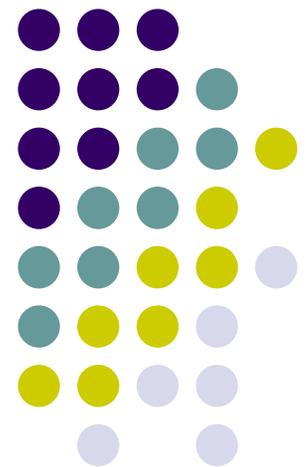


# Epidemiologic research to reduce inequities: Are we missing the mark?

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Patricia O'Campo Ph.D.

December 2010

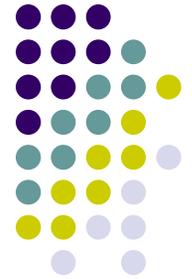
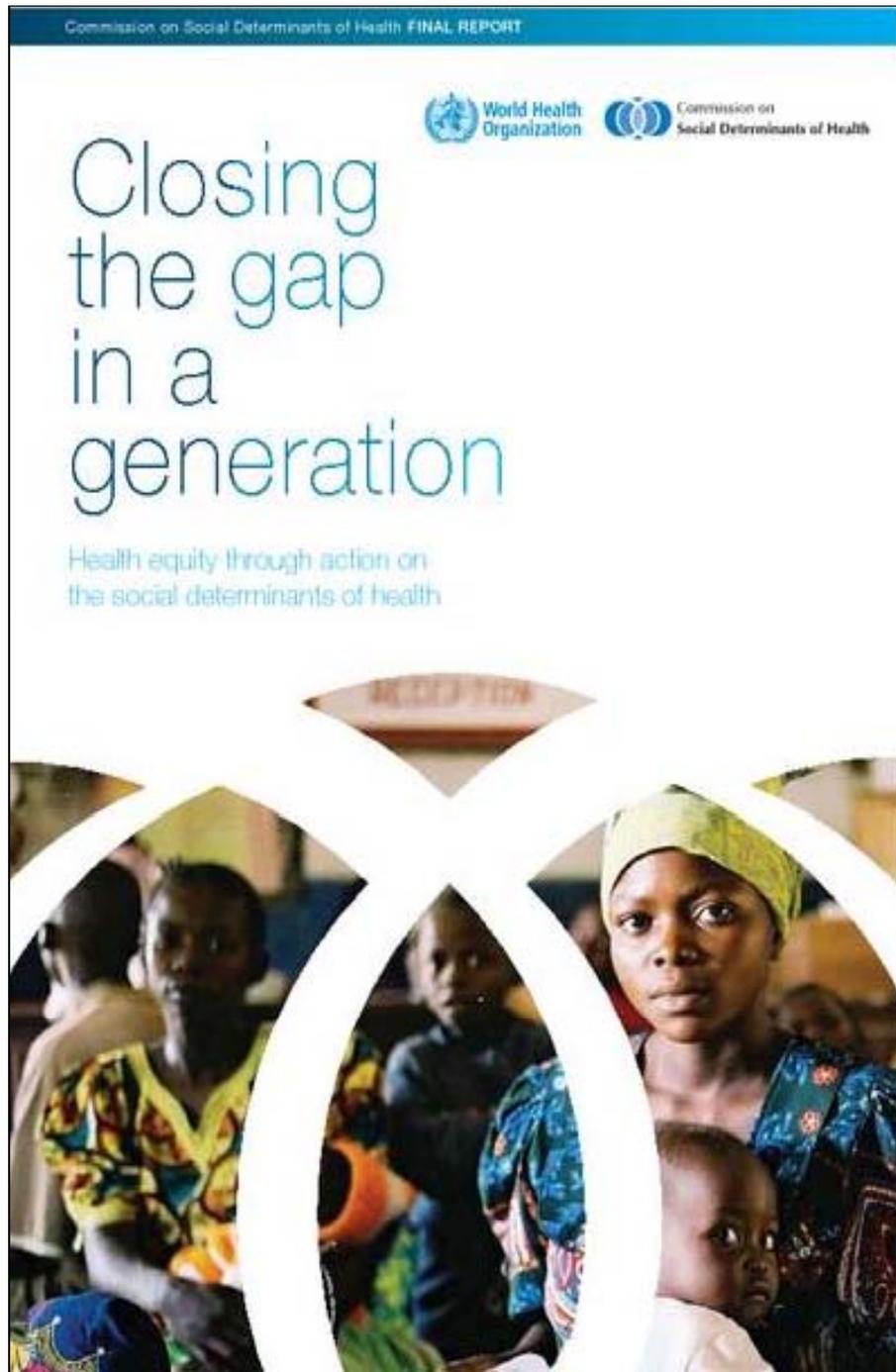


# Key messages



- Health disparities are growing & require immediate action to reverse or eliminate them
- Currently, epidemiologic research generates too little evidence to inform the design and implementation of effective programs and policies to address inequities
- Epidemiologic research foci, methods and scope should
  - Adopt frameworks that accurately reflect Social Determinants of Health (SDOH)
  - Focus on the full set of SDOH to inform solutions
  - Recognize and embrace complexity at multiple levels

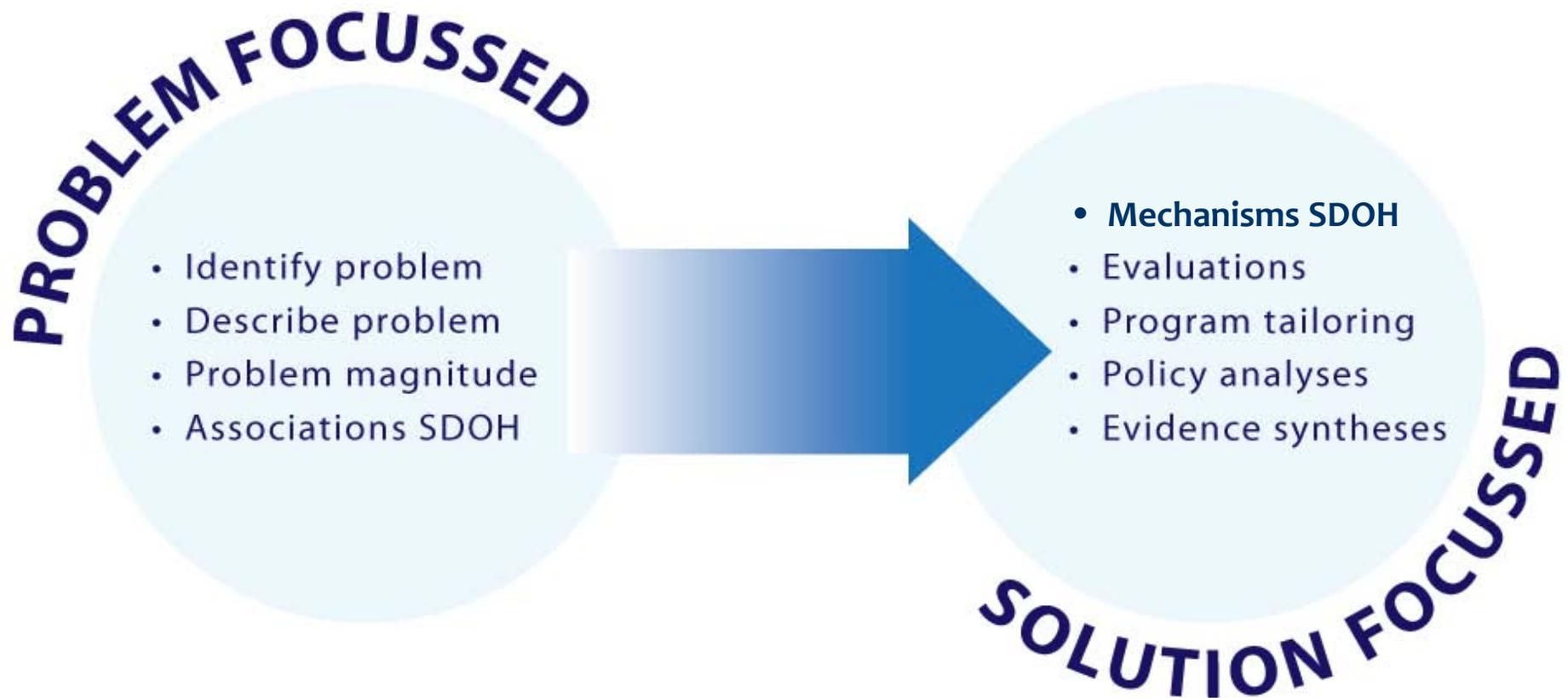
# **Inequities in health**



- **Inequities demonstrated in every country across the globe**
- **But, data on disparities are not new**
- **Too often, gaps don't point what needs to be changed to implement effective solutions**
- **What strong evidence is needed to close the gaps?**

*WHO 2008*

# Research on Disparities: Problems vs Solutions



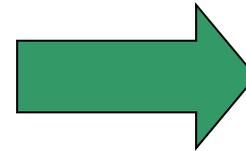


**Are we using the right  
frameworks to inform  
solutions to health inequities?**

# “Disease etiology” (biomedical) models are the norm in public health and epidemiology



Health behaviours  
Age  
Environmental exposures  
Neighborhood environment  
Socioeconomic Position



**Single Health Outcome**

(eg PTB, smoking,  
Cancer, Diabetes  
CVD)

# “Disease etiology” (biomedical) models are the norm in public health and epidemiology



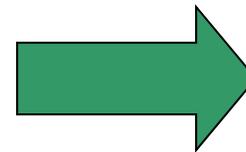
Health behaviours

Age

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Socioeconomic Position



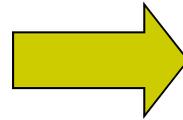
**Single Health Outcome**

(eg PTB, smoking, Cancer, Diabetes CVD)

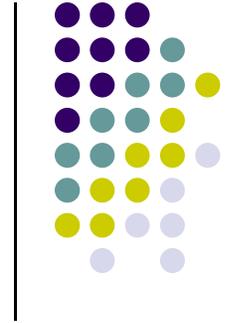
Yet, consequences of social exposures (eg low SEP) are multiple and are non-specific, “Social consequences”



Socioeconomic Position  
or Poverty



Obesity  
CVD  
Hypertension  
Diabetes  
Mental health probs  
PTB



- Mention the zero problem

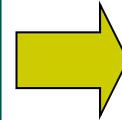
# “Health Consequences of social exposures” Canadian Sample



Sample: Adults ages 18-60, Canada 2000-2005  
N = 82,151

**Socioeconomic Position**  
**income**  
**education**  
**neighborhood deprivation**

Marital status  
Visible minority status  
Gender  
Age



Obesity (14%)  
Diabetes (3%)  
Mood disorder (11%)  
Heavy smoker (16%)  
Heavy drinker (3%)  
CVD (10%)

# “Disease etiology” vs Consequences of low SEP

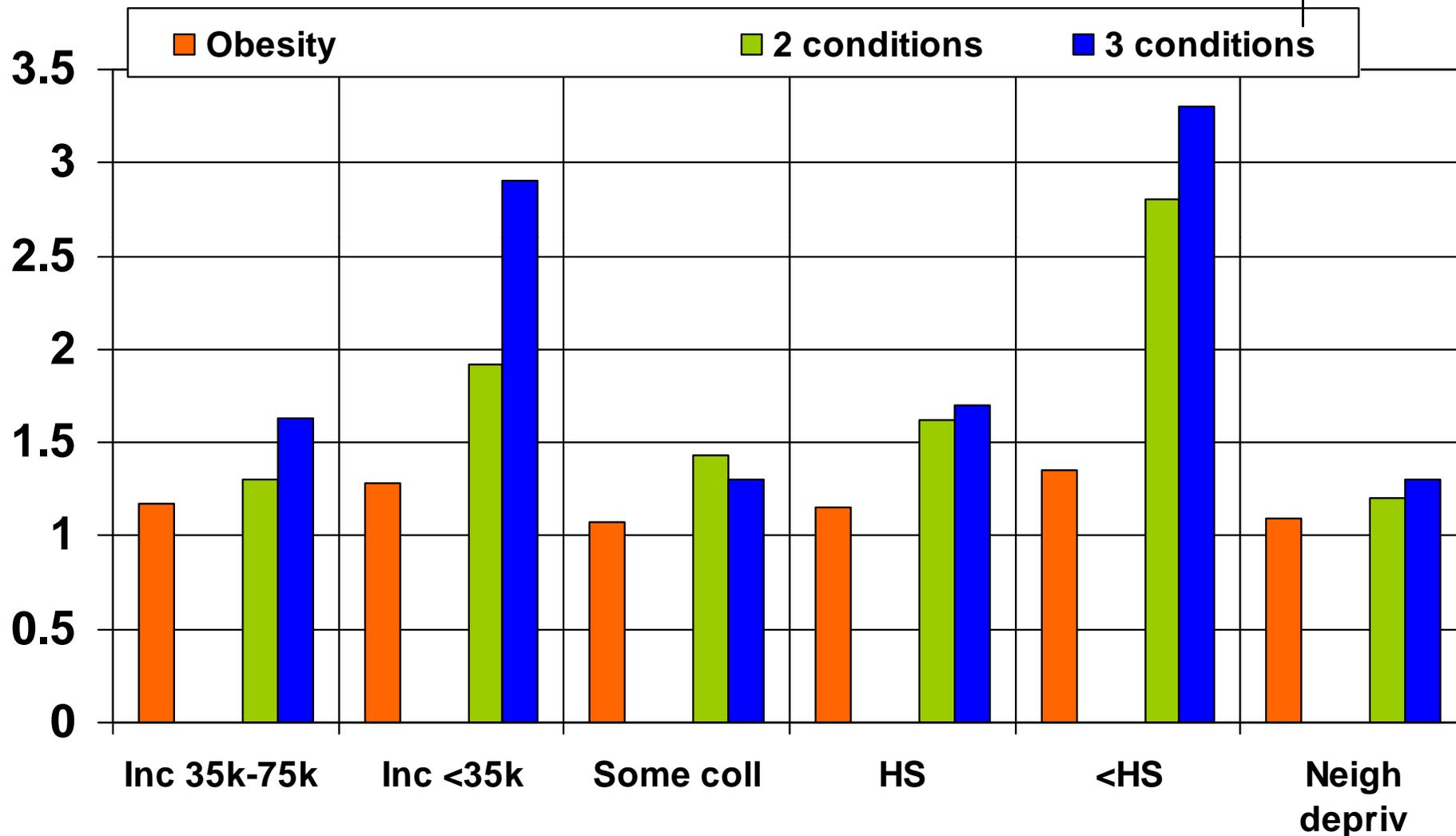
(odds ratios and 95% CI)



	<b>Obesity</b>
<b>Income \$35k-75k</b>	<b>1.17 (1.11, 1.22)</b>
<b>Income &lt;\$35k</b>	<b>1.28 (1.20, 1.36)</b>
(ref =>75k)	
<b>Some Postsecondary</b>	<b>1,07 (1.00, 1.15)</b>
<b>High School</b>	<b>1.15 (1.09, 1.21)</b>
<b>Less than High School</b>	<b>1.35 (1.27, 1.44)</b>
(ref postsecondary educ)	
<b>Neighborhood deprivation</b>	<b>1.09 (1.06, 1.12)</b>

\*adjusted for gender, age, marital status, visible minority status and all SEP variabl

# “Disease etiology” vs Consequences of low SEP



# Biomedical or disease specific models underestimate social exposures



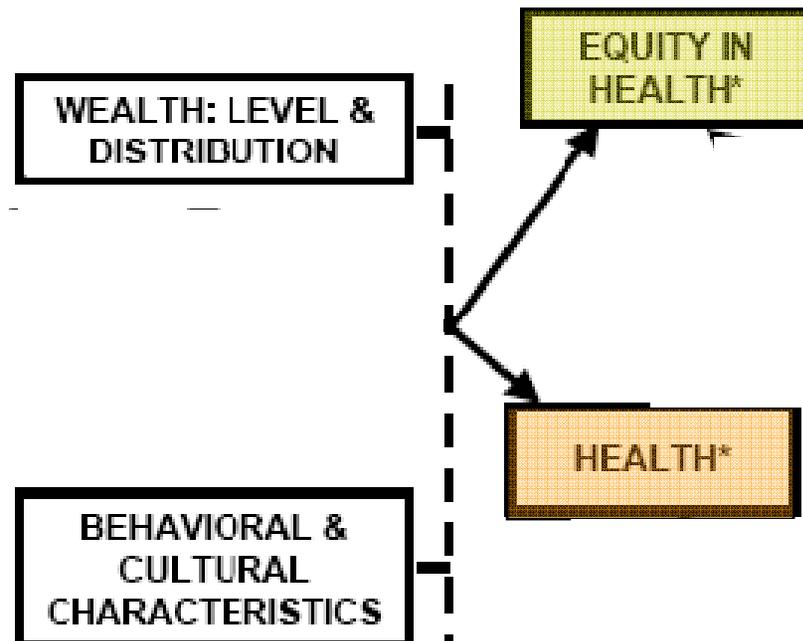
- Underestimates (across the health conditions)
  - Across all health conditions in the composite index, the range of underestimation of the impact of 'deprivation' ranged from 40-85%
- Biomedical models underestimate the impact of social exposures on health
- Social consequence approach is more theoretically consistent with and more accurate in measuring the impact of 'social' exposures on well-being including SEP, housing, social policies, neighborhood environments, etc
- When we are interested in the consequences of 'social exposures' we should consider using alternatives to the 'biomedical model'.

# The pathways from Social determinants to Health & Health Equity are multilevel & complex yet biomedical models & data sources promote a focus on individuals



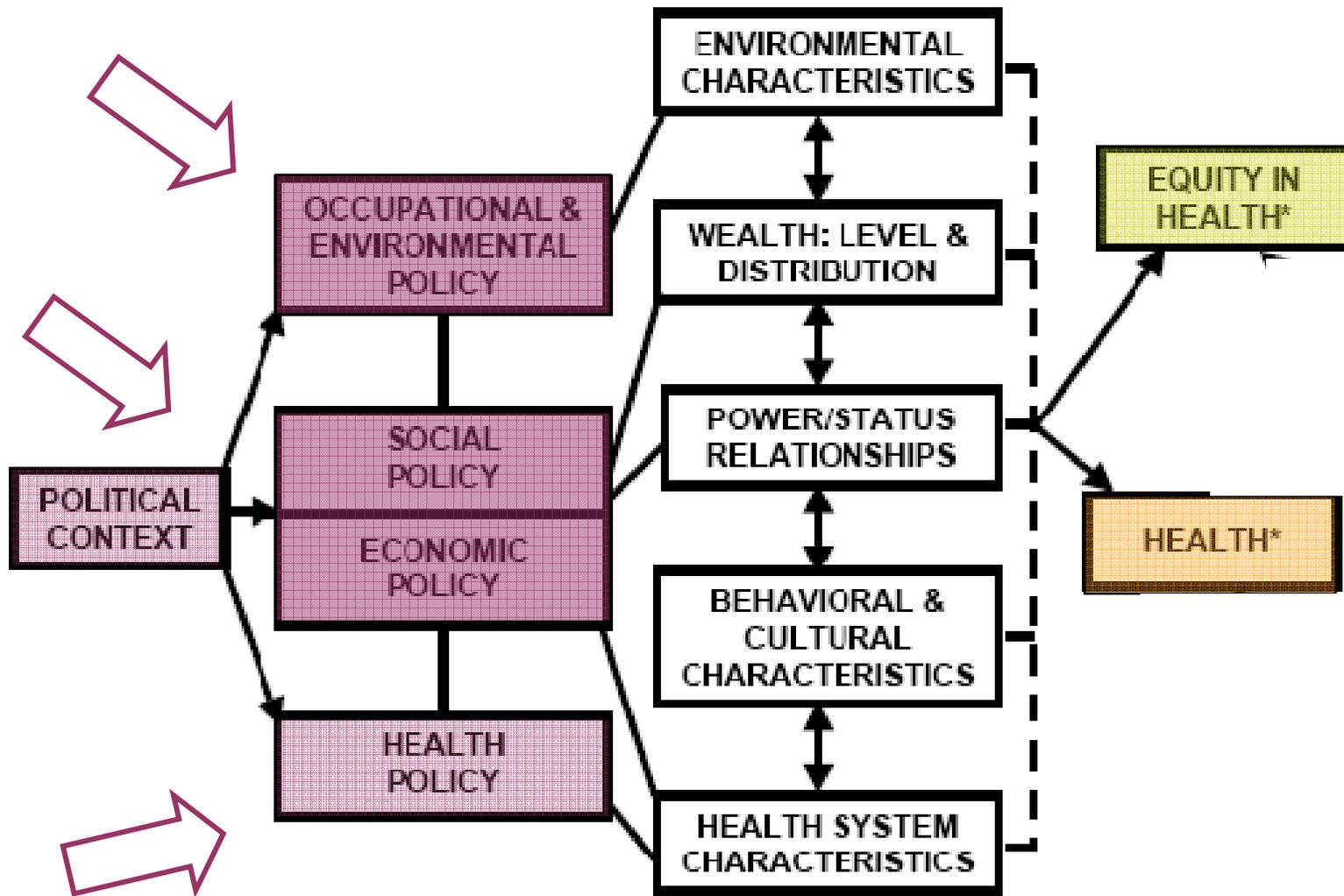
3 year search: ~25

3 year search: ~1000



Adapted from Starfield 2002

# Pathways and mechanisms of Structural and Policy determinants of health

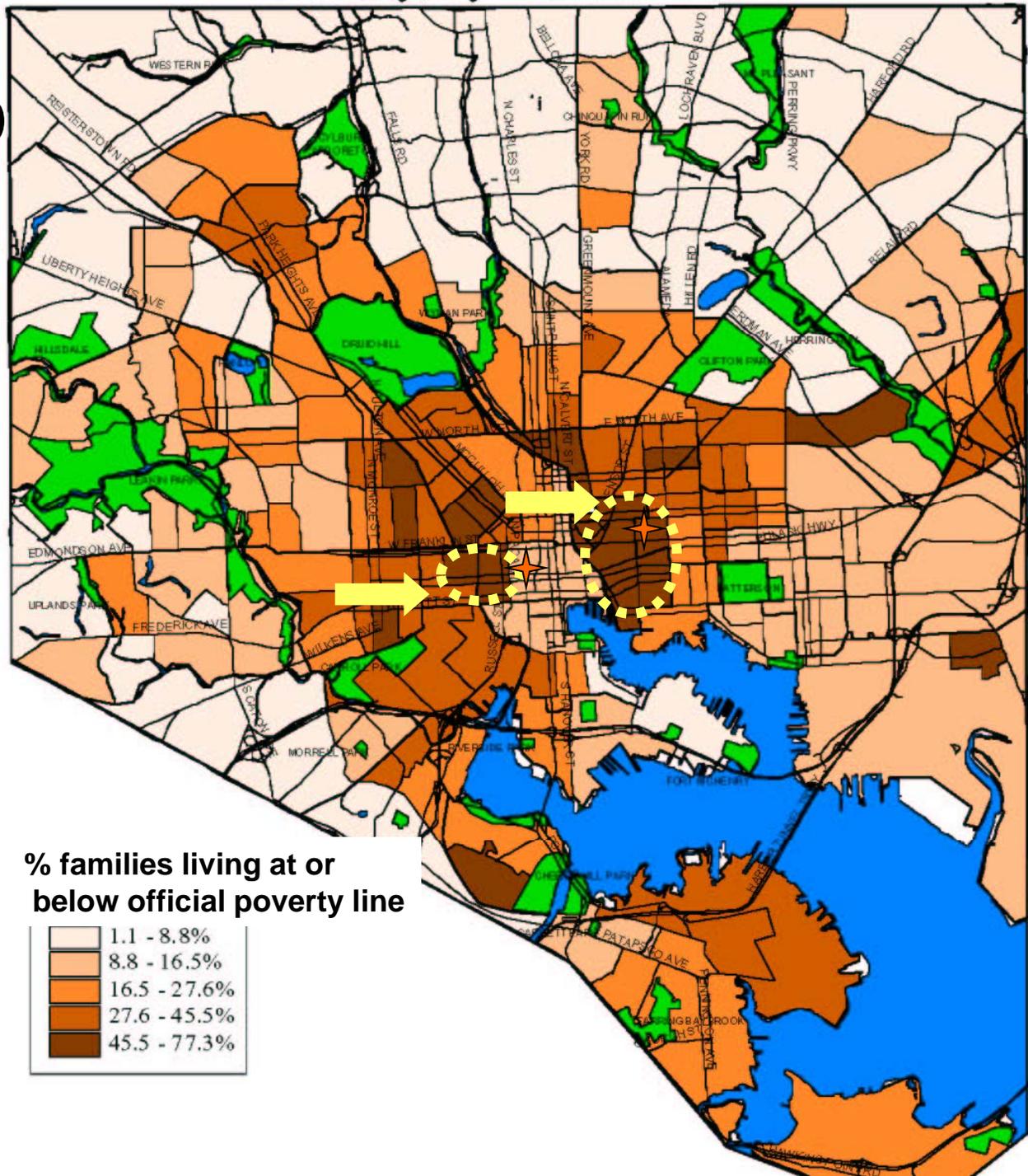


Adapted from Starfield 2002

# Baltimore, MD

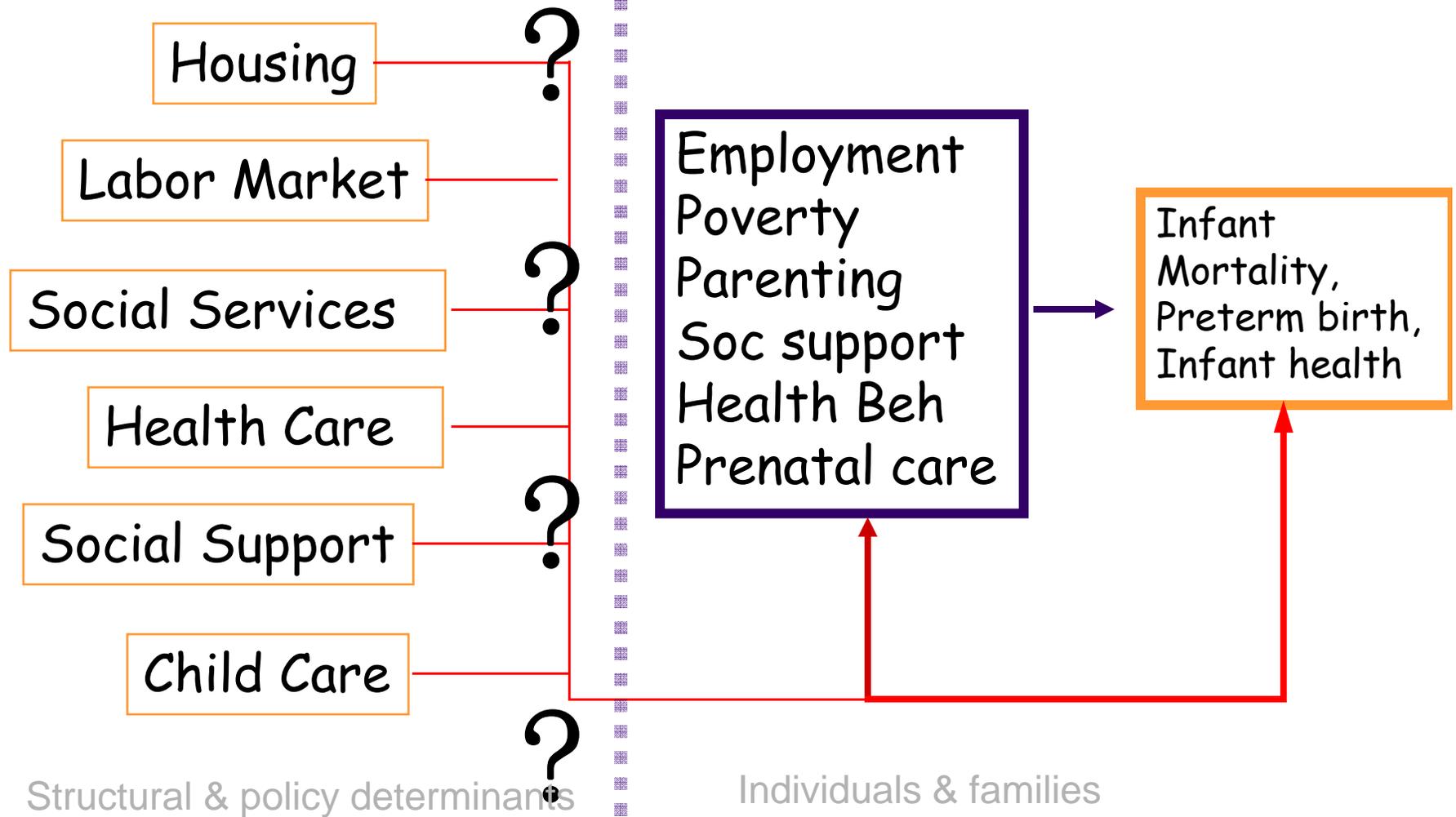
First sites  
early 1990s

Healthy Start  
Demonstration  
Program

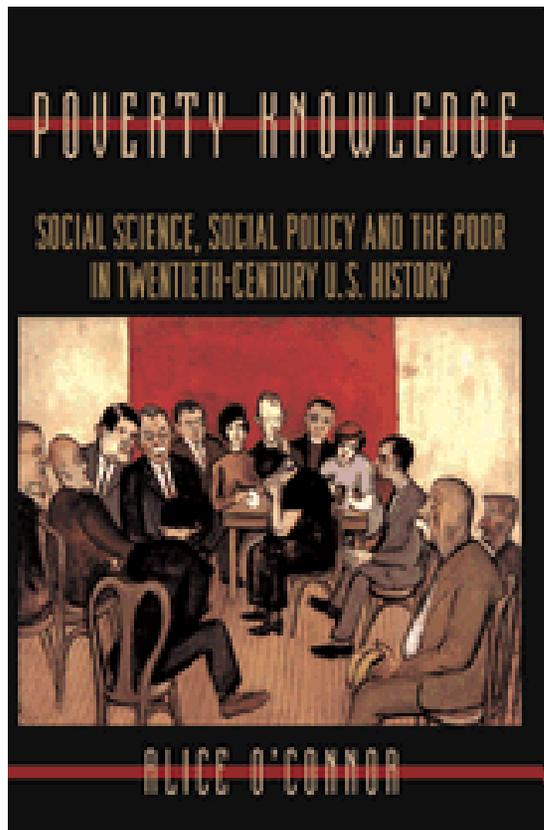




# SDOH and program framework: where does the research tell us to put the \$\$\$\$\$\$ ?????



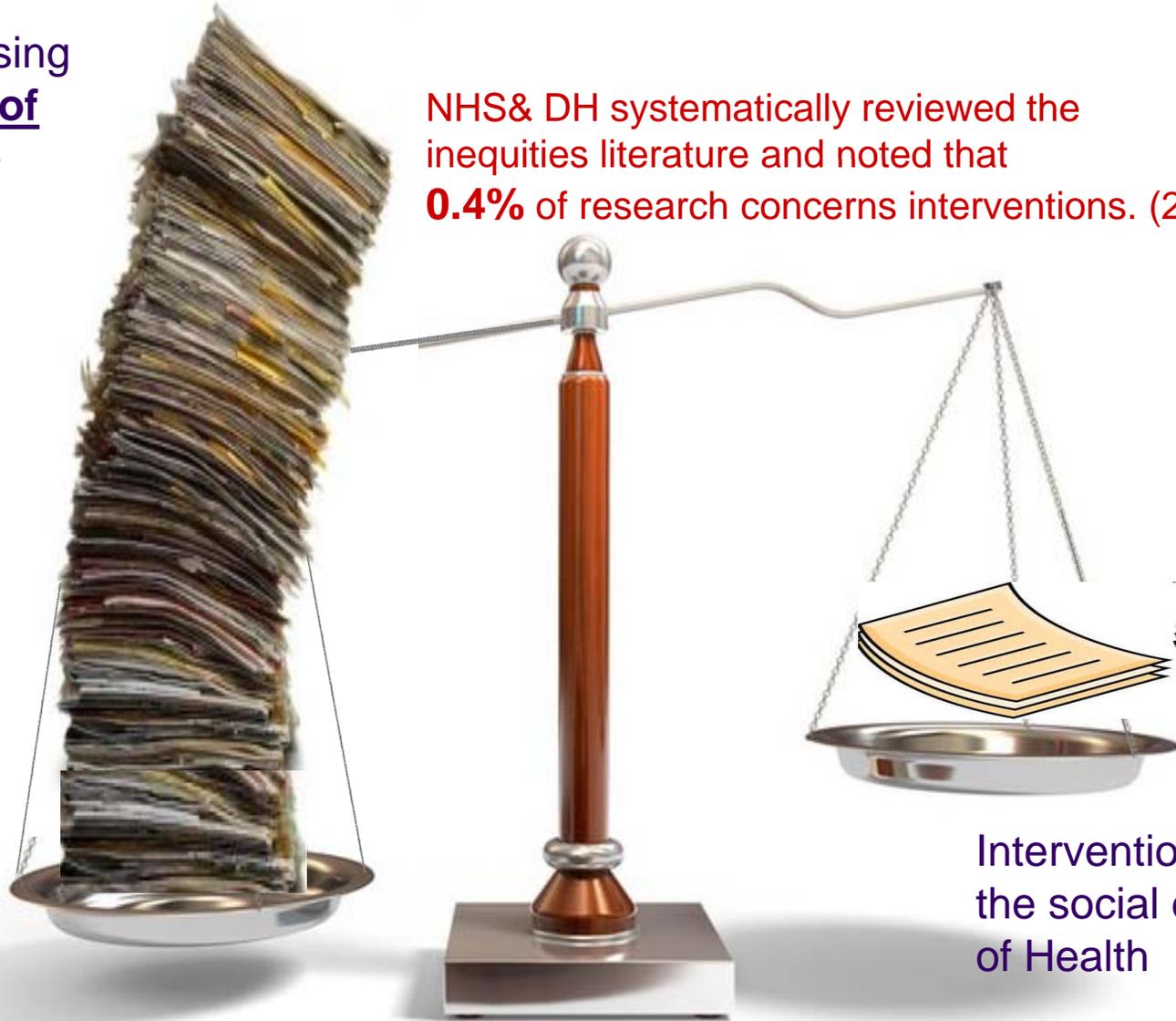
# Poverty reduction policies



- Multi-million dollar poverty research industry got it wrong in 1990s (welfare reform/TANF):
- “The problem was with what was being left out [of research]. Poverty analysts rarely incorporated institutional practices, political decisions or structural economic changes into their research; the focus was on individuals and their families”...[Research] “made it easier to think about poverty as a failure of individuals...rather than of an economy in which middle- and working-class as well as officially poor Americans faced diminishing opportunities.”

Studies focussing on problems of individuals—

NHS& DH systematically reviewed the inequities literature and noted that **0.4%** of research concerns interventions. (2002)

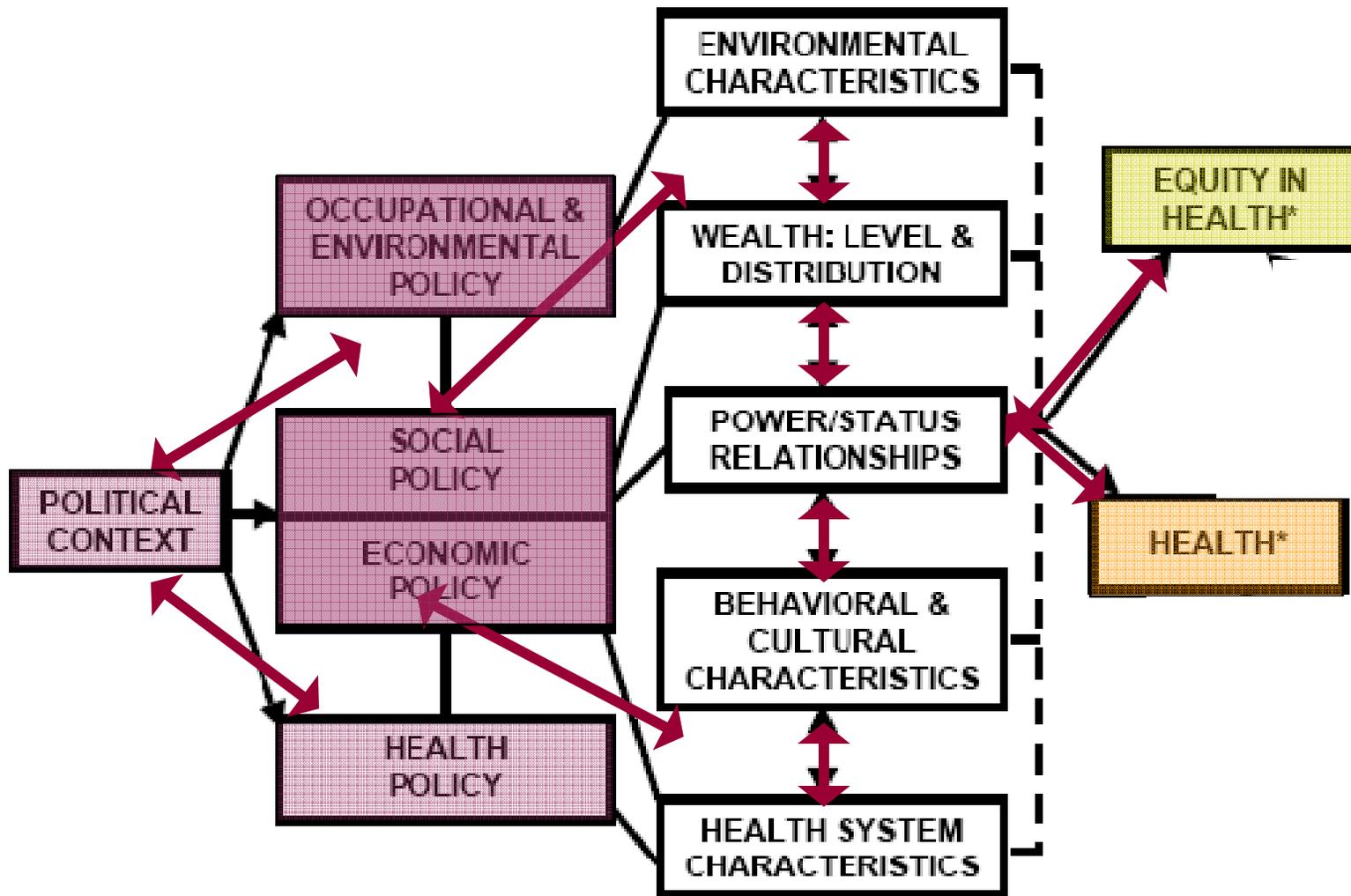


Interventions on the social determinants of Health



**What about complexity (at multiple levels)?**

# Pathways and mechanisms of multi-level determinants of health





# Benefits of Systematic Reviews

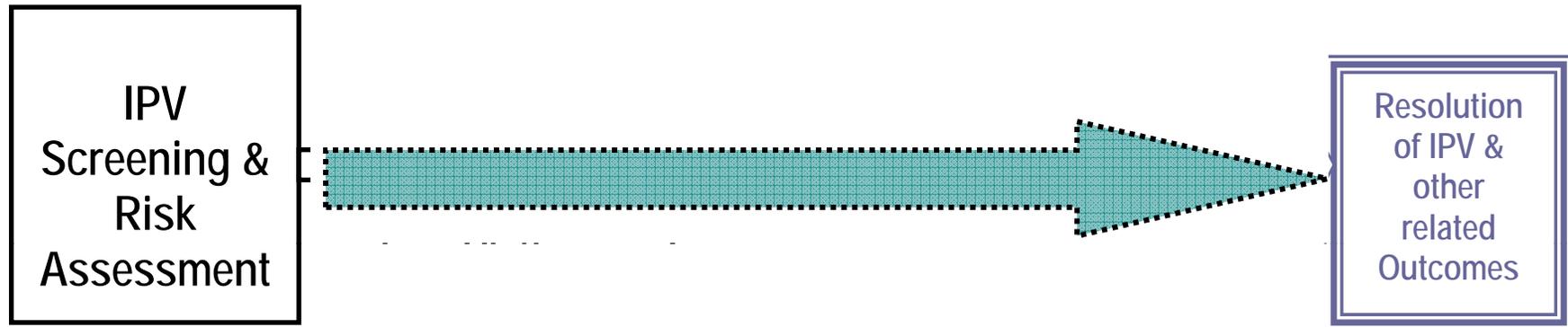
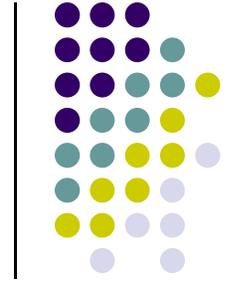
- Strongest form of evidence
- Systematic reviews take all studies on Intervention X, regardless of the demonstrated ‘success’ of the intervention, to assess effectiveness. Decreases the likelihood of being misled by a single research study
- Often, yields a summary statistic for the effectiveness of “X” intervention and is an excellent source of evidence for straightforward (simple) interventions
- For complex interventions, conventional systematic reviews may be limited
  - Evidence is hard to synthesize into a summary statistic
  - Reviews of complex interventions are better served by focussing on how and why programs are (or are not) successful

## Intimate partner violence (IPV): example of pathways across multiple levels



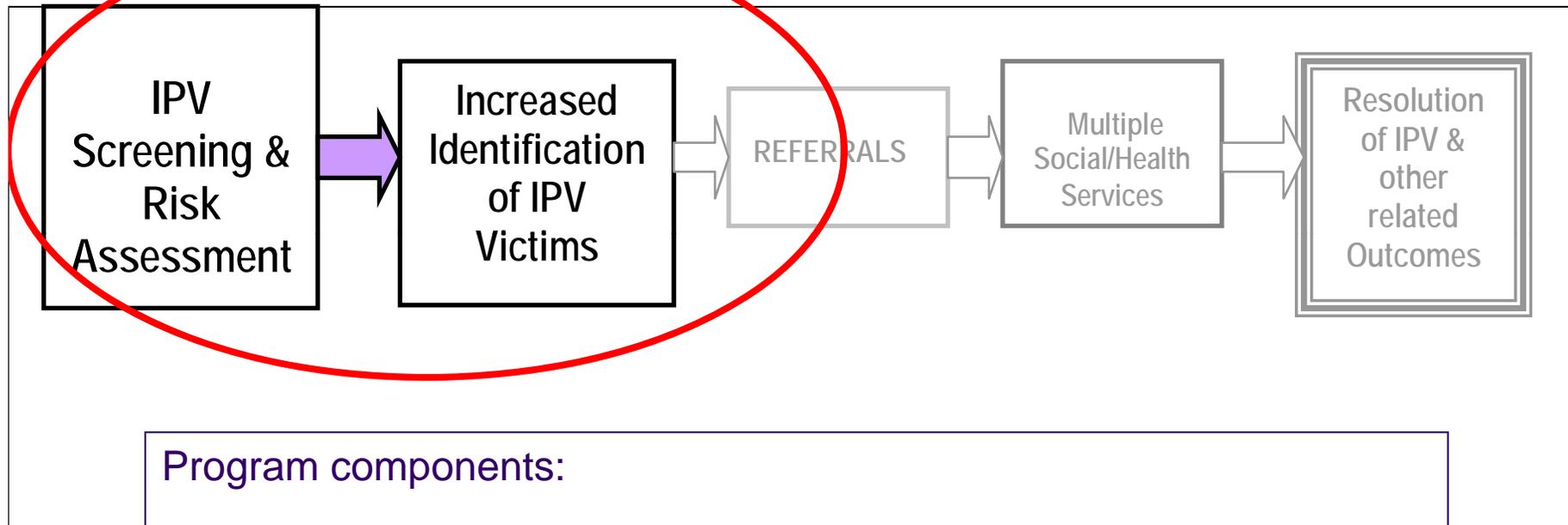
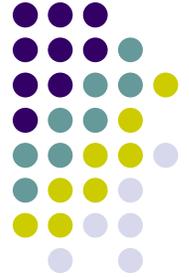
- Research emerged in 1970s about partner violence
- Until 1980s public health viewed this as criminal issue and avoided getting involved
- Because of the research on the magnitude of IPV—22-30% lifetime\*—numerous professional health organizations called for universal screening in the 1990s.
- Is partner violence screening like screening for other health conditions (e.g., high blood pressure)?

# Process of partner violence resolution



- **10+ systematic reviews/evidence syntheses on IPV screening**
- **Strong statements about how evidence to support screening is lacking—despite wrong outcomes & interventions**
- **Lack of support for screening should be questioned based upon studies with flawed “theories”**

# Realist review of IPV screening (how it works)



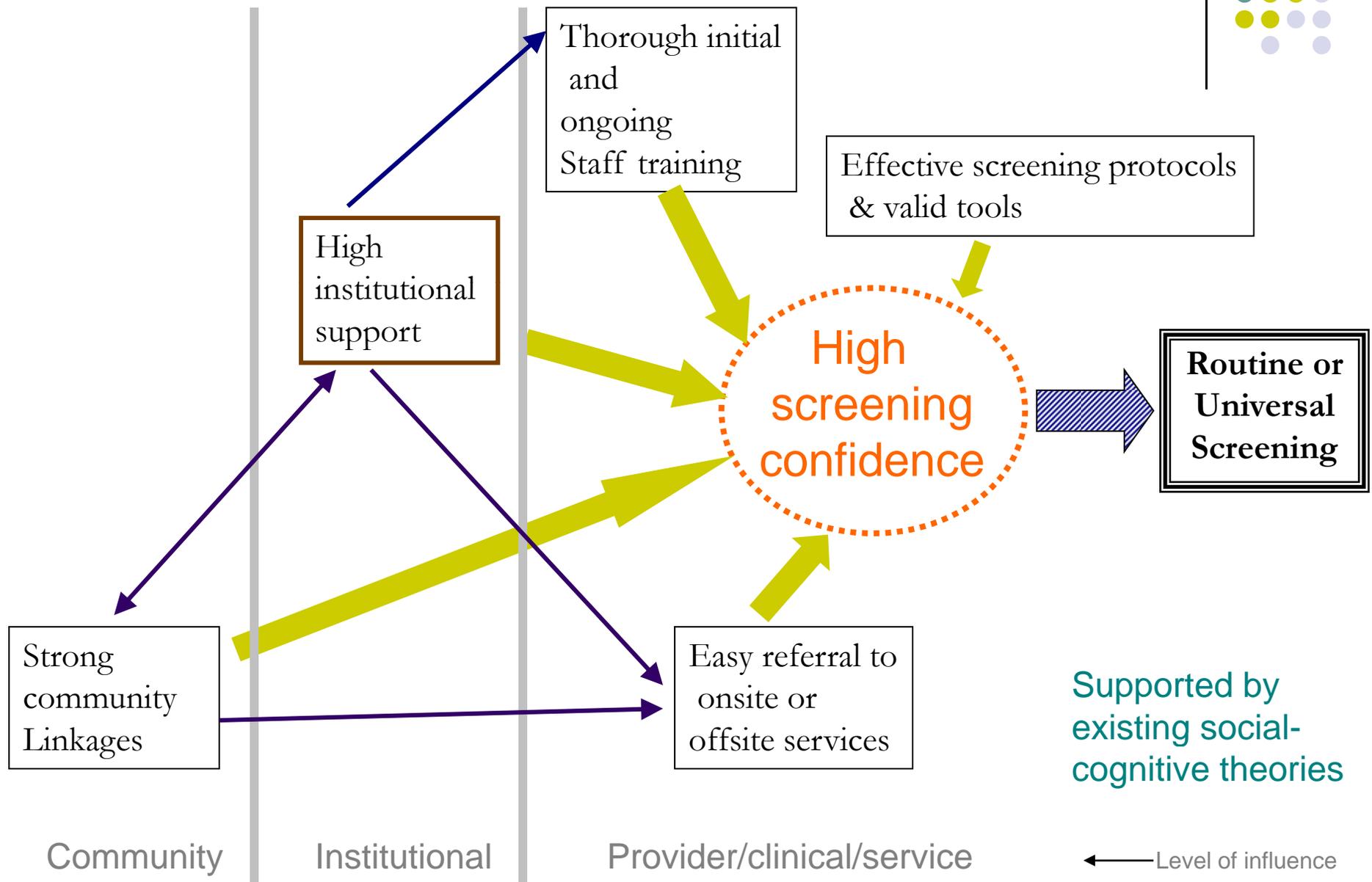
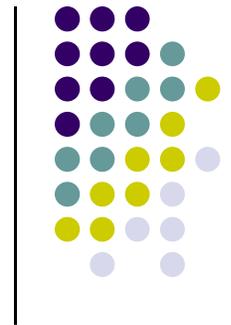
## Program components:

More than just whether screening occurred  
& violence resolved (in a conventional systematic review approach)  
Looked at multiple-multilevel influences on screening process  
Looked at HOW screening worked & identified facilitators & barriers to screening (using realist review approaches)

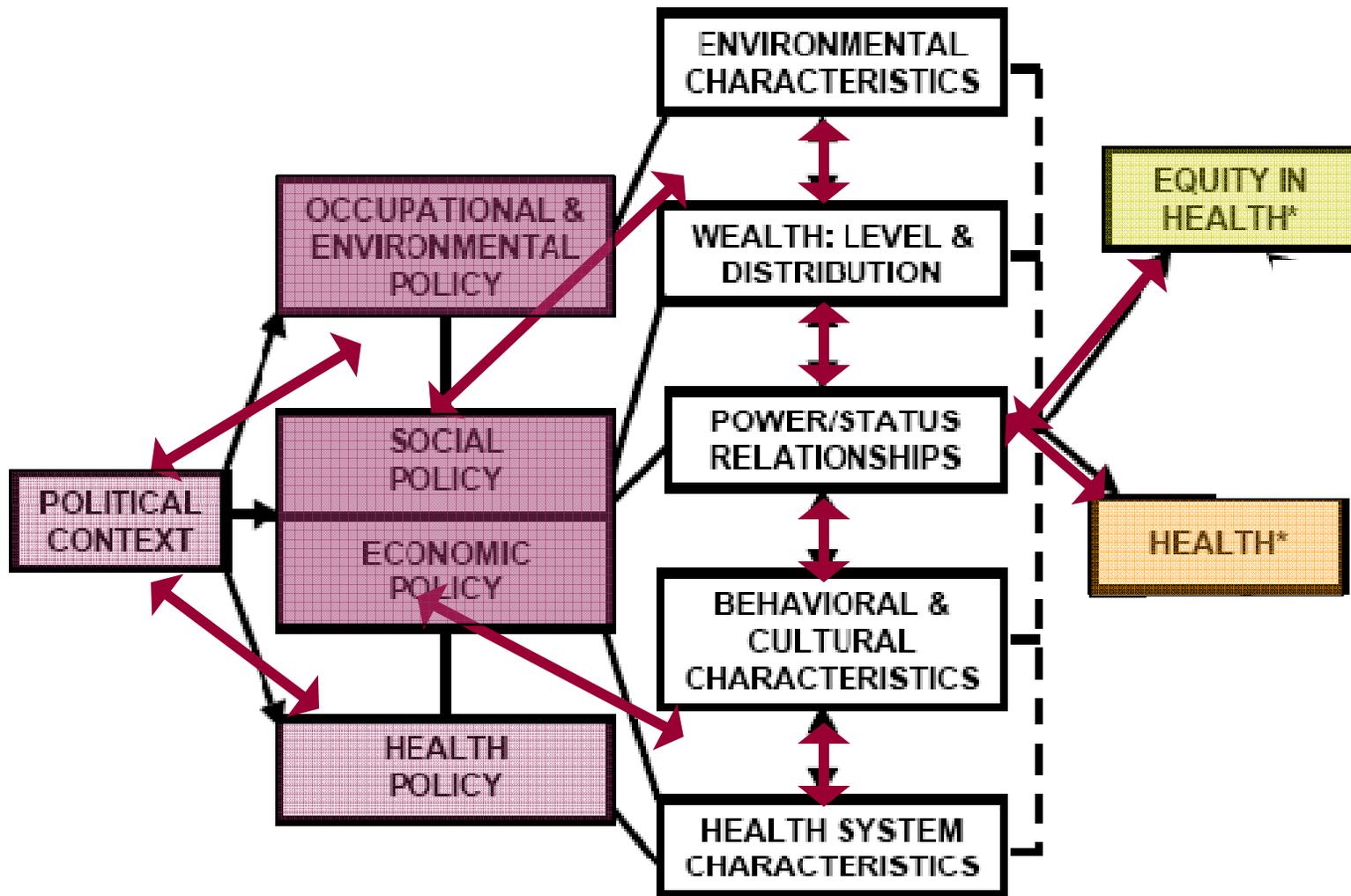


	<b>REALIST REVIEW</b>	<b>CONVENTIONAL SYSTEMATIC REVIEW</b>
<b>Type of Intervention</b>	Complex	Simple; discrete
<b>Aim / Focus</b>	EXPLANATORY - how 'x' works	JUDGEMENTAL - which of x,y,z works best
<b>Evidence Source</b>	Peer reviewed journal literature, policy reviews, stakeholder analysis, focus groups, gray literature (reports, conference proceedings).	Peer reviewed literature (finite set of data)
<b>Method</b>	<b>Theory-driven synthesis:</b> deconstructs intervention into component theories. Context data retained and basic theory is refined concerning applicability in context.	<b>Statistical synthesis/Meta-analysis:</b> data from individual studies are combined statistically and then summarized

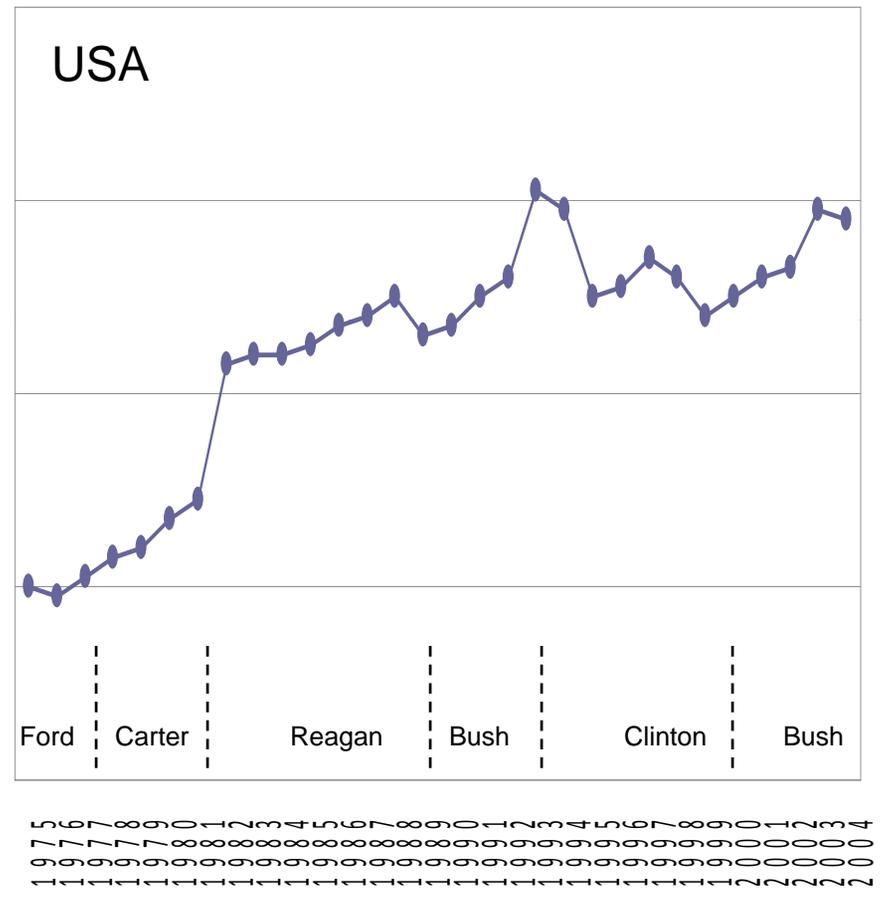
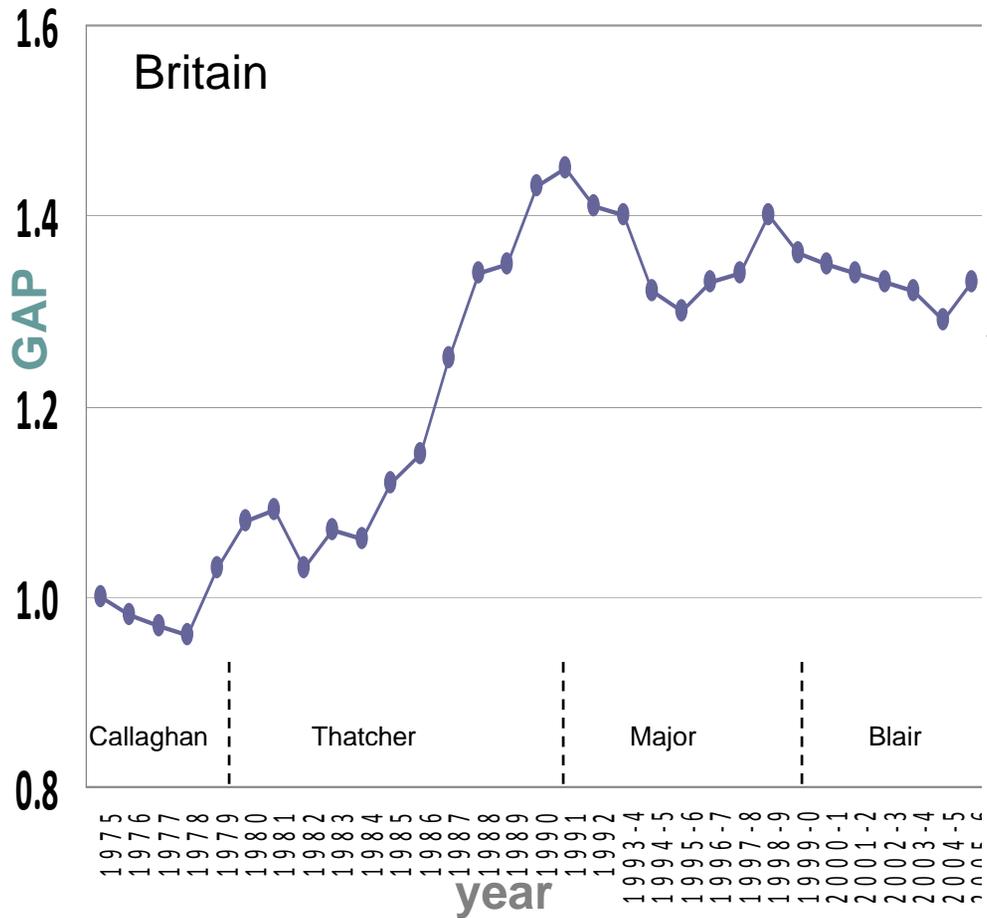
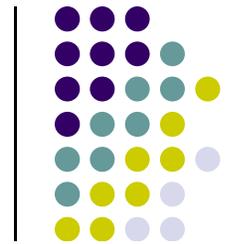
# IPV Screening in Health Care Settings: what works



# Need more evidence on the Pathways and mechanisms of Structural and Policy determinants of health

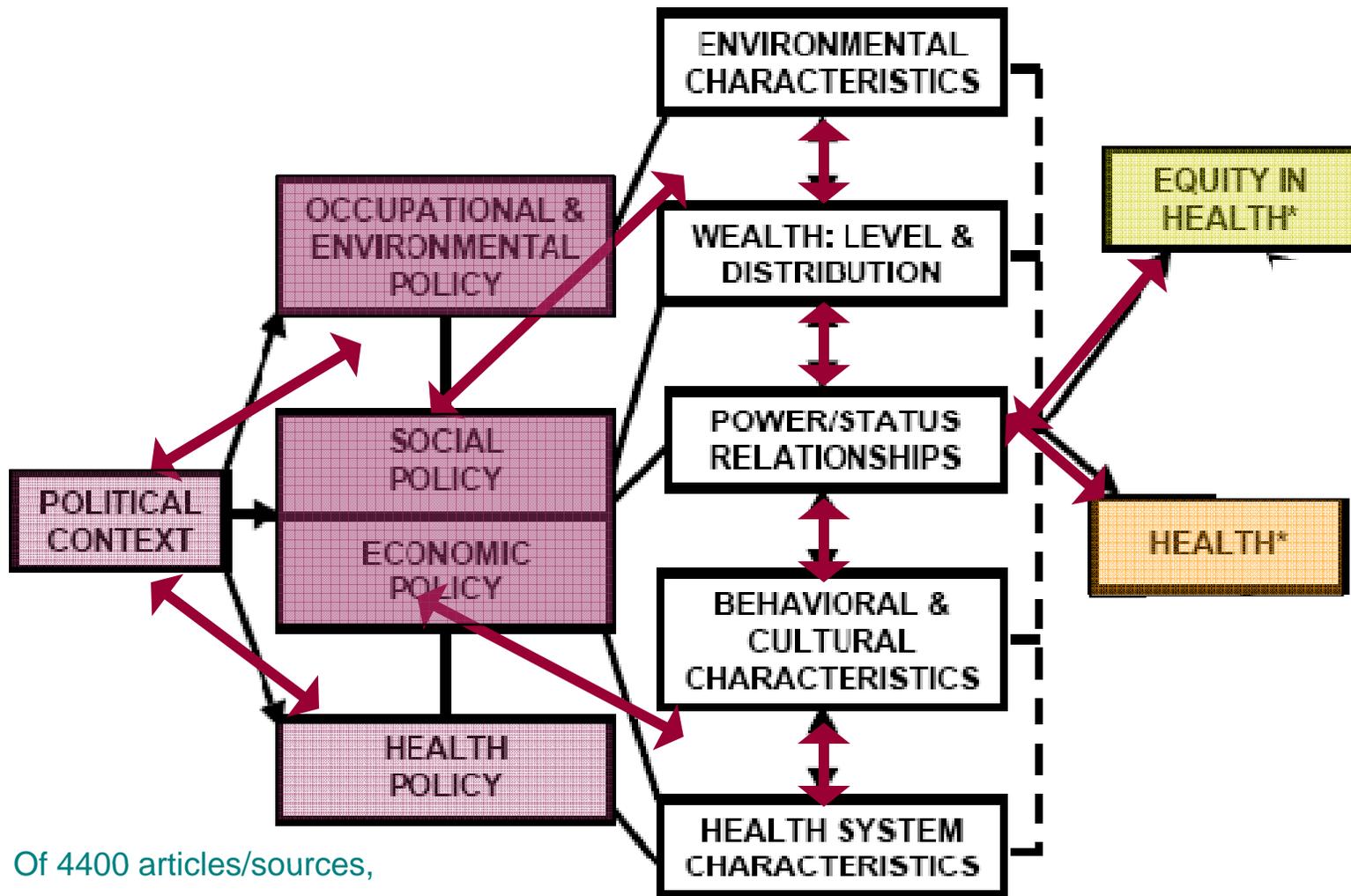


# Widening gap between the incomes of the richest & poorest 10 percent in Britain & USA 1975 2005-2006



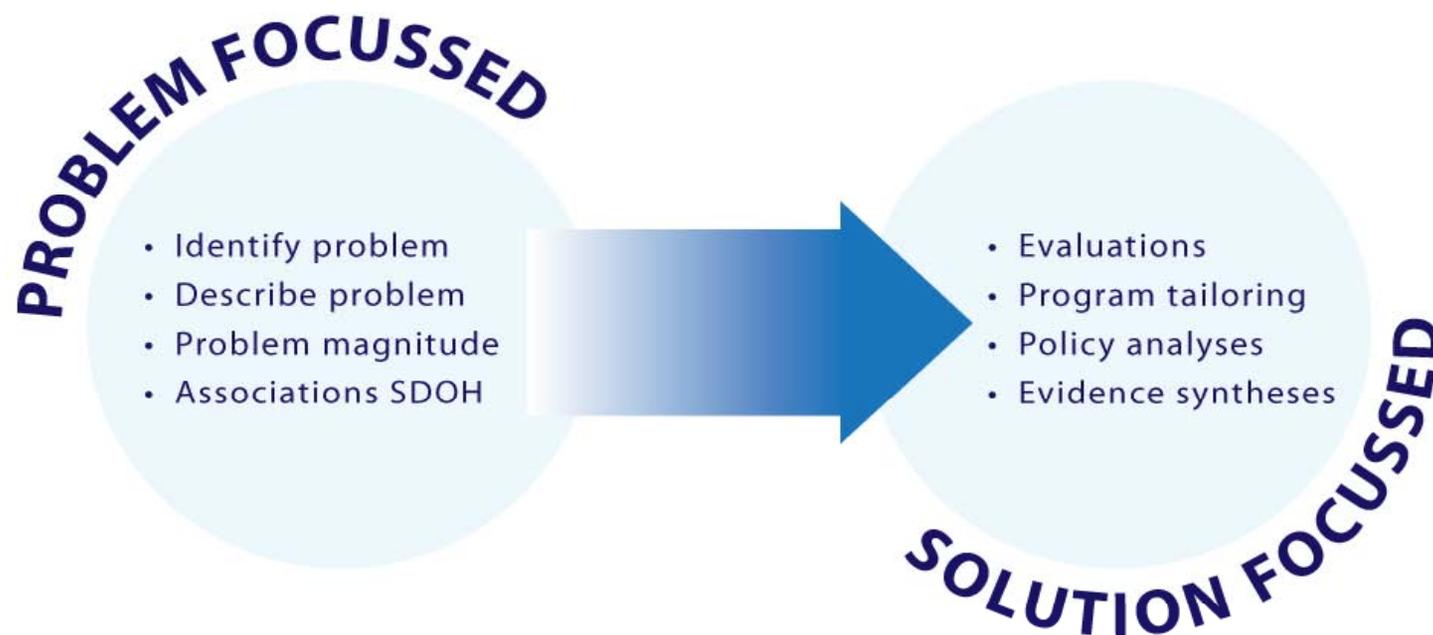
**Inequities are increasing and are undeniably related to national policies**

# Need more evidence on the Pathways and mechanisms of Structural and Policy determinants of health



Of 4400 articles/sources,  
83 focussed on the  
pathways of intersectoral strategies

# Summary



- **To reduce inequities, we need both problem and solution focussed research but we need a better balance**
- **We need employ appropriate frameworks to generate evidence to reduce inequities**
- **We need our approaches to acknowledge multiple levels and complexity (of mechanisms)**
- **Only then can epidemiology generate strong evidence to “close the gap’ in a generation**