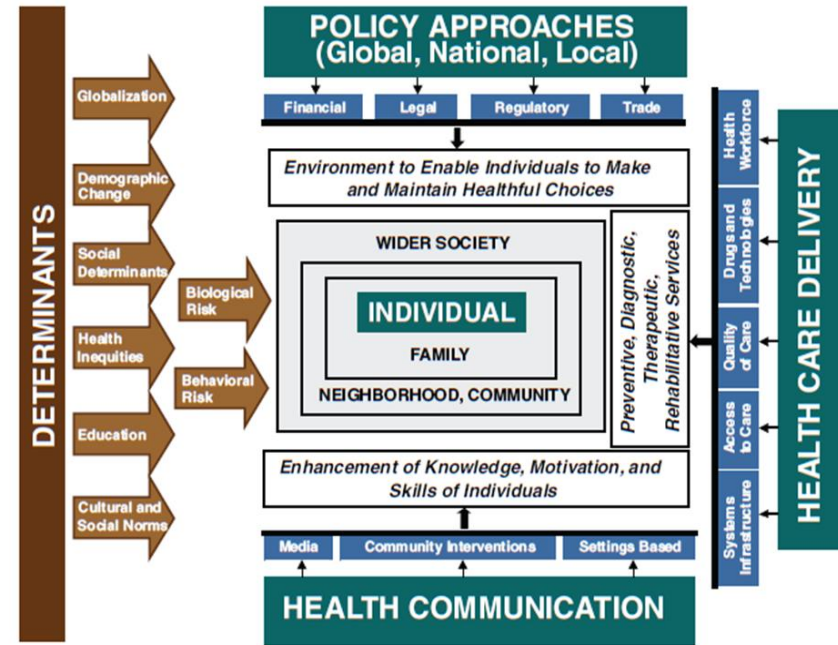
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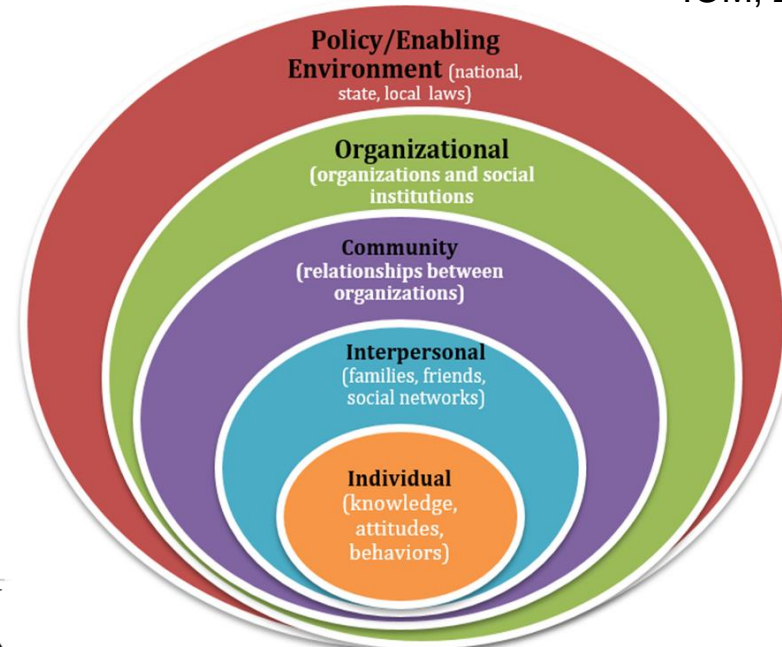
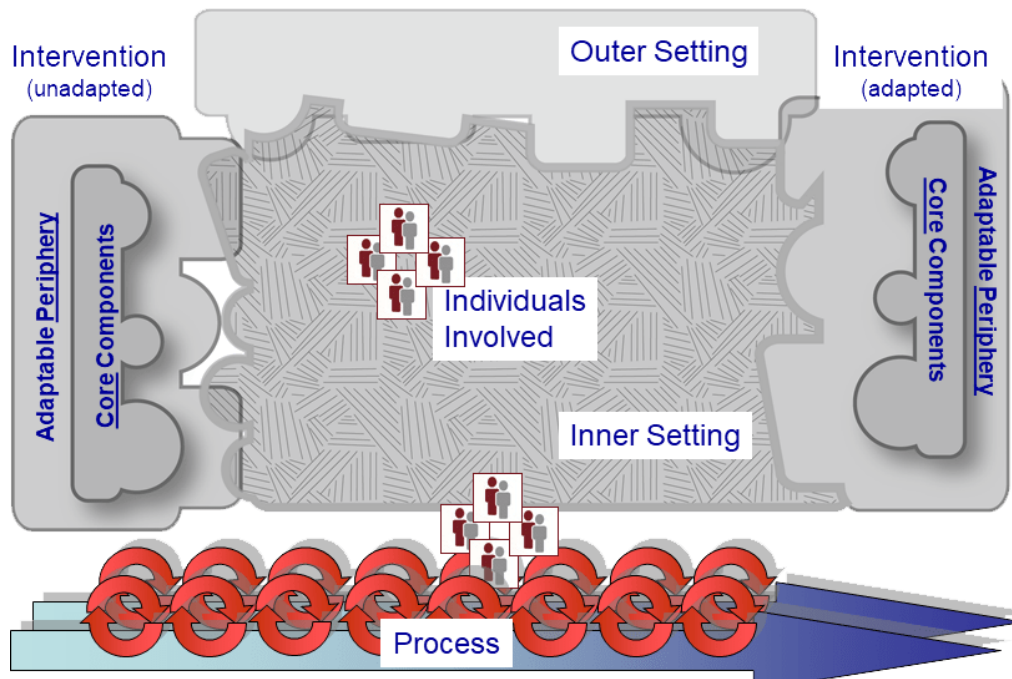
## About Implementation Science

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.

*NCI Website*



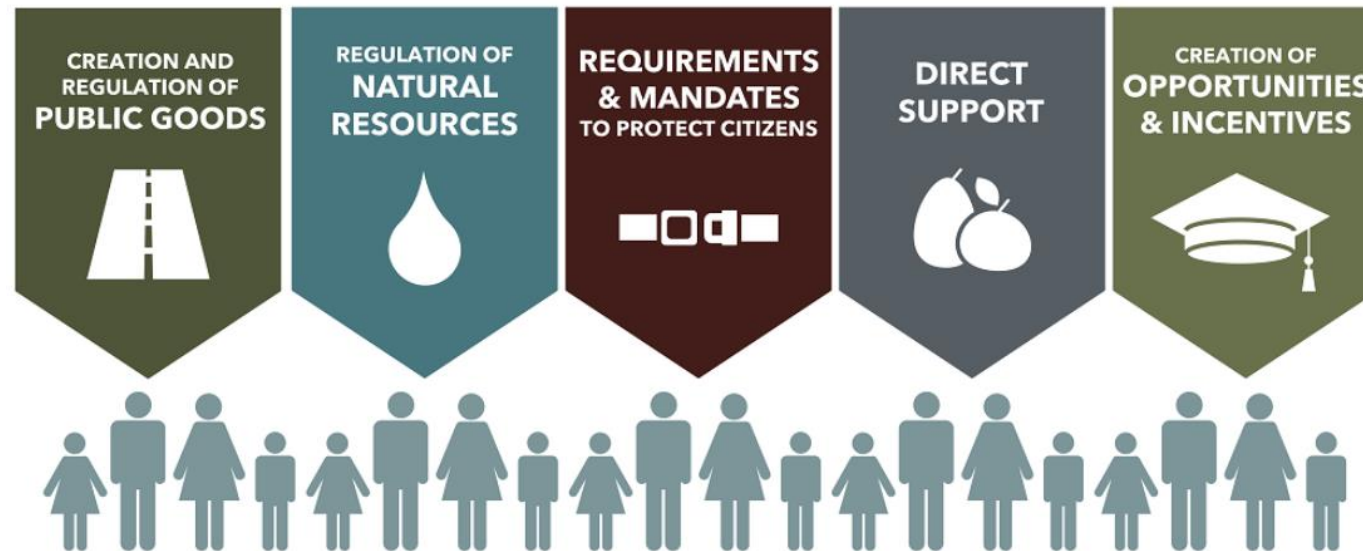
IOM, 2010





**Policies that affect health are developed and implemented every single day, like it or not.**

### 5 WAYS PUBLIC POLICY IMPACTS HEALTH



# Thinking Broadly about the Definition of Policy

Depending on your perspective, a policy may be a....

1. Law
2. Regulation/rule
3. Court decision
4. Procedure
5. Administrative action
6. Program
7. Information Provision/Education
8. Incentive
9. Guidelines
10. Voluntary practice

...of governments and other institutions



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Slide courtesy of Jamie Chriqui



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| Policy Instrument                                | Examples of policies adopted that might be studied using implementation science |
|--|---|
| Law/legislation                                  | Sweetened beverage tax adoption (or failure)                                    |
| Rule/regulation                                  | School meal regulations   |
| Executive order/administrative action            | COVID-19 Shelter-in-Place Orders  |
| Program or Service Delivery                      | Smoking quitline program  |
| Information Provision/Education Campaign/Program | Nutrition/calorie labelling requirements  |
| Incentives                                       | Double value of EBT benefits for purchasing fruits and vegetables               |
| Guidelines                                       | Dietary Guidelines for Americans, Physical Activity Guidelines for Americans    |
| Voluntary Standards/Practices                    | SHAPE America National Standards for Physical Education                         |



# CDC Stages of the Policy Process



- ① Problem identification
- ② Policy analysis
- ③ Strategy and policy development
- ④ Policy enactment
- ⑤ Policy implementation
- ⑥ Evaluation

Source: Centers for Disease Control and Prevention. Overview of CDC's Policy Process. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2012.

- Assumes the policy process is linear



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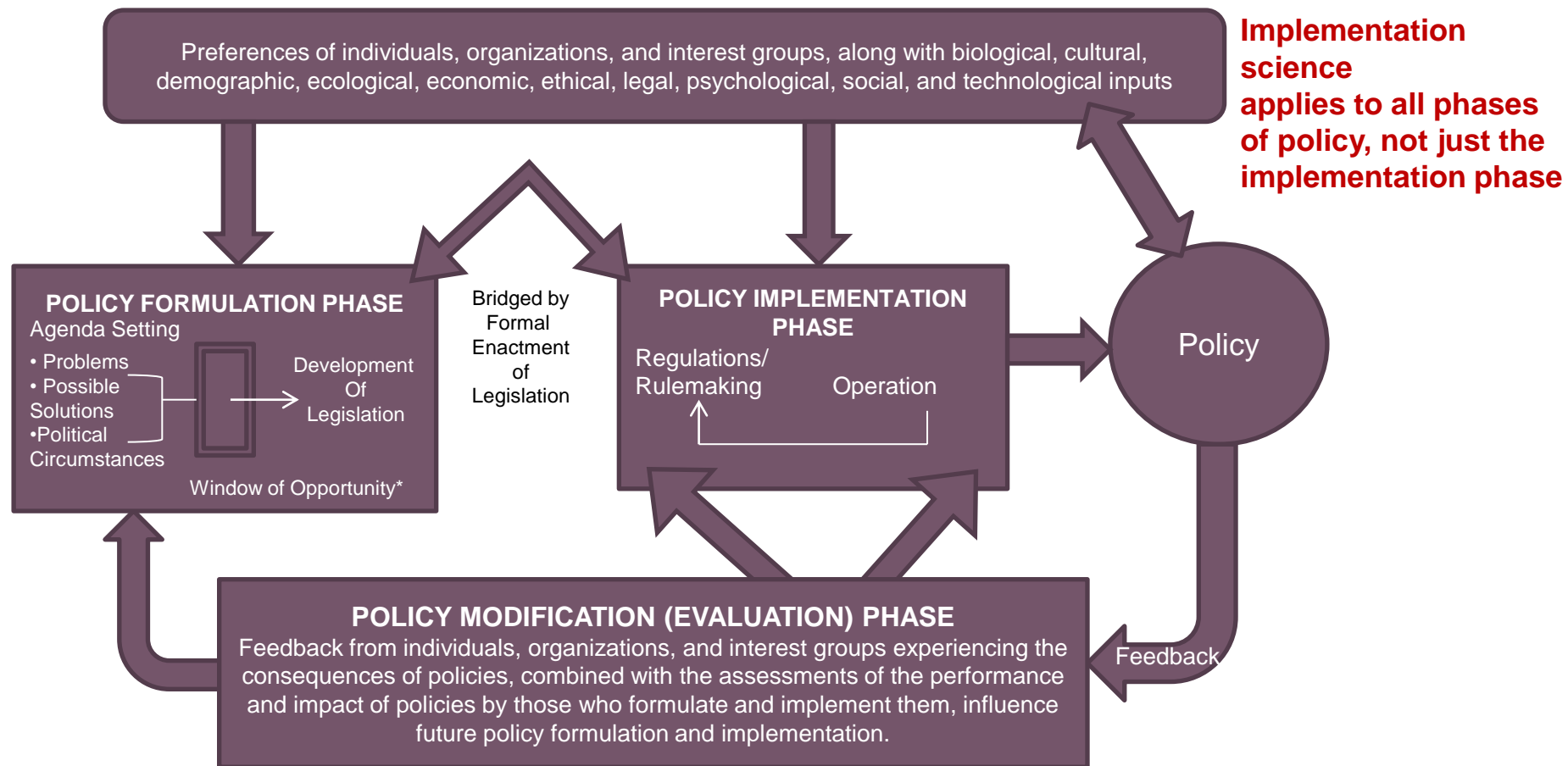


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# An alternative model of the public policymaking process



\* The window of opportunity opens when there is a favorable confluence of problems, possible solutions, and political circumstances.

Source: Longest, B.B., Jr. (2003). The process of public policymaking: A conceptual model. In P.R. Lee & C. L. Estes (Eds.), *The nation's health* (7<sup>th</sup> ed., pp. 129-142). Sudbury, MA: Jones & Bartlett.



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# Implementation Science Is Well-Suited to Policy Translation



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# Defining the Scope

## Systems/Context

Health  
**ACA linked to reduced racial disparities, earlier diagnosis and treatment in cancer care**

CNN Health • Food • Fitness • Wellness • Parenting • Live Longer Live TV U.S. Edition  
**Why Rwanda could be the first country to wipe out cervical cancer**  
By Sophie Cousins, Mosaic  
Updated 5:53 AM ET, Thu May 30, 2019

**Smokefree workplaces effective October 1!**



**Gaston County to prohibit tobacco use on government grounds, parks and indoor public places**



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HEALTH  
**New York Ends Religious Exemptions For Required Vaccines**  
June 13, 2019 - 5:26 PM ET  
BOBBY ALLYN

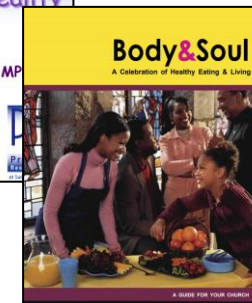


## Interventions

**Walking Trails: From Conception to Reality**



Robyn A. Housemann, PhD, MPH  
Imogene Wiggs, MBA  
Ross C. Brownson, PhD



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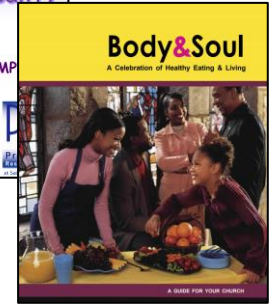
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## Interventions

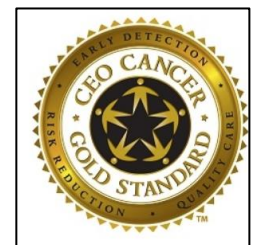
**Walking Trails: From Conception to Reality**



Robyn A. Housemann, PhD, MP  
Imogene Wiggs, MBA  
Ross C. Brownson, PhD



## Strategies



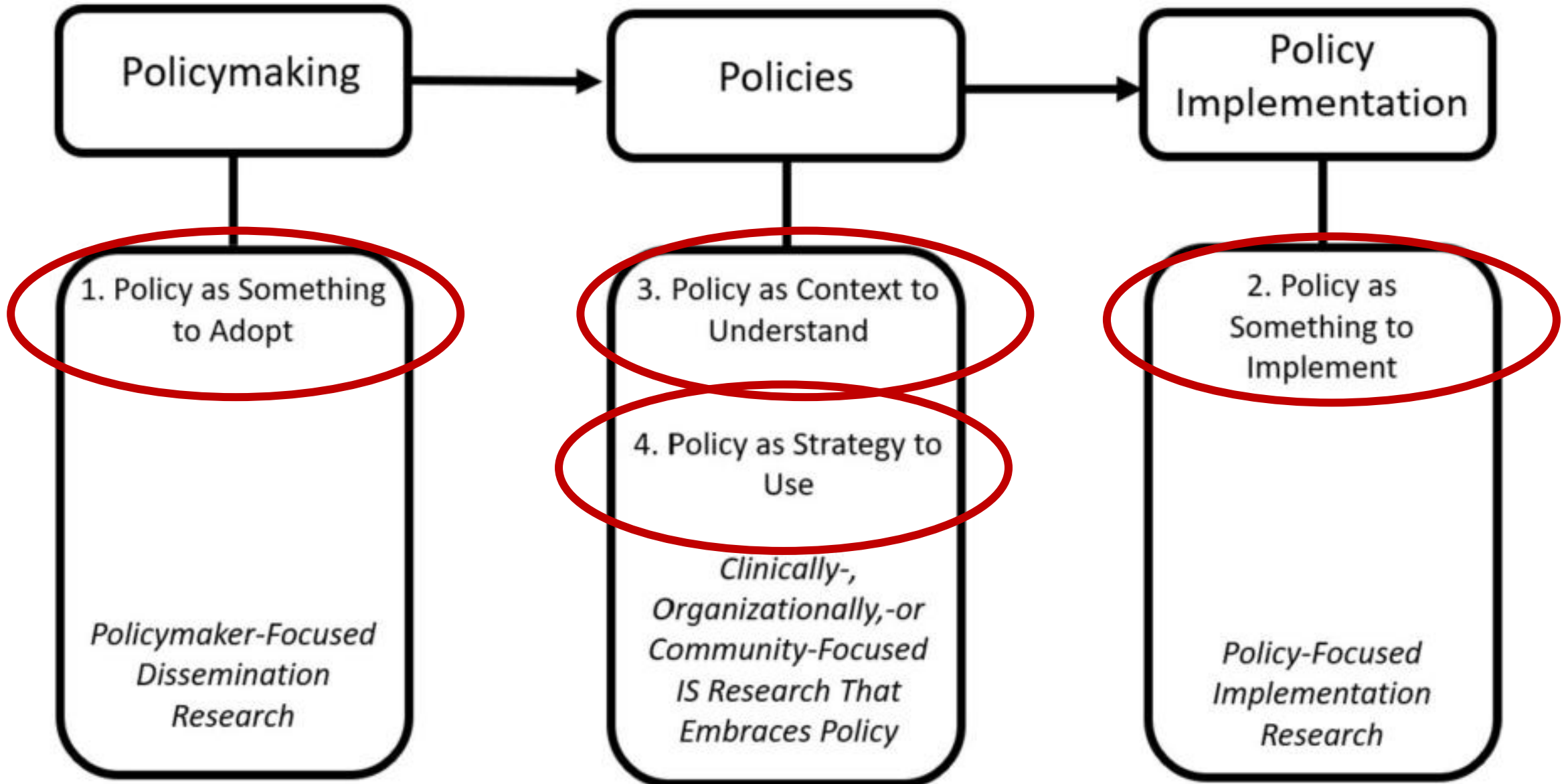
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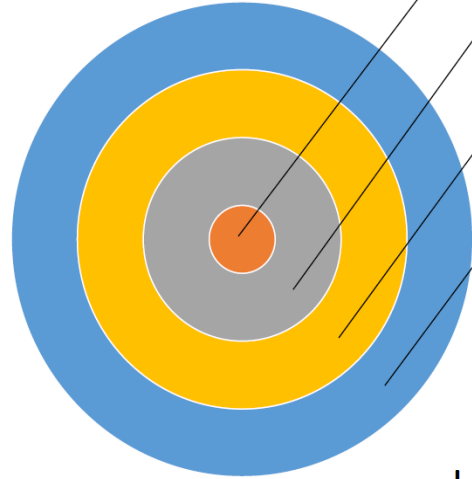
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# Four Ways to Conceptualize Policy in IS (Purtle, et al., 2023)

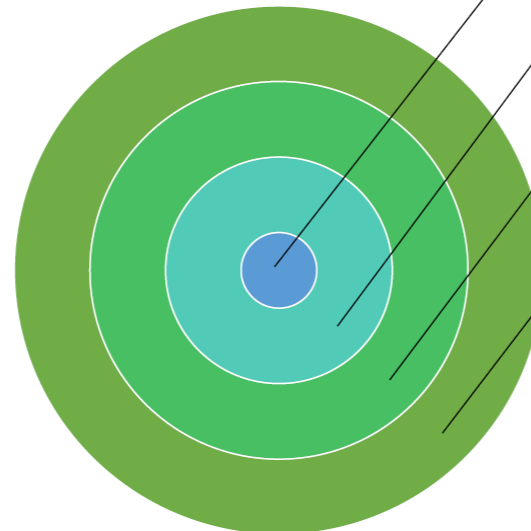


## Levels of Context in “Typical” Clinical D&I Study



- Intervention** ✓
  - Evidence-based intervention
- Adopters** ✓
  - Clinicians
  - Org. leaders
- Inner-setting** ✓
  - Imp. climate
  - Org. culture
- Outer-setting**
  - Policy , policymakers

## Levels of Context in Policy D&I Study

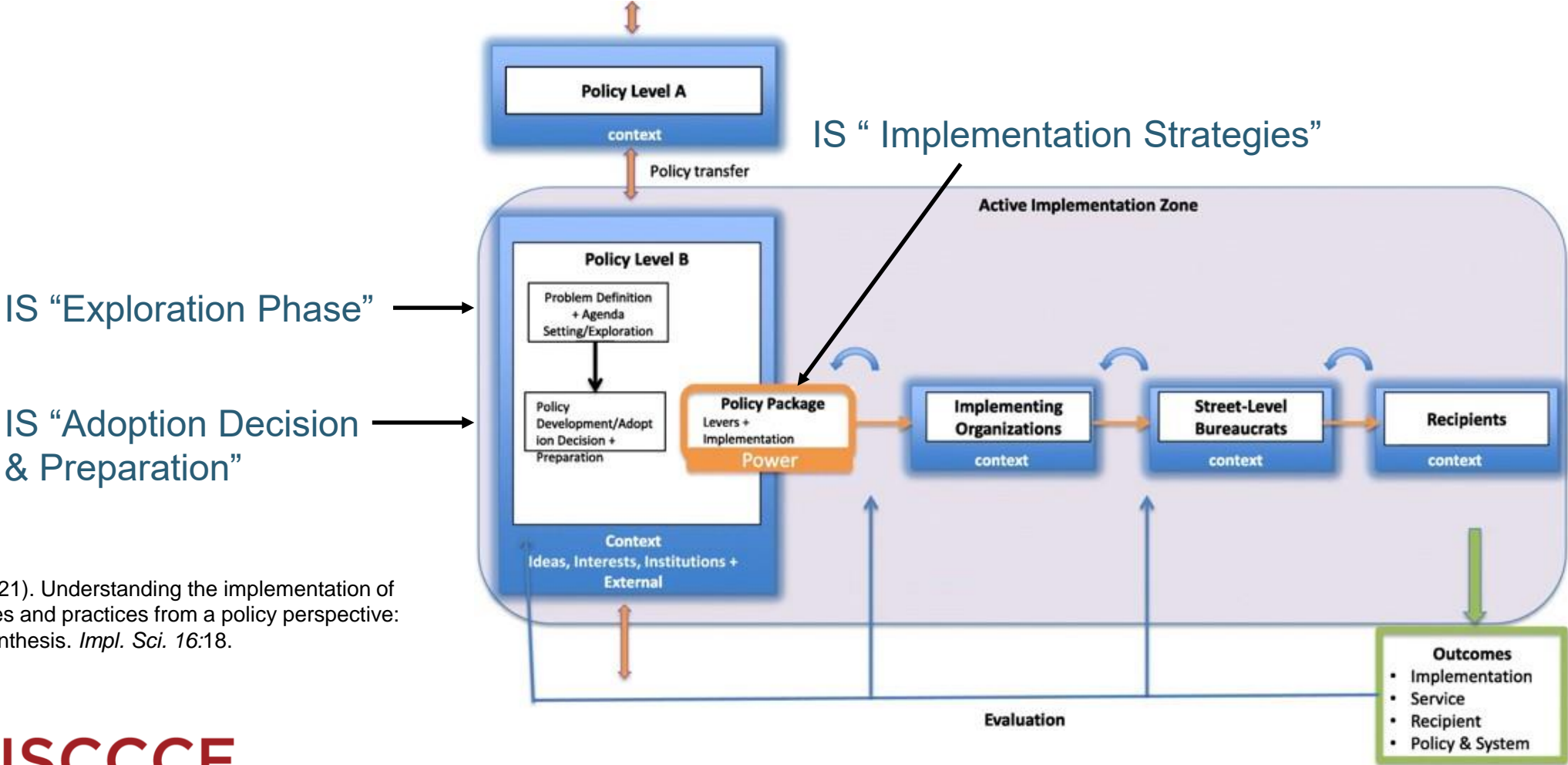


- Intervention**
  - Policy, evidence-supported
- Adopters**
  - Legislators
  - Admin. Policymakers
- Inner-setting**
  - Legislature politics
  - Governor agenda
- Outer-setting**
  - Public opinion
  - Media coverage

Slide Courtesy of Jonathan Purtle



# Part 1: Process model of implementation from a policy perspective depicting the policy process at one level



Source: Bullock et al. (2021). Understanding the implementation of evidence-informed policies and practices from a policy perspective: A critical interpretative synthesis. *Impl. Sci.* 16:18.



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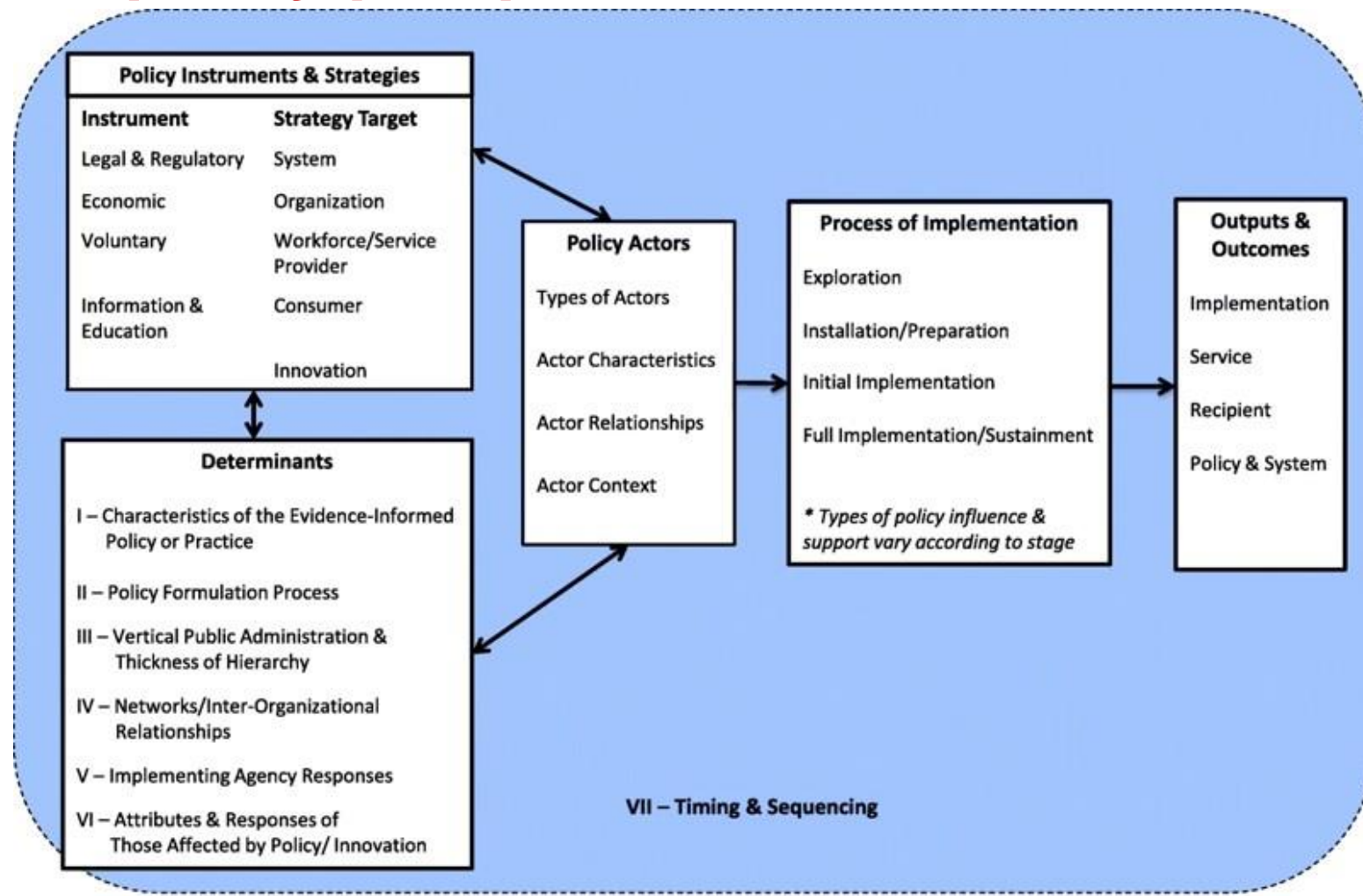


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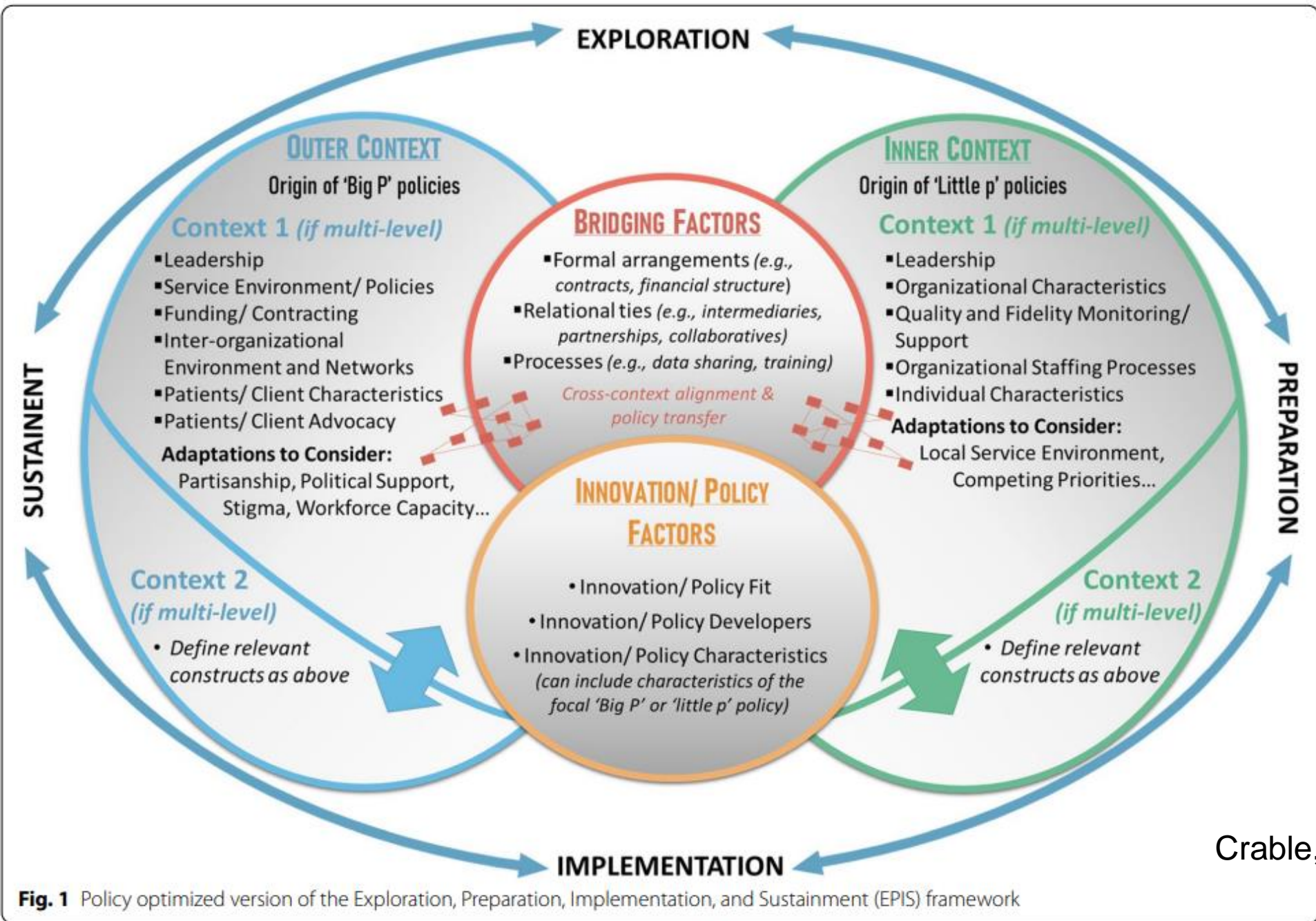


# Part 2: Determinants framework of implementation from a policy perspective



Source: Bullock et al. (2021). Understanding the implementation of evidence-informed policies and practices from a policy perspective: A critical interpretative synthesis. *Impl. Sci.* 16:18.





**Fig. 1** Policy optimized version of the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework

Crable, et al., 2022

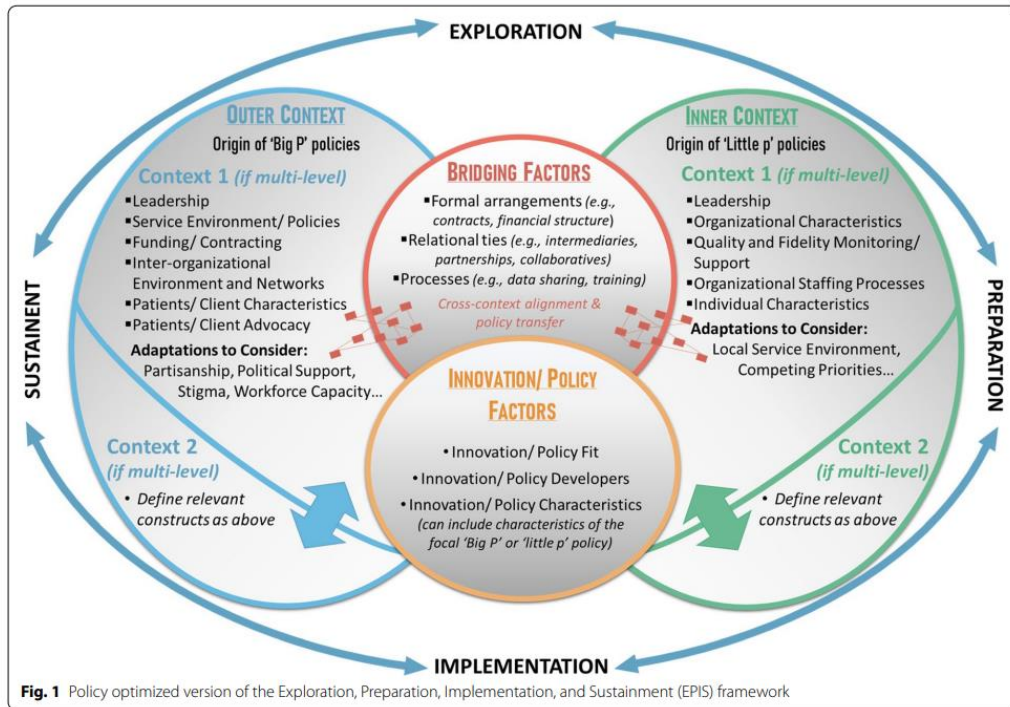
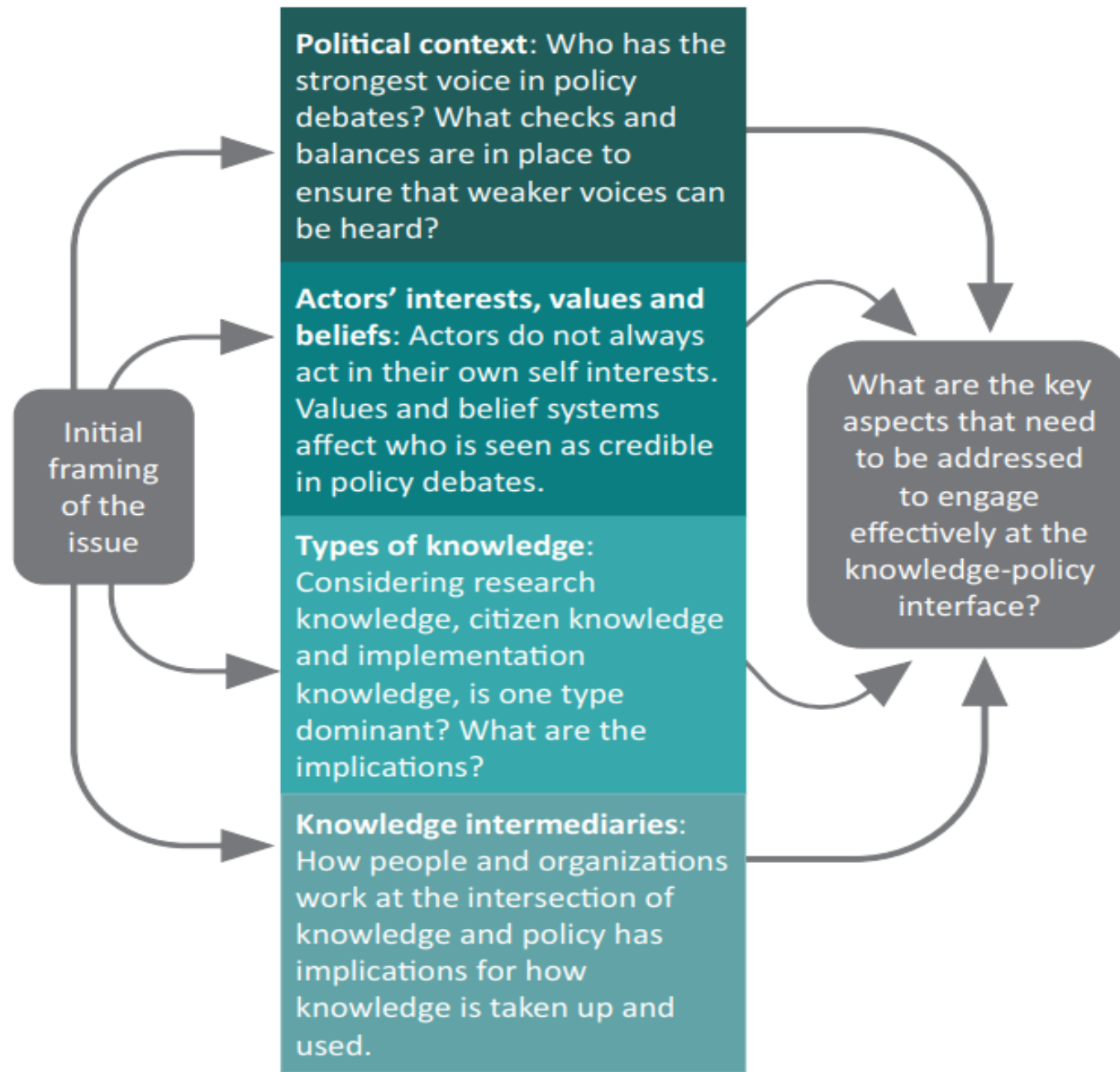


Fig. 1 Policy optimized version of the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework

## Recommendations to advance policy D & I research:

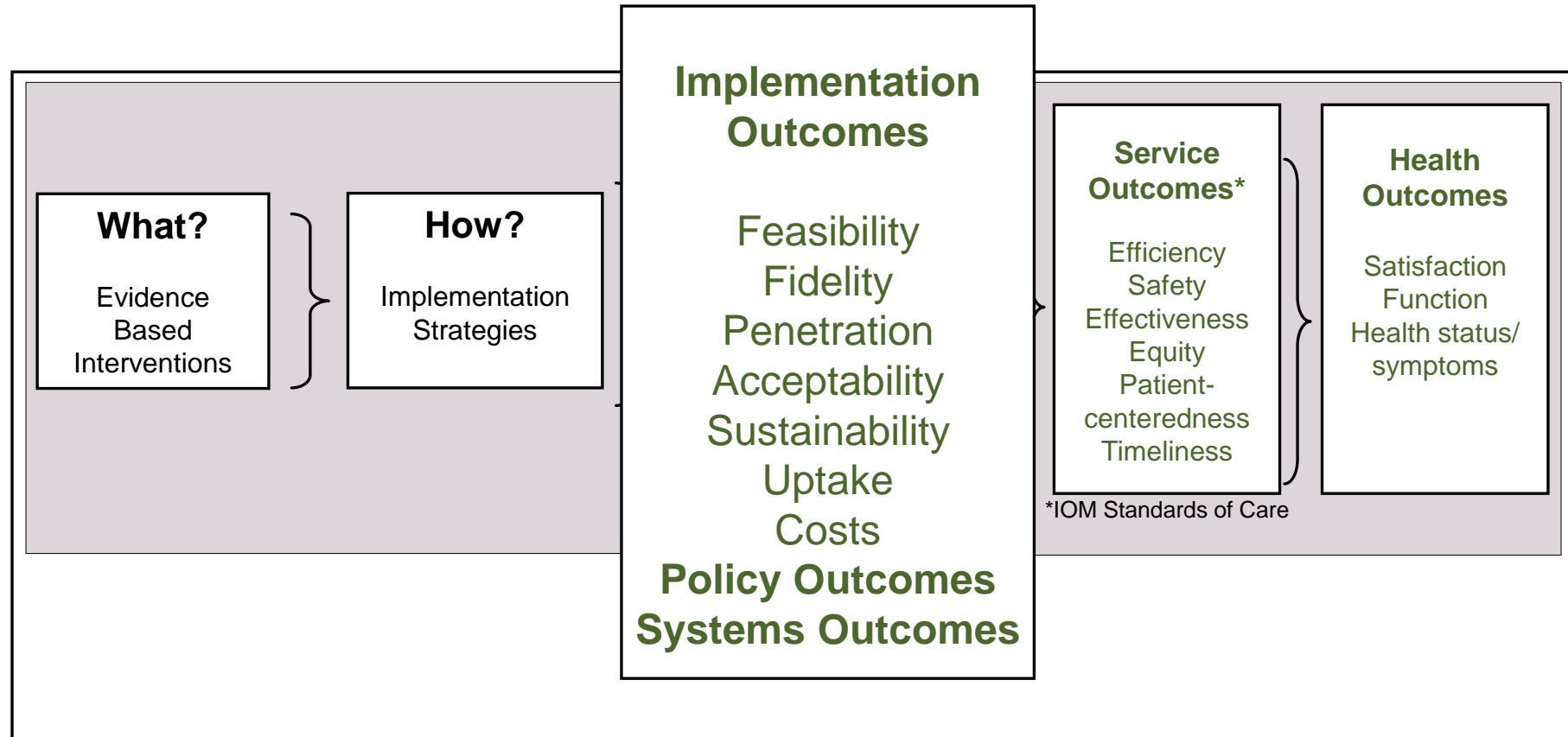
- Specify dimensions of a policy's function
- Specify dimensions of a policy's form.
- Identify and define the nonlinear phases of policy D&I
- Describe the temporal roles that stakeholders play over time
- Consider policy-relevant outer and inner context adaptations
- Identify and describe bridging factors necessary for policy D&I success.

# THE KNOWLEDGE, POLICY, AND POWER FRAMEWORK



Shaxson L, Jones H, Jones N, Walker D. Knowledge, policy and power in international development: A practical framework for improving policy. 2013, Overseas Development Institute.

# What are Appropriate Policy Implementation Outcomes and Measures?



Proctor, E.K., et.al., 2009



# Implementation science has a lot to offer

## Randomized Controlled Designs: True Experimental Options

*Traditional randomized controlled trial with individuals as the unit of R*

|                |   |   |   |
|----------------|---|---|---|
| R <sub>I</sub> | O | X | O |
| R <sub>I</sub> | O |   | O |

*Randomized encouragement trial*

|                |   |   |   |
|----------------|---|---|---|
| R <sub>E</sub> | O | X | O |
| R <sub>E</sub> | O |   | O |

*Staggered enrollment trial*

|                     |   |   |   |  |                     |   |   |   |   |
|---------------------|---|---|---|--|---------------------|---|---|---|---|
| R <sub>I or G</sub> | O | X | O |  |                     |   |   |   |   |
| R <sub>I or G</sub> | O |   | O |  | X                   |   | O |   |   |
| OR                  |   |   |   |  |                     |   |   |   |   |
| R <sub>I or G</sub> | O | X | O |  |                     |   |   |   |   |
| R <sub>I or G</sub> | O |   | O |  | R <sub>I or G</sub> | O | X | O |   |
|                     |   |   |   |  | R <sub>I or G</sub> | O |   | O | X |

*Group randomized trial*

|                |   |   |   |
|----------------|---|---|---|
| R <sub>G</sub> | O | X | O |
| R <sub>G</sub> | O |   | O |

## Study Designs for Effectiveness and Translation Research Identifying Trade-offs

Shawna L. Mercer, MSc, PhD, Barbara J. DeVinney, PhD, Lawrence J. Fine, MD, DrPH, Lawrence W. Green, DrPH, Denise Dougherty, PhD  
(Am J Prev Med 2007;33(2):139-154) © 2007 American Journal of Preventive Medicine

## Nonrandomized Designs With or Without Control/Comparison Groups: Quasi-Expe

*Pre-post design*

Intervention group only

|                |   |                |
|----------------|---|----------------|
| O <sub>1</sub> | X | O <sub>2</sub> |
|----------------|---|----------------|

With a nonrandomized control/comparison group

|    |                |   |                |
|----|----------------|---|----------------|
| NR | O <sub>1</sub> | X | O <sub>2</sub> |
| NR | O <sub>1</sub> |   | O <sub>2</sub> |

*Interrupted time series design*

Intervention group only

|                |                |                |                |                |   |                |                |                |                |                 |
|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|-----------------|
| O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | O <sub>4</sub> | O <sub>5</sub> | X | O <sub>6</sub> | O <sub>7</sub> | O <sub>8</sub> | O <sub>9</sub> | O <sub>10</sub> |
|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|-----------------|

With a nonrandomized control/comparison group

|                |                |                |                |                |   |                |                |                |                |                 |
|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|-----------------|
| O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | O <sub>4</sub> | O <sub>5</sub> | X | O <sub>6</sub> | O <sub>7</sub> | O <sub>8</sub> | O <sub>9</sub> | O <sub>10</sub> |
|----------------|----------------|----------------|----------------|----------------|---|----------------|----------------|----------------|----------------|-----------------|

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|                |                |                |                |                |  |                |                |                |                |                 |
|----------------|----------------|----------------|----------------|----------------|--|----------------|----------------|----------------|----------------|-----------------|
| O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | O <sub>4</sub> | O <sub>5</sub> |  | O <sub>6</sub> | O <sub>7</sub> | O <sub>8</sub> | O <sub>9</sub> | O <sub>10</sub> |
|----------------|----------------|----------------|----------------|----------------|--|----------------|----------------|----------------|----------------|-----------------|

*Multiple baseline design*

|                |                |                |                |                |                |                |                |                |                |                 |                  |                 |                 |      |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|------------------|-----------------|-----------------|------|
| O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | O <sub>4</sub> | O <sub>5</sub> | X <sub>T</sub> | O <sub>6</sub> | O <sub>7</sub> | O <sub>8</sub> | O <sub>9</sub> | O <sub>10</sub> | X <sub>T-1</sub> | O <sub>11</sub> | O <sub>12</sub> | etc. |
| OR             |                |                |                |                |                |                |                |                |                |                 |                  |                 |                 |      |
| O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | O <sub>4</sub> | O <sub>5</sub> | X <sub>C</sub> | O <sub>6</sub> | O <sub>7</sub> | O <sub>8</sub> | O <sub>9</sub> | O <sub>10</sub> | X <sub>C+1</sub> | O <sub>11</sub> | O <sub>1</sub>  |      |

*Regression discontinuity design*

|                |   |   |                |
|----------------|---|---|----------------|
| O <sub>A</sub> | C | X | O <sub>2</sub> |
| O <sub>A</sub> | C |   | O <sub>2</sub> |

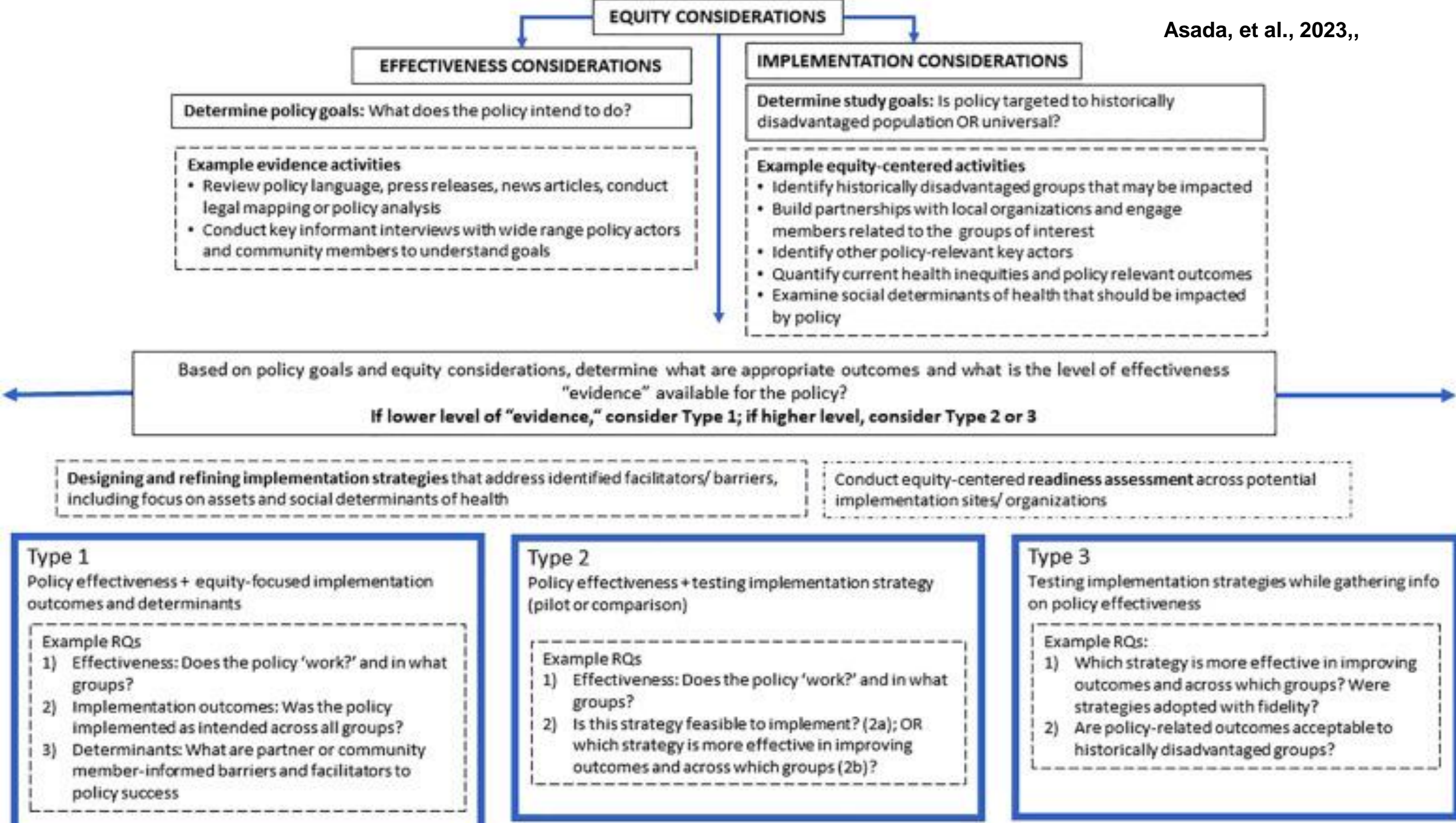
## Effectiveness-Implementation Hybrid Designs



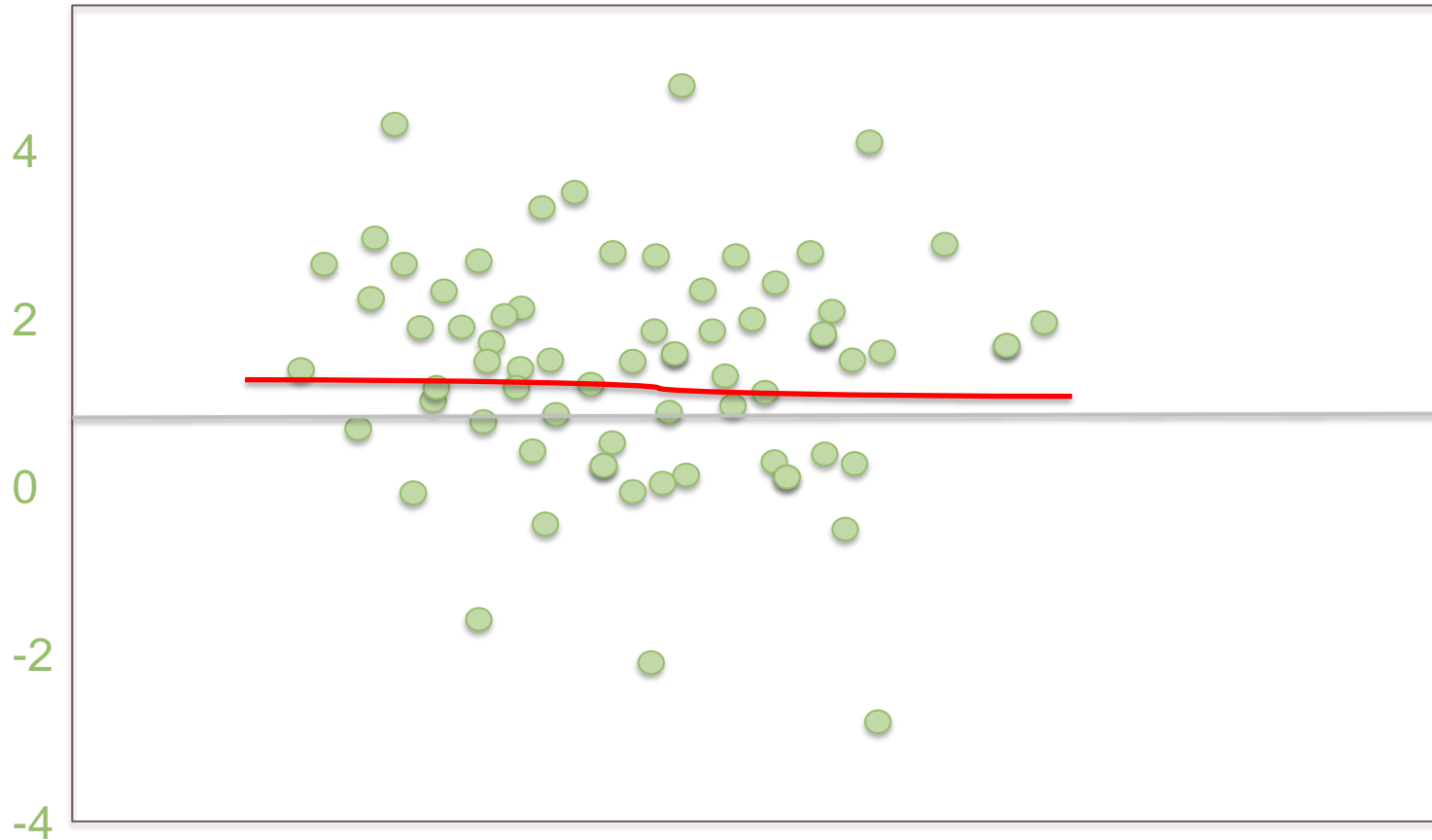
- Hybrid Type 1
  - Primary Aim: Determine effectiveness
  - Secondary Aim: Better understand context for implementation
- Hybrid Type 2
  - Primary Aim: Determine effectiveness
  - Co-Primary Aim: Determine feasibility and/or impact of an implementation strategy
- Hybrid Type 3
  - Primary Aim: Determine impact of implementation strategy
  - Secondary Aim: Assess clinical outcomes associated with implementation

Curran, et al, 2012; Landes, McBain & Curran, 2019





# What Can We Learn from Variation in Translation of Evidence to Policy?



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DiGiulio, Jump, Yu, et al., MMWR, 2018

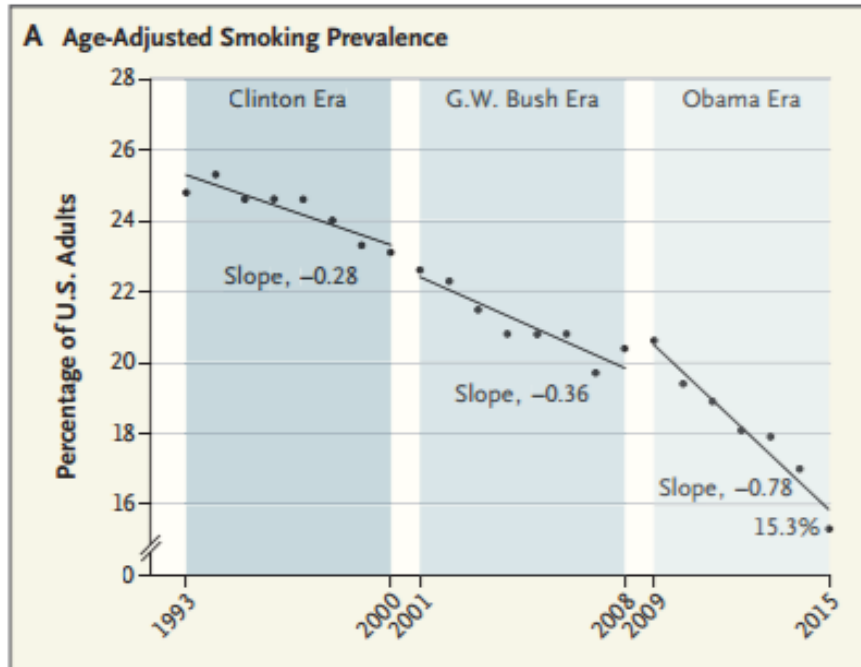


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# Tobacco Use in the US



**Trends in Smoking Prevalence among U.S. Adults.**

Panel A shows age-adjusted prevalence by year, from 1993 through 2015. Data are from the National Health Interview Survey.<sup>1</sup> Panel B shows the estimated trajectories, which are based on the slopes from relevant past periods, from 2015 forward.

- Federal “Interventions”:
  - Tobacco treatment a free essential benefit under ACA
  - Raised federal excise tax to \$1.01/pack
  - FDA authority to regulate tobacco products
- Significant state and local “interventions”



# What Would Policies that Continue the Obama Era Tobacco Use Trajectory Look Like?

## Tobacco 21

On Dec. 20, 2019, the President signed legislation amending the Federal Food, Drug, and Cosmetic Act, and raising the federal minimum age for sale of tobacco products from 18 to 21 years. This legislation (known as “Tobacco 21” or “T21”) became effective immediately, and it is now illegal for a retailer to sell any tobacco product—including cigarettes, cigars, and e-cigarettes—to anyone under 21. The new federal minimum age of sale applies to all retail establishments and persons with no exceptions.

### Tobacco 21 is the Law of the Land



# What Would Policies that Continue the Obama Era Tobacco Use Trajectory Look Like?



International Journal of Drug Policy

Volume 99, January 2022, 103436



Review

## A review of the evidence on cigarettes with reduced addictiveness potential

Eric C. Donny<sup>1</sup>, Cassidy M. White

Available evidence suggests that reducing nicotine content in cigarettes to very low levels could benefit public health in three primary ways, by 1) decreasing uptake of regular smoking, 2) decreasing the amount people smoke, and 3) increasing the likelihood of smoking cessation. Current evidence also suggests that reducing nicotine in cigarettes may produce similar benefits across many important subpopulations of people who smoke, including those with psychiatric comorbidities, those who use other substances, those with low socioeconomic status, young people, people who smoke infrequently and people who prefer menthol cigarettes. Cigarette nicotine reduction could also lead to some undesirable outcomes, such as experiencing withdrawal, product manipulation, an illicit market, and harm misperceptions; strategies that may mitigate each are discussed.



For Immediate Release:

December 23, 2021

FDA NEWS RELEASE

## FDA Authorizes Marketing of Tobacco Products that Help Reduce Exposure to and Consumption of Nicotine for Smokers Who Use Them

*Data Suggest These Products Are Less Appealing than Other Tobacco Products, Unlikely to Lead to Addiction and Initiation Among Non-Users, Including Youth*



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## *F.D.A. Aims to Cut Down on Smoking by Slashing Nicotine Levels in Cigarettes*

The move would be an effort to further wean Americans from addictive tobacco products and reduce smoking-related illnesses.



According to the C.D.C., about 1,300 people die prematurely each day of smoking-related causes, adding up to about 480,000 deaths per year. Taylor Glascock for the New York Times

**By Christina Jewett and Andrew Jacobs**

June 21, 2022

The Food and Drug Administration is planning to require tobacco companies to slash the amount of nicotine in traditional cigarettes to make them less addictive and reduce the toll of smoking that claims 480,000 lives each year.



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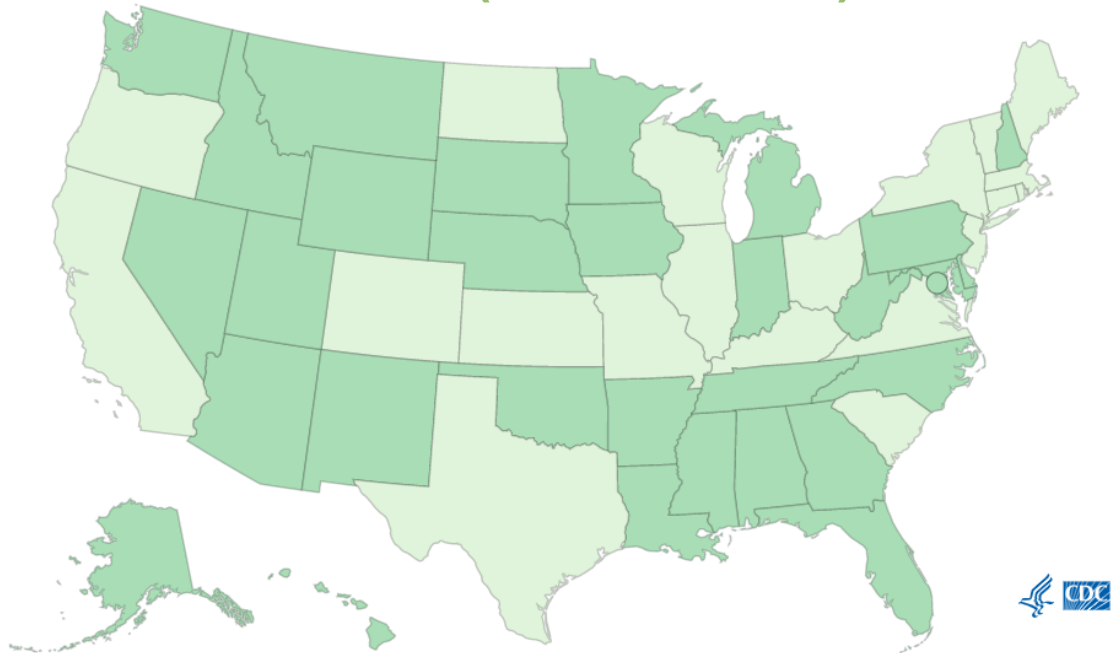


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# What Can We Learn from Variation in State-Level Policies?

## Medicaid Coverage of Cessation Treatments (as of 12/31/21)

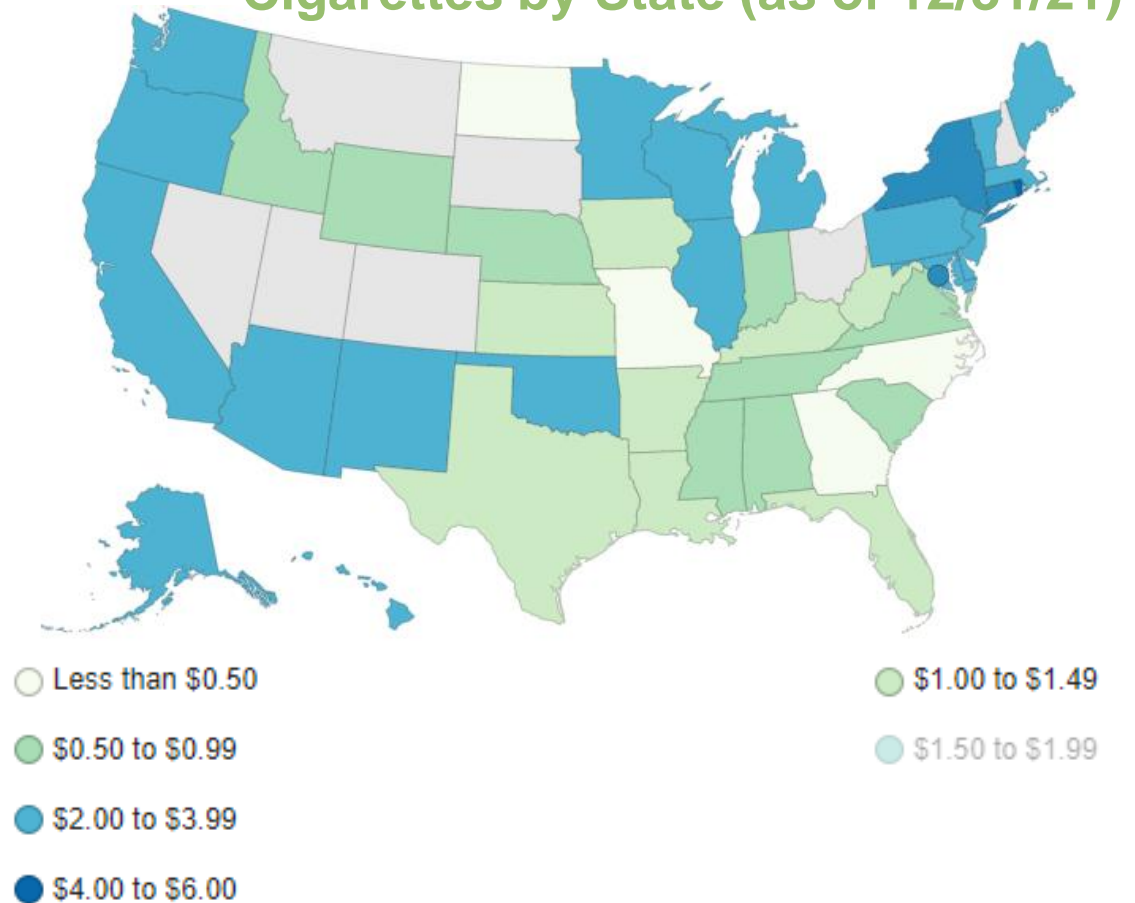


About This Map

● Comprehensive Coverage

● Less Than Comprehensive Coverage

## Excise Tax Rates on Packs of Cigarettes by State (as of 12/31/21)



# How Does Policy Inform and Improve Our Impact on Equity?



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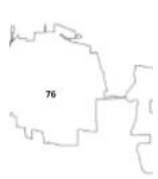


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# We Must Begin to Explore Intersectoral Opportunities in Evidence Translation to Policy

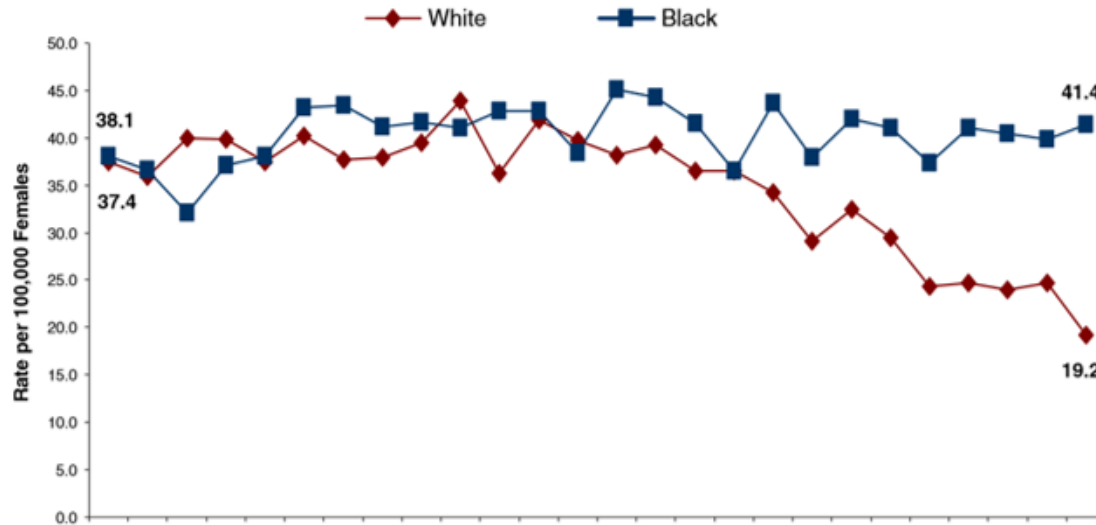
Figure 6. Chicago Community Areas with the Highest 2006-2010 Average Annual Breast Cancer Mortality Rates



- High mortality Predominantly American Comm Areas
- High mortality American Comm Areas
- American College of Radiologists Breast Imaging Centers of



## Black and White Age-Adjusted Breast Cancer Mortality, Chicago 1980-2005



Data Source

Chicago Tribune

WEDNESDAY MAY 8, 2019

SPORTS BREAKING BUSINESS E-NEWSPAPER OPINION ENTERTAINMENT BEST REVIEWS ADVERTISING DEATH NOTICES

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Side



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# SOCIAL DETERMINANTS AND SOCIAL NEEDS: MOVING BEYOND MIDSTREAM



Created by the de Beaumont Foundation and Trust for America's Health, 2019.

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# City Health- Policies to Improve SDOH

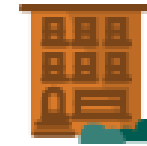
<http://cityhealthdata.org/policy>



Earned Sick Leave



High-quality, Universal Pre-Kindergarten



Affordable Housing/Inclusionary Zoning



Complete Streets



Alcohol Sales Control



Tobacco 21



Smoke Free Indoor Air



Food Safety and Restaurant Inspection Rating



Healthy Food Procurement



## RECOMMENDATIONS FOR EXPANDING RESEARCH INQUIRY IN POLICY IMPLEMENTATION SCIENCE



Examine whether existing IS conceptual frameworks can more explicitly focus on policy



Develop and use policy-relevant measures



Study the intersection between policy instruments and the policy context



Develop collaboration structures that support policy implementation science



Be explicit about the factors that influence the knowledge to policy interface



Equity

Comprehensively explore the impact of all aspects of policy



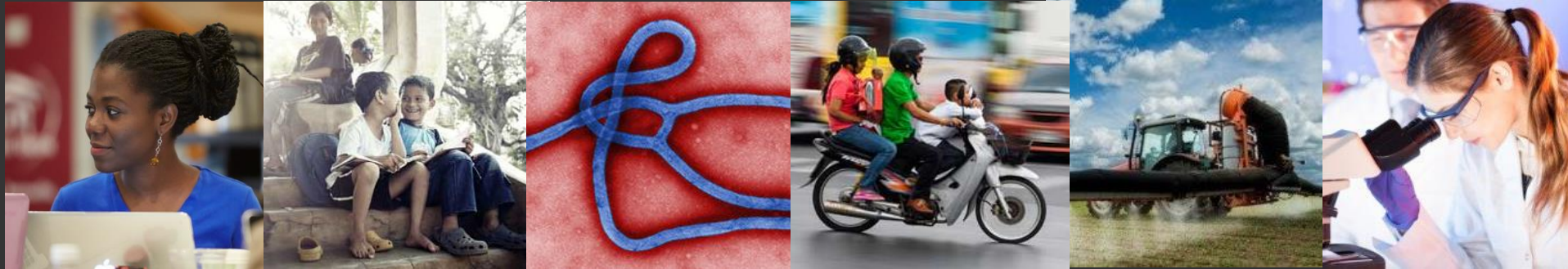
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