



**The Southeast Region Consortium &
AUCD Presents**

New Bottles for Old Wine
Lifecourse Framework in
Historical Perspective

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 **Health
Pediatrics**
UNIVERSITY OF MIAMI HEALTH SYSTEM

UNIVERSITY OF MIAMI
**MILLER SCHOOL
of MEDICINE**

Disclaimers and Acknowledgements

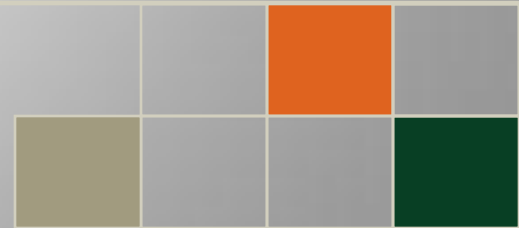
- ◆ I have no affiliations or conflicts of interest to disclose.
- ◆ Based on a presentation I made at AUCD annual meeting in 2010
 - Thanks to Karen Edwards
- ◆ Grateful to Milton Kotelchuck and some his colleagues for use of several of their slides.



Pretest: Which Best Describes Your Program?

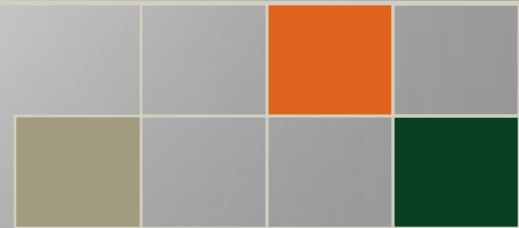
A. Health of people with disabilities is determined primarily by access to high-quality, well-trained physicians and allied health care professionals.

B. Health of people with disabilities is determined by many factors, including access to a variety of health and educational services, built environment, opportunities for community participation, social attitudes, etc.



Objectives

- ◆ To explain the lifecourse framework and how it is related to people with developmental disabilities
- ◆ To describe how epidemiological and historical trends affect the system of care for children with developmental disabilities
- ◆ To identify at least one way to integrate the lifecourse framework into training professionals in the field of developmental disabilities



Outline

I. “Where we are”—lifecourse; social determinants

- Health disparities despite advances in medical care
- Some “new” science, but we already do this . . .

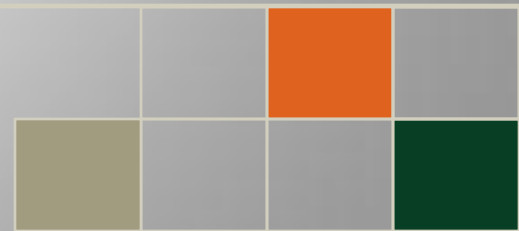
II. “Where we’re coming from”—this won’t be easy

- Medical model is deeply embedded in our approach to health
- Social determinants can be difficult to address
- We (LENDs and UCEDDs) well-positioned, but . . .



Part 1 “Where We Are”

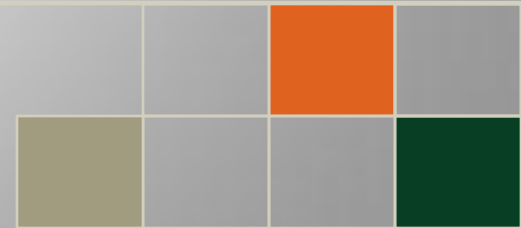
- ◆ Define “social determinants of health”
- ◆ Define “lifecourse”
- ◆ “Old wine” to those of us in child development
- ◆ Why has this emerged recently?
 - Health disparities not getting better
 - Some new research
- ◆ MCHB strategic planning



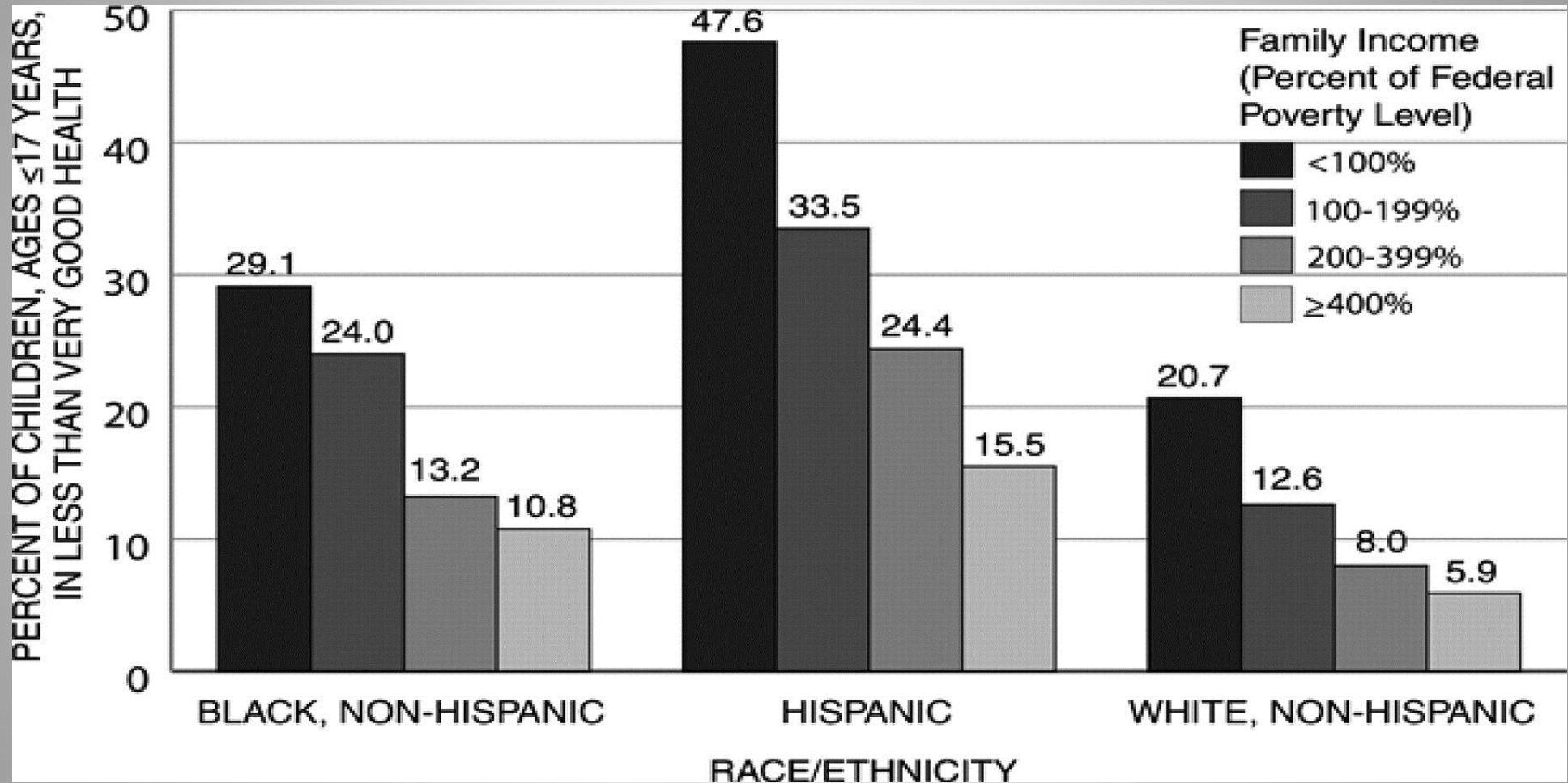
Social Determinants

- ◆ The social determinants of health are those factors which are outside of the individual; they are beyond genetic endowment and beyond individual behaviors. They are the context in which individual behaviors arise and in which individual behaviors convey risk. The social determinants of health include individual resources, neighborhood (place-based) or community (group-based) resources, hazards and toxic exposures, and opportunity structures.

Camara Jones, CDC, 2010



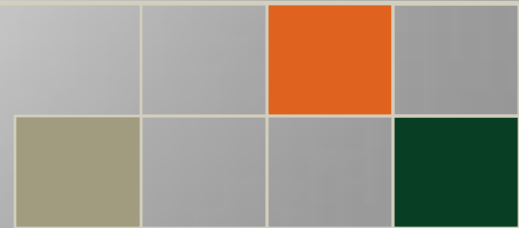
Health Disparities in the US



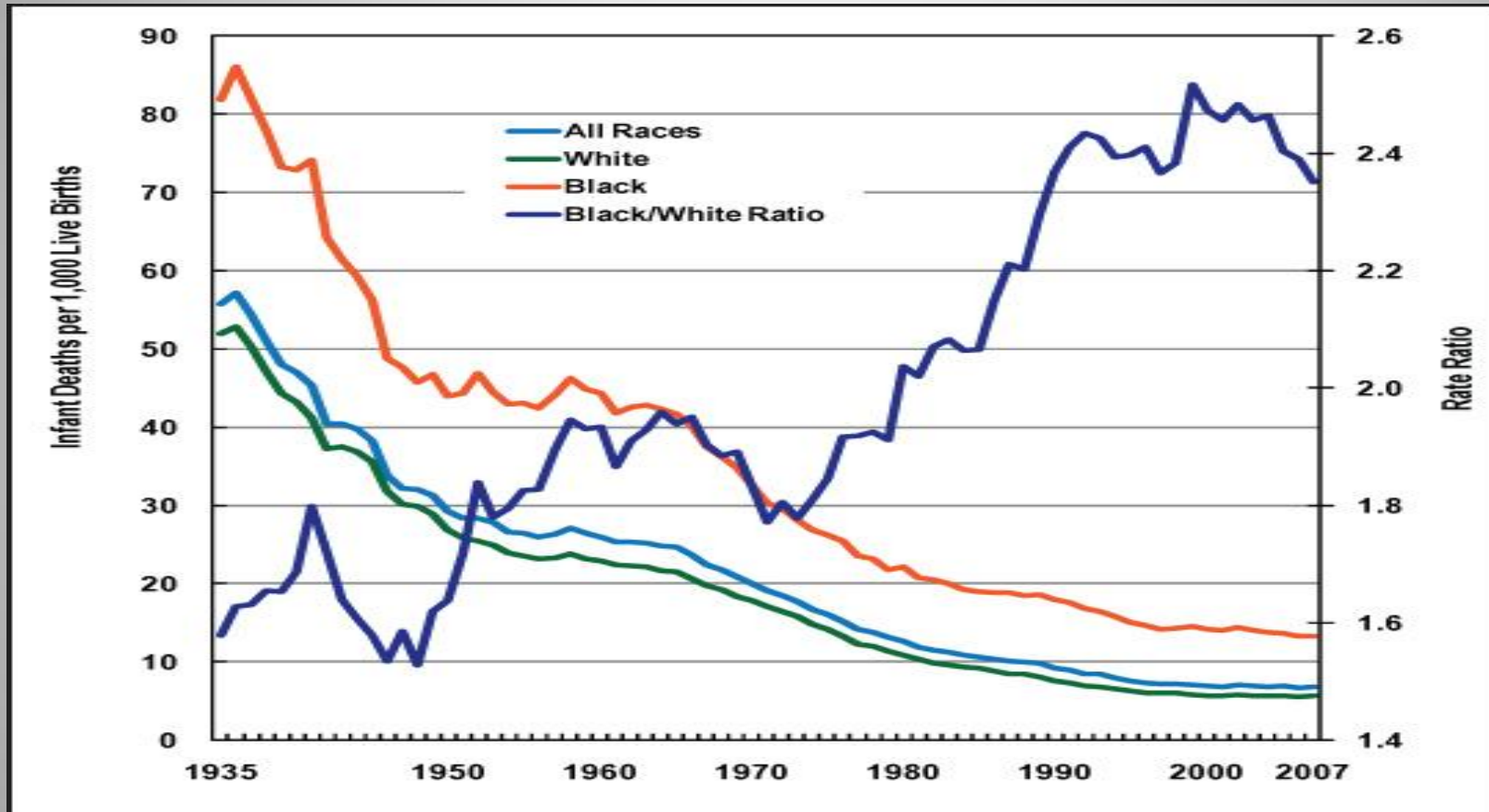
Braveman, P. et al. Pediatrics 2009;124:S163-S175

Approach to Health Disparities (IMR)

- ◆ For the last 150 years, infant mortality rate (IMR) has been one of the key health outcome measures
 - Deaths in the first year of life/1000 live births
 - Measure of health of a population, health care, public health
- ◆ 1970s-2000: solution to disparities – improve health care
 - Better/more accessible prenatal care
 - Better/more accessible neonatal care
- ◆ Governmental and private actions improve prenatal care rates and decrease disparities in **health care**



IMR – Black/White Disparity



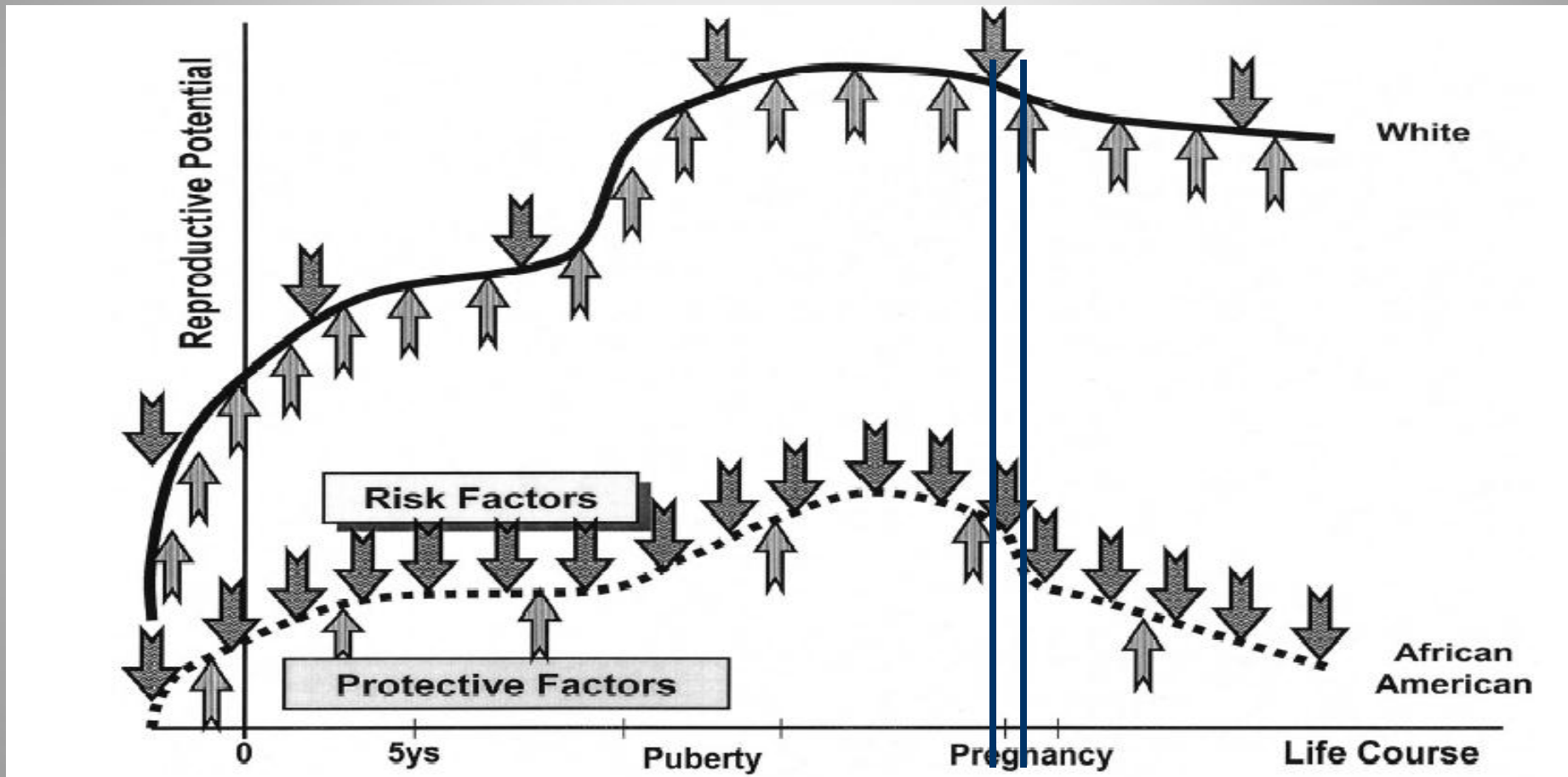
Title V 75 Anniversary Celebration. Infant Mortality in the United States, 1935-2007.
http://www.hrsa.gov/healthit/images/mchb_infantmortality_pub.pdf

Life Course Perspective (Birth Outcomes)

- ◆ “You can’t cure a lifetime of ills in nine months of a pregnancy” (M. Kotelchuck)
 - “or in 3 months in a NICU . . .” (we might add)

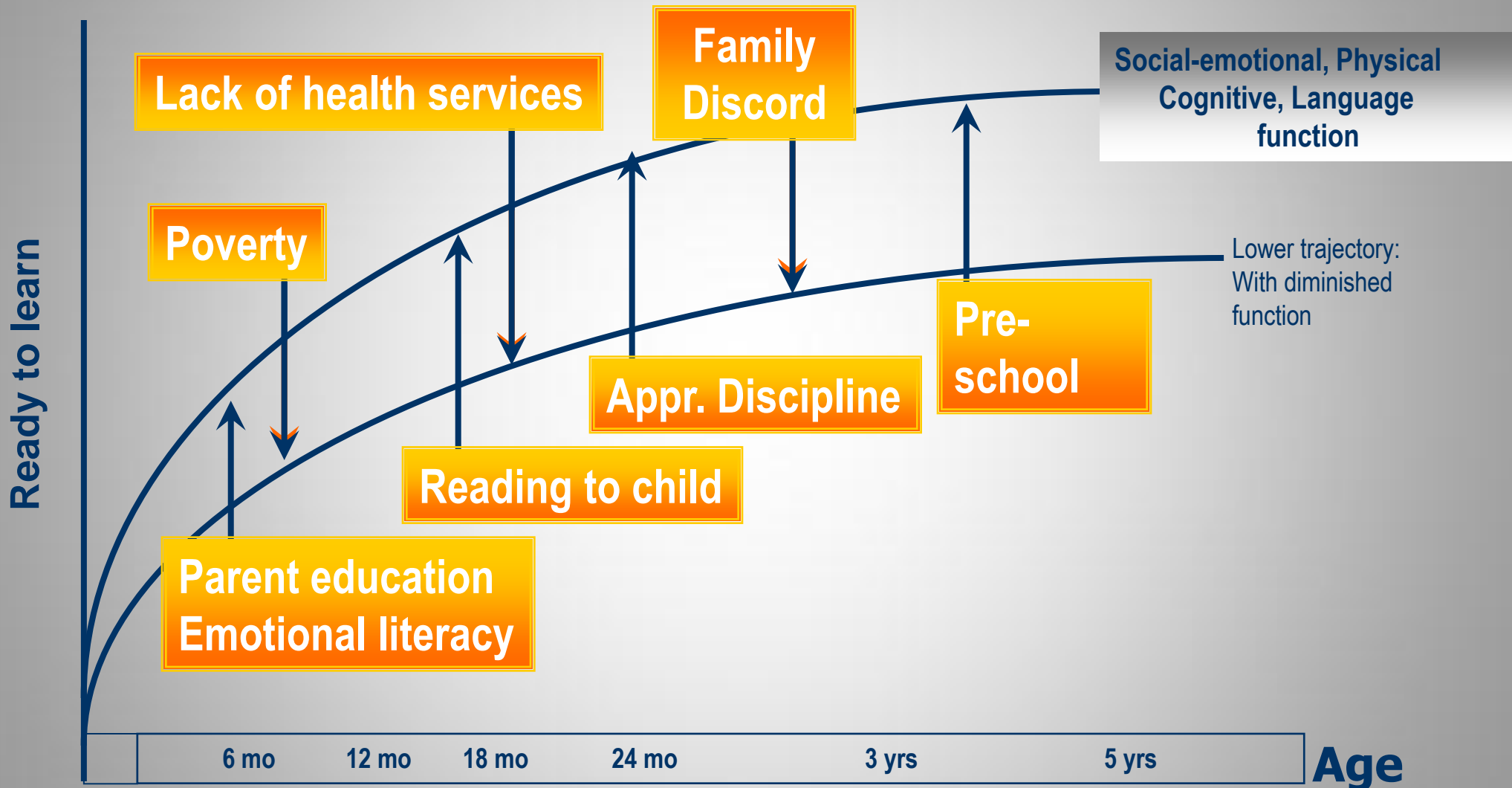


Life Course Perspective

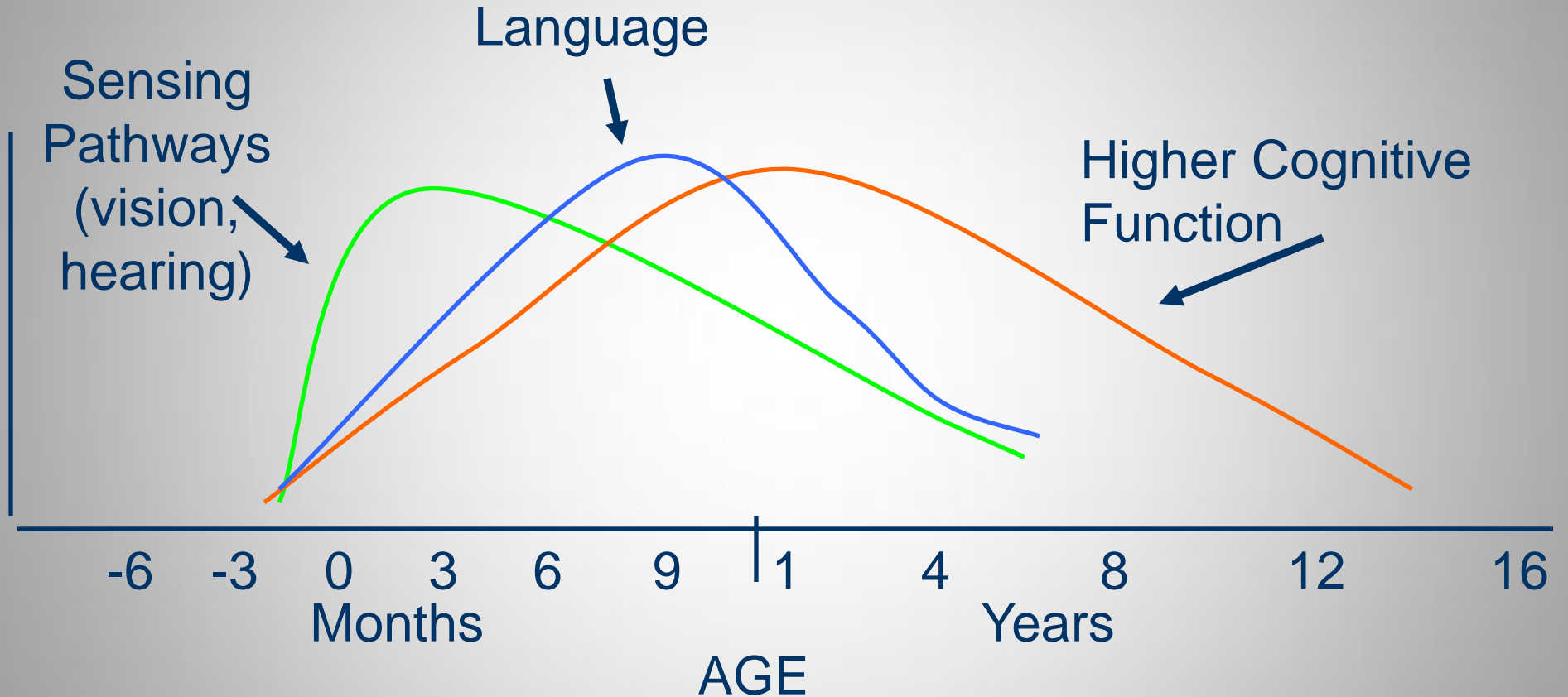


Lu MC, Halfon N. Racial and ethnic disparities in birth outcomes: life-course perspective. *Maternal Child Health J.* 2003;7:13-30.

“Cumulative Impact” (School Readiness)



“Early Programming” (Synapse Formation)



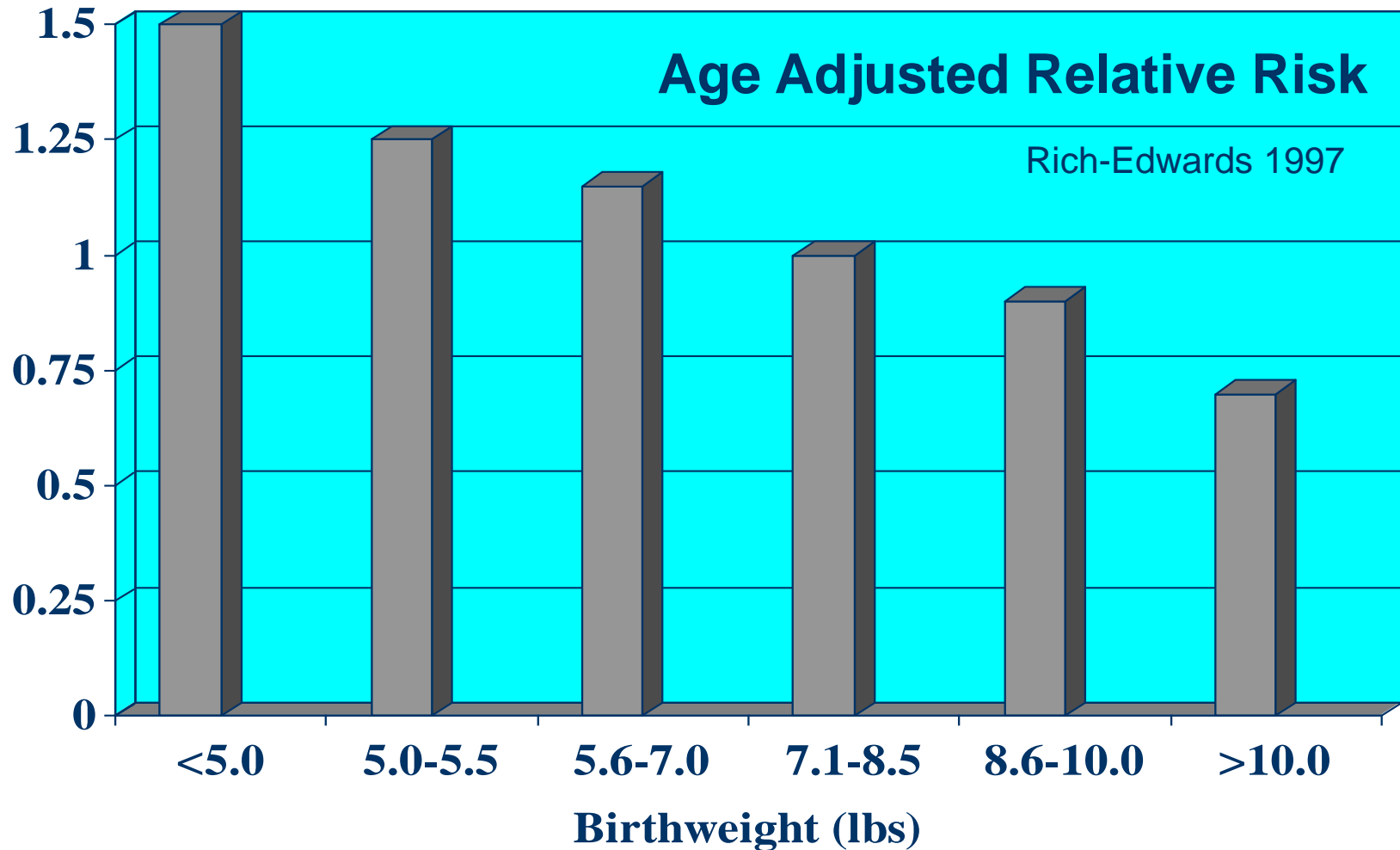
C. Nelson, in *From Neurons to Neighborhoods*, 2000.

One Experimental Example of Lifecourse Maternal Stress Causes LBW

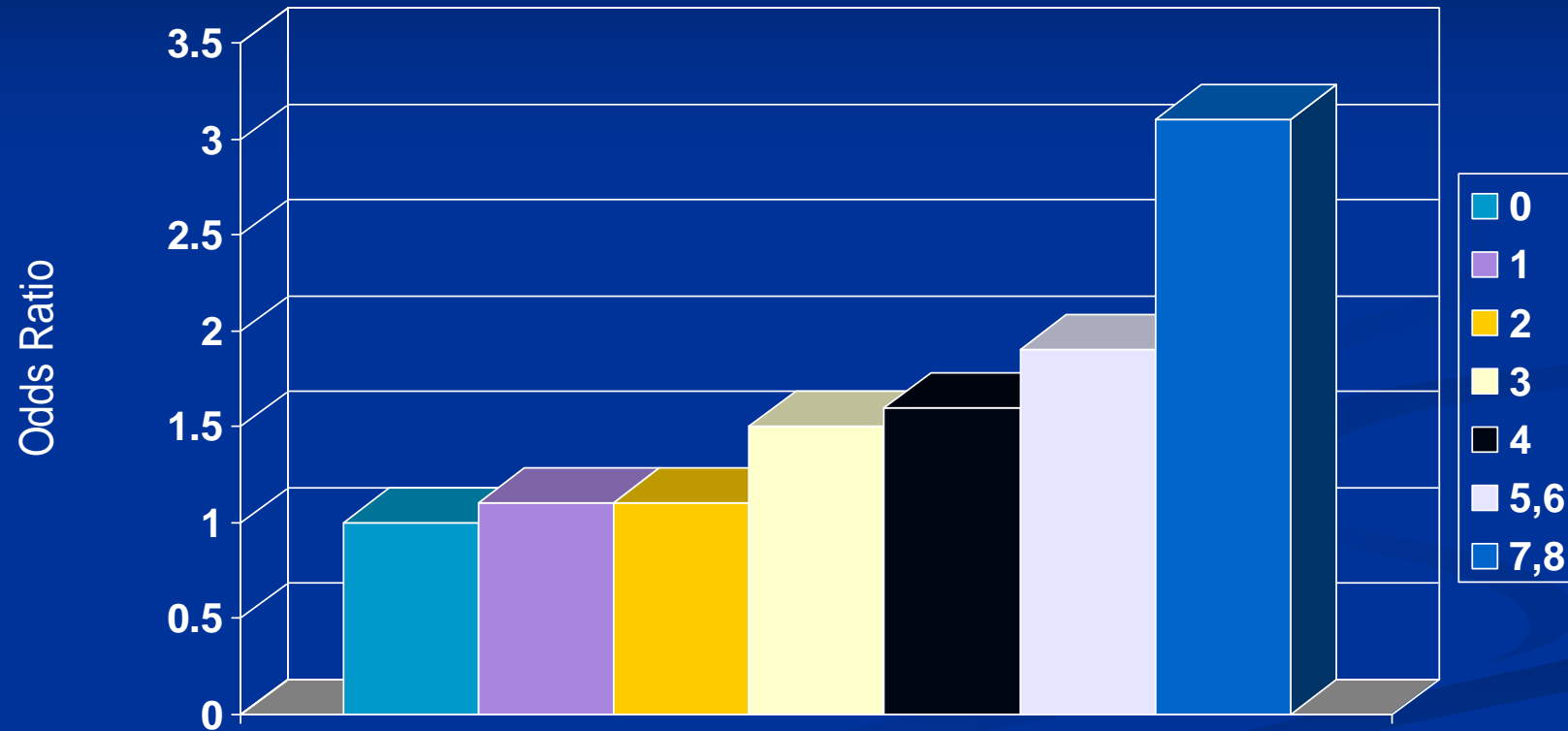
	Preterm Delivery					
	Spontaneous Preterm Labor		Spontaneous Preterm Labor			
			At 35–36 Weeks		At <35 Weeks	
	AOR	95% Confidence Interval	AOR	95% Confidence Interval	AOR	95% Confidence Interval
Epinephrine						
Waking						
Quartile 1 (referent)	1.0		1.0		1.0	
Quartile 2	0.8	0.4, 1.5	0.7	0.3, 1.5	1.3	0.3, 6.0
Quartile 3	1.0	0.5, 1.8	0.7	0.3, 1.4	2.6	0.7, 9.6
Quartile 4	1.8*	1.0, 3.2	1.3	0.7, 2.6	4.7*	1.4, 16.3
Bedtime						
Quartile 1 (referent)	1.0		1.0		1.0	
Quartile 2	0.9	0.4, 1.7	0.6	0.3, 1.4	2.2	0.6, 8.6
Quartile 3	1.0	0.5, 1.8	0.6	0.3, 1.3	3.3*	1.0, 11.4
Quartile 4	1.6	0.9, 2.9	1.4	0.7, 2.6	3.1	0.9, 11.1
Norepinephrine						
Waking						
Quartile 1 (referent)	1.0		1.0		1.0	
Quartile 2	2.8*	1.3, 6.0	2.9*	1.2, 7.4	2.6	0.7, 9.6
Quartile 3	2.6*	1.2, 5.6	2.8*	1.1, 6.9	2.2	0.6, 8.6
Quartile 4	3.7*	1.8, 7.9	3.6*	1.5, 9.0	3.9*	1.1, 13.7

Barker Hypothesis

Birth Weight and Coronary Heart Disease



Adverse childhood events and adult ischemic heart disease



Adverse Events



HRSA/MCHB Concept Paper

Rethinking MCH

The Life Course Model as an Organizing Framework

Prepared under contract by

Amy Fine and Milton Kotelchuck

October 2010



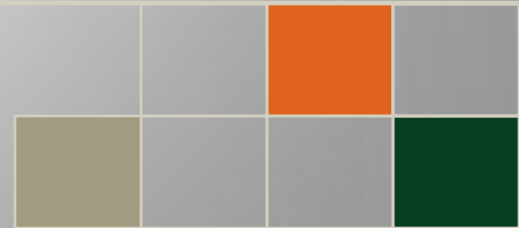
T2E2

- ◆ *Timeline* – “Today’s experiences and exposures influence tomorrow’s health.”
- ◆ *Timing* – “Health trajectories are particularly affected during critical or sensitive periods.”
- ◆ *Environment* -- “The broader community environment – biologic, physical, and social –strongly affects the capacity to be healthy.”
- ◆ *Equity* -- “While genetic make-up offers both protective and risk factors for disease conditions, inequality in health reflects more than genetics and personal choice.”



Pretest: Which Best Describes Your Program?

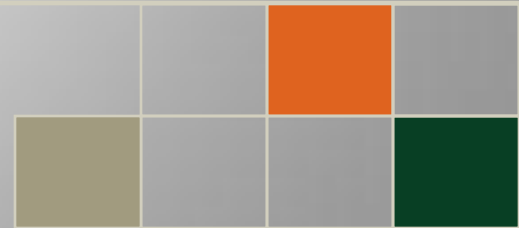
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New Bottles for Old Wine

Part 2. “Where we’re coming from”

- ◆ Some history of modern medicine
 - Medical model
 - Address deeper social issues (e.g. poverty)
- ◆ We’re well-positioned at LENDs and UCEDDs to teach and describe social determinants in a lifecourse perspective, but implementation . . .





Doctor's Office, late 1800s



Hospital Operating Suite, c. 1910

Royal Victoria Hospital

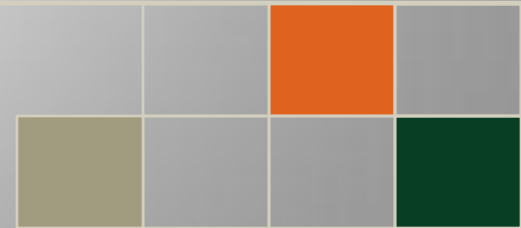
History of Medical Care in US

1850s

- ◆ General practice
 - ◆ Varied training
- ◆ Rural/local/isolated
- ◆ Low income/prestige
 - ◆ +/- State license
 - ◆ Pre-germ theory
- ◆ Eclectic therapies

1930s

- ◆ Specialization
- ◆ Standardized training
 - ◆ Urban/connected
- ◆ Reasonable income/prestige
 - ◆ License required
 - ◆ Germ theory
- ◆ **Health and Education Professionals**



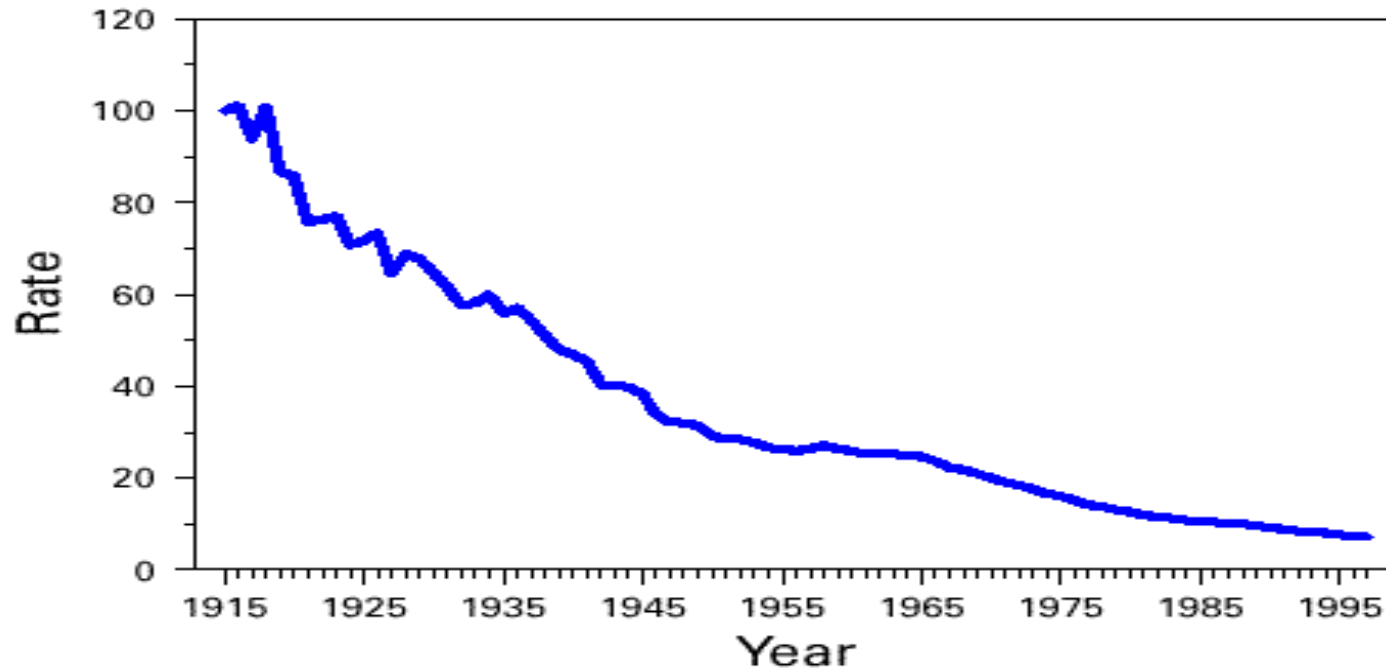
Social Determinants of Health

- ◆ Two thousand years (up to 1850s)
 - Health as “balance” in a person’s body & beyond
 - Physician investigated patient’s environment & habits
 - No clear distinction between public & personal health
- ◆ By 1930s
 - Illness as disruption of the body by invading organism
 - Clinicians treat individual patients with med/surgery
 - Public health professionals: epidemics, environment



Infant Mortality (US Bureau of Statistics)

FIGURE 1. Infant mortality rate,* by year — United States, 1915–1997



*Per 1000 live births.

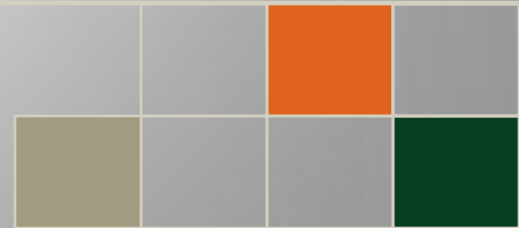


Faith in Science: Polio Vaccine

- ◆ NY Times, July 11, 1957
 - “MASS VACCINATION CUTS POLIO'S TOLL”

“Mass vaccination with Salk vaccine has sharply reduced the number of paralytic polio cases in the city and state this year, health officials reported yesterday.”
- ◆ Time Magazine, Aug. 12, 1957
 - “POLIO DECLINE”

“Polio is declining sharply in most of the U.S. for the second year, with abundant evidence that much of the improvement is due to the Salk vaccine.”



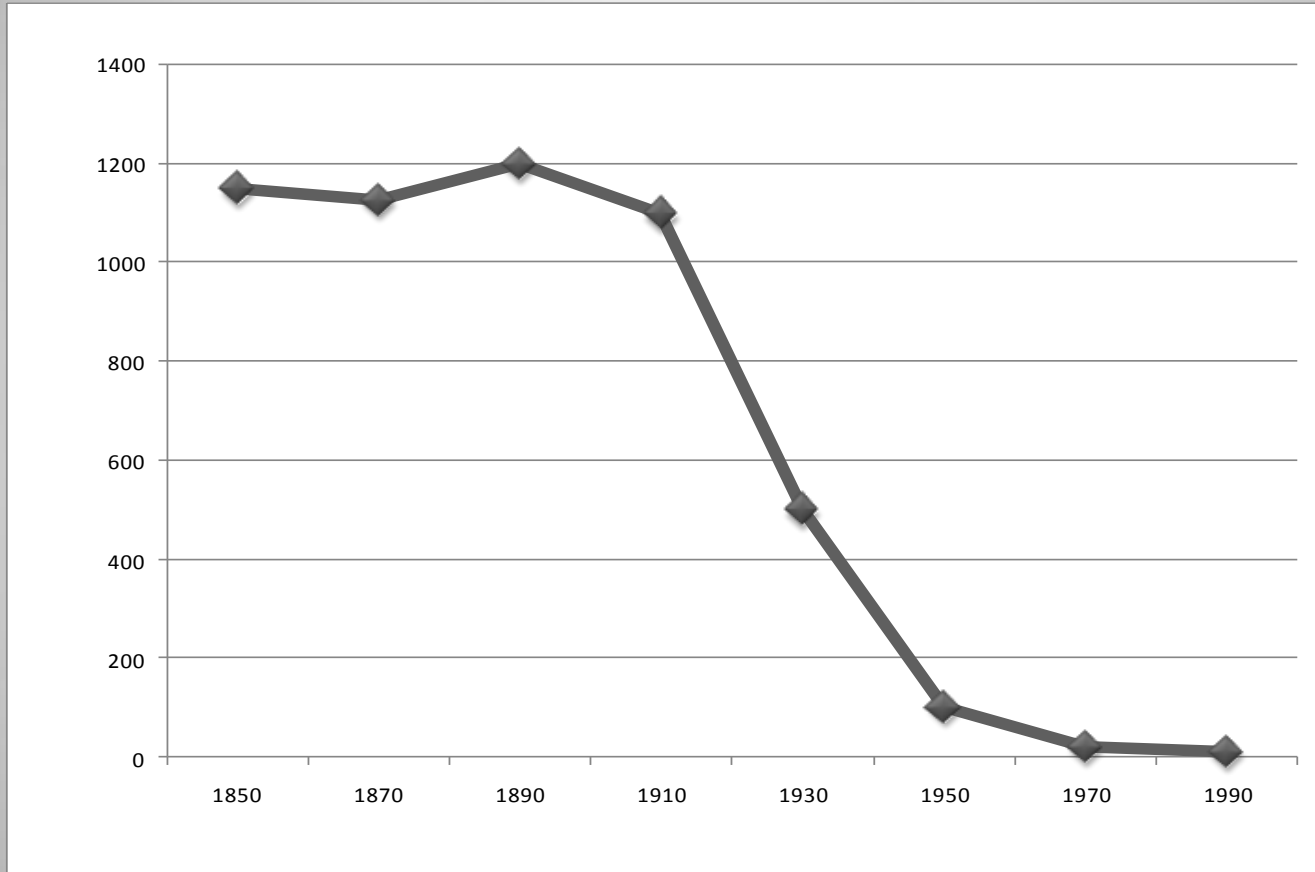
“Inward Vision; Outward Glance”

- The best way to improve health is to provide technologically sophisticated interventions to patients in the office, in the operating suite, or at the bedside of a modern hospital
- “Technological imperative in medicine”
 - Machines, vaccines, antibiotics, surgery, new drugs
 - The “Medical Model”

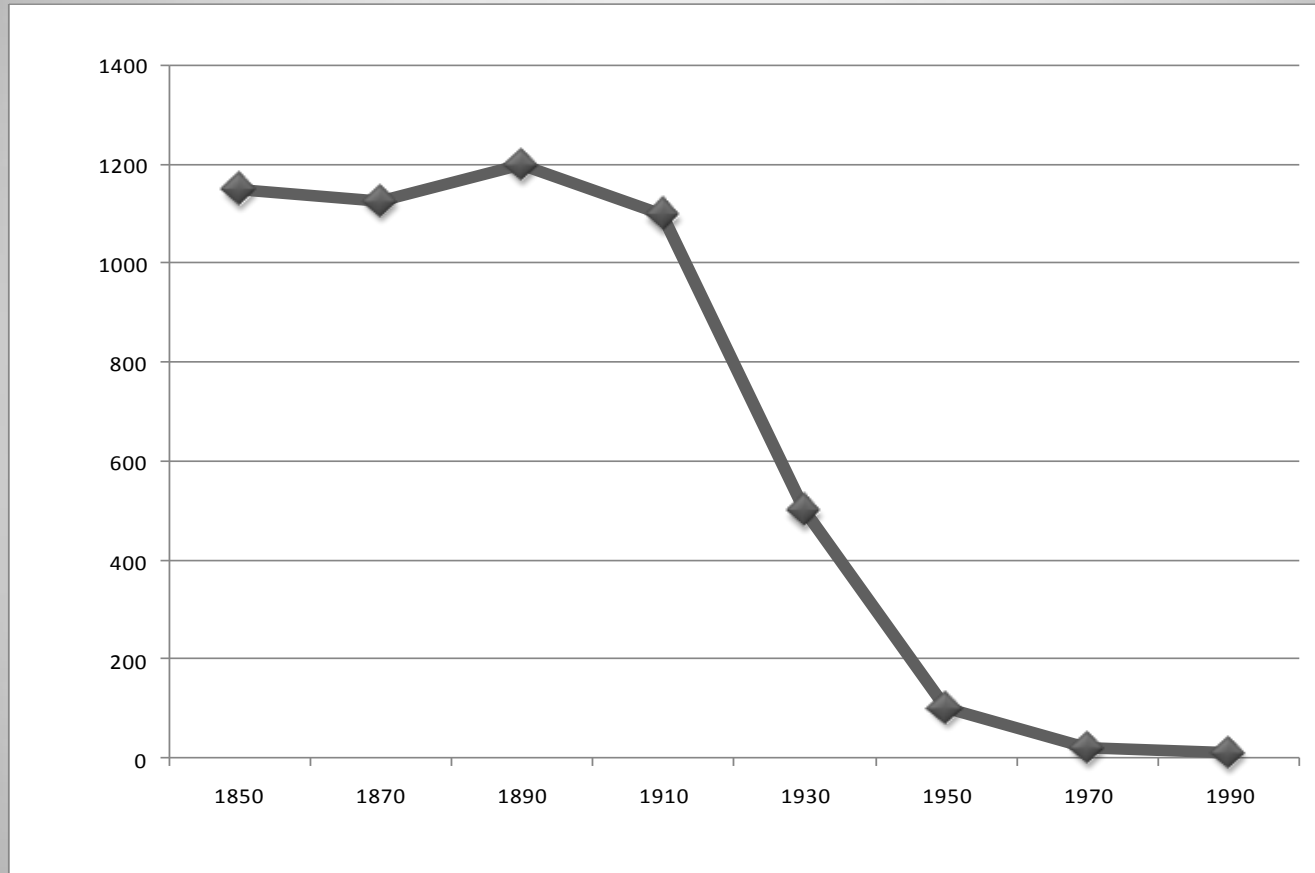
Charles Rosenberg



US Measles Mortality



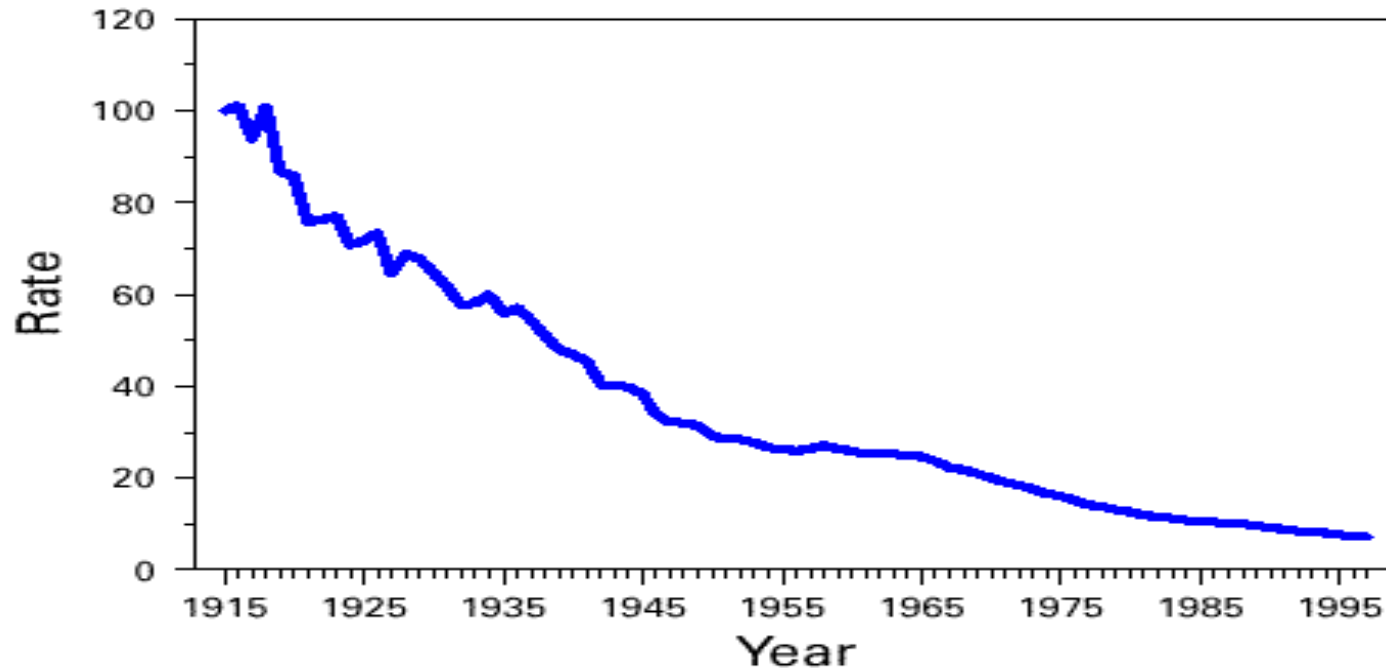
What Year was the Measles Vaccine Widely Available?



Decline in child mortality precedes

- Antibiotics (1940s and 50s)
- Vaccines (1950s and 60s)

FIGURE 1. Infant mortality rate,* by year — United States, 1915–1997



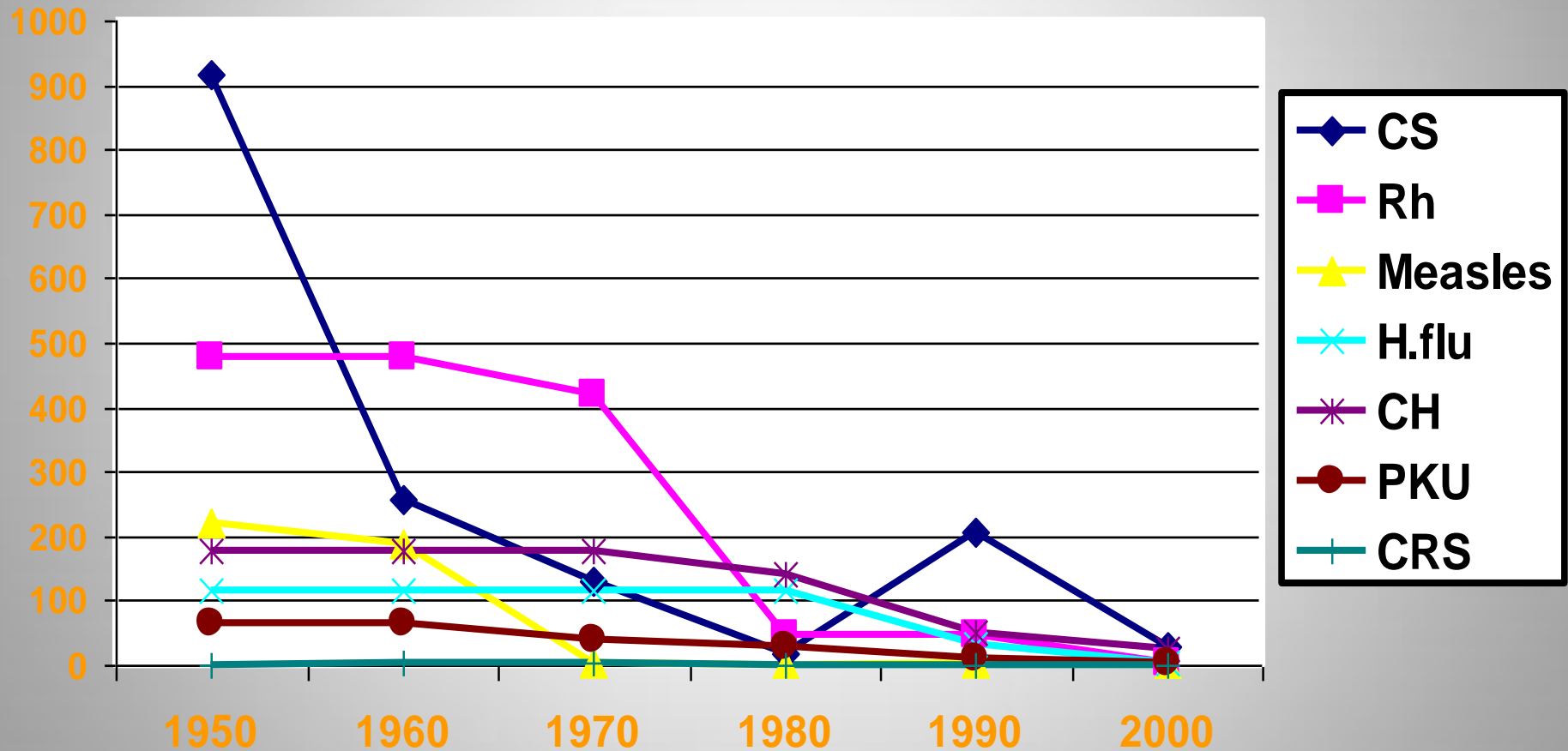
*Per 1000 live births.



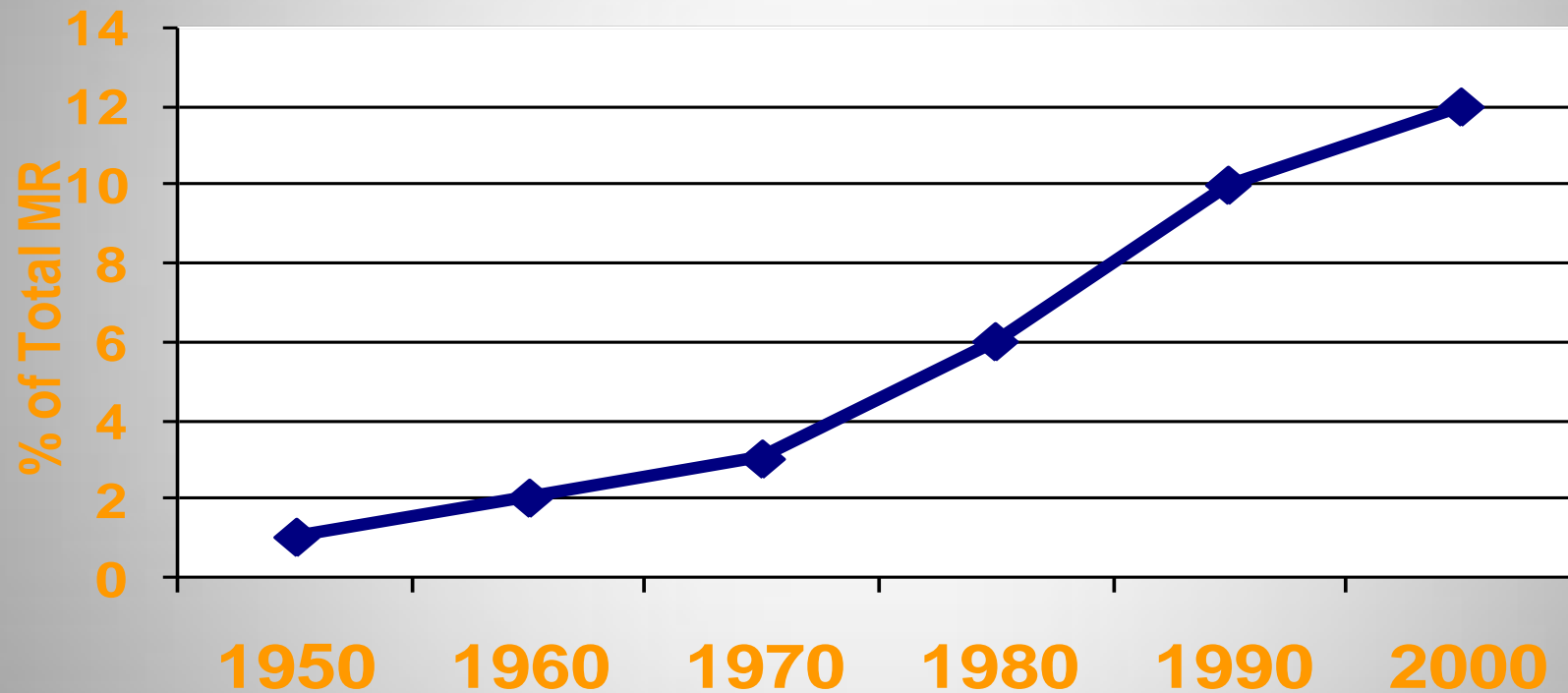
Medical Model: Preventing Intellectual Disability

Prevalence ID per 1 million births

Brosco, Arch. Peds., 2006

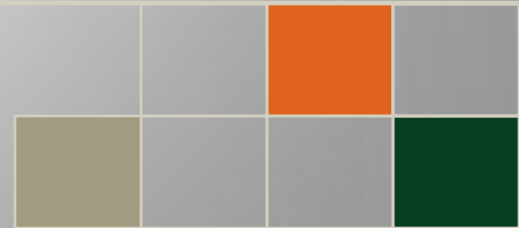


Improvements in Prenatal and Neonatal Care ID Associated with Low Birth Weight



“Social Determinants” of ID

- ◆ Discrimination
- ◆ Poverty
- ◆ Psychosocial deprivation
- ◆ Malnutrition
- ◆ Inferior educational opportunities
- ◆ Poor housing
- ◆ Lead exposure
- ◆ Head injury

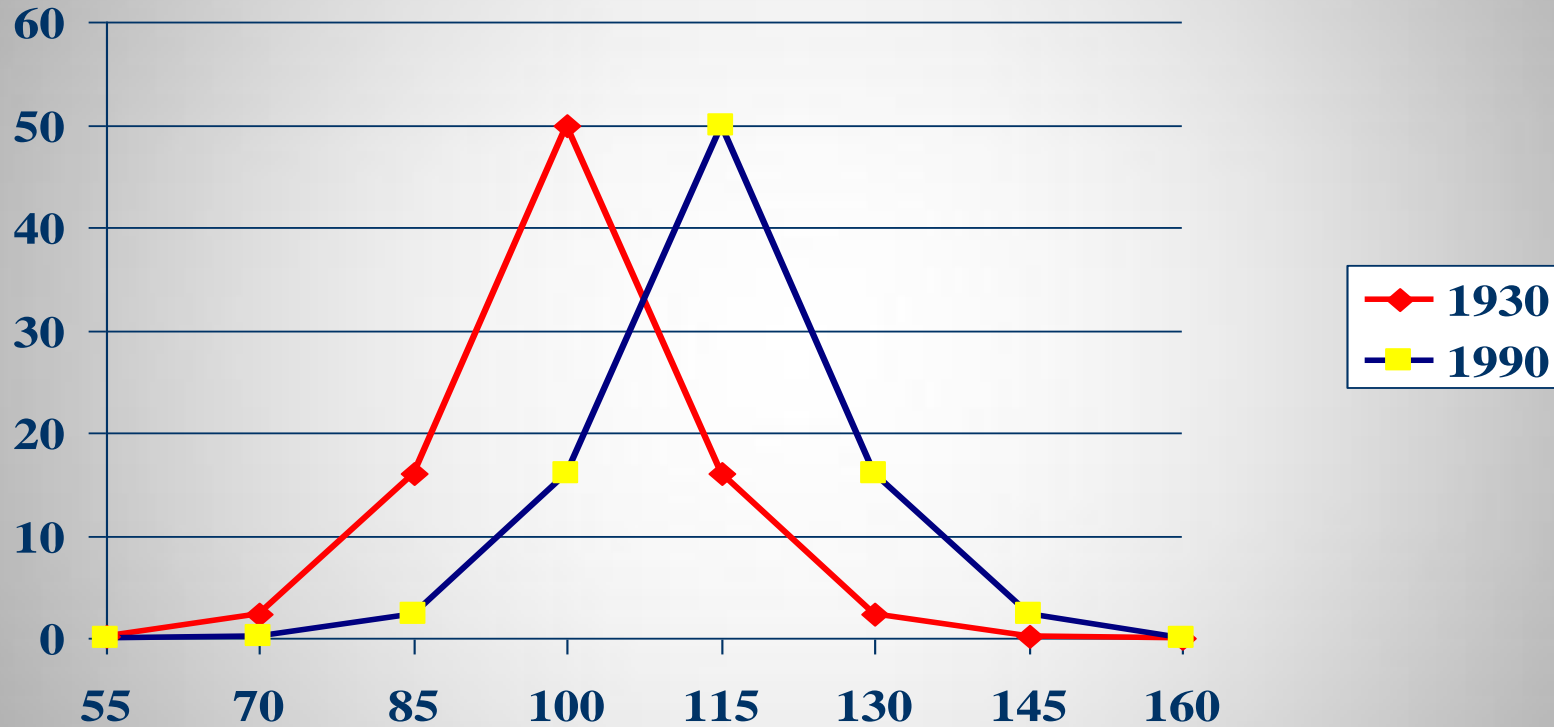


Population Health Interventions

- ◆ IDEA (education; deinstitutionalization)
- ◆ Civil rights legislation and judicial decisions
- ◆ Medicaid/Medicare
- ◆ Head Start
- ◆ WIC (nutrition for women, infants, children)
- ◆ TANF (AFDC)
- ◆ School lunch program
- ◆ HUD/MCHB programs (lead abatement)

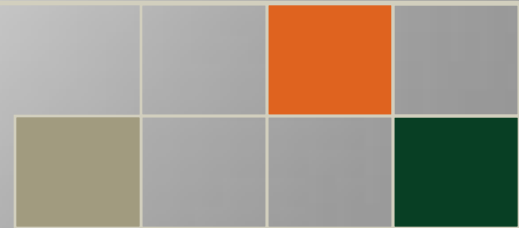


Flynn Effect Impact on Prevalence of ID



So What's the Problem?

- ◆ Medical model is deeply embedded
 - We may understand that environment and behavior affect health, but look at our health care system
 - Payment schemes, institutions, diagnoses, training all focus on providing discrete services to individuals





Hospital Operating Suite, c. 1910



Well baby clinic, ca. 1930

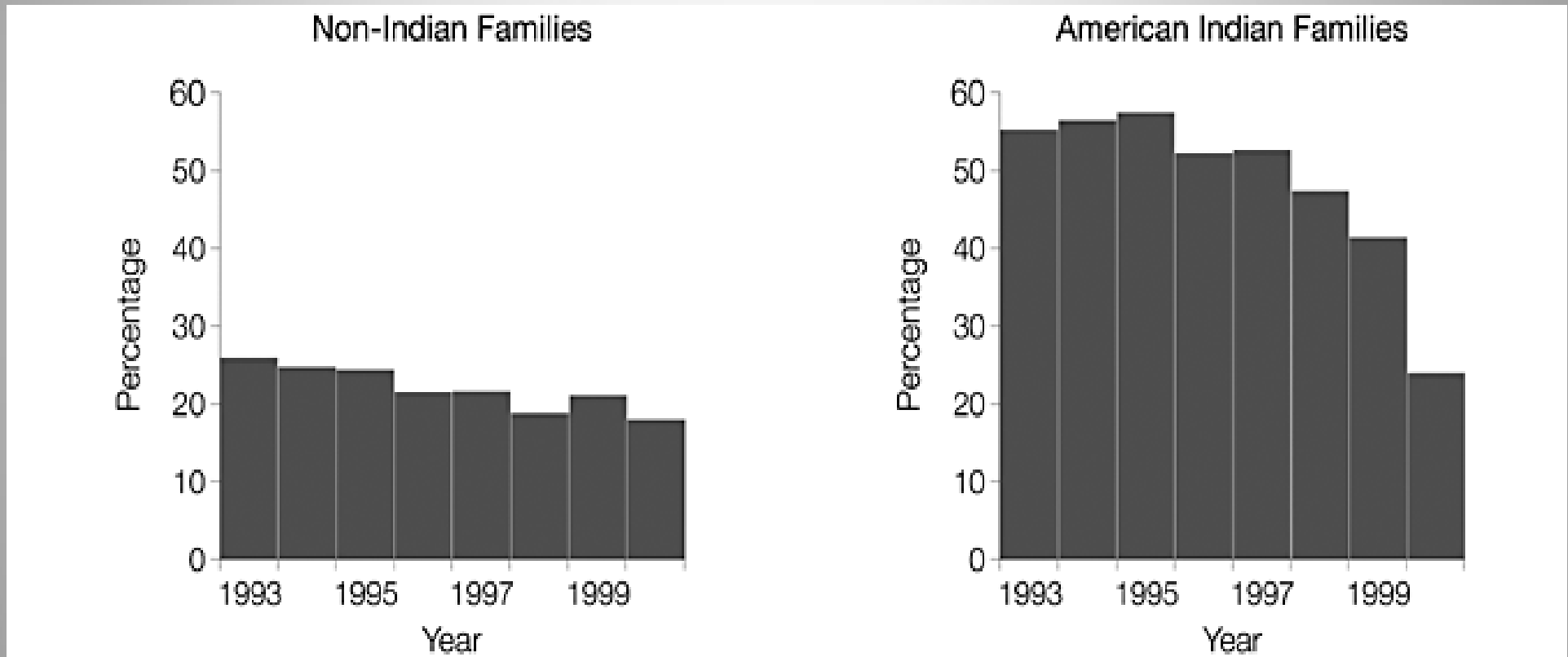
(Hamilton, Public Health Nursing Branch)

Even Bigger Problem

- ◆ Social justice
- ◆ If social determinants are critical, what are we going to do about poverty, discrimination, structural inequities in our society?
- ◆ US has long history of deep ambivalence about directly addressing social and economic inequities
 - Does reducing poverty really make a difference?



Non-Indian and Indian Families Below Poverty Line



Costello, E. J. et al. JAMA 2003;290:2023-2029



Behavioral Symptoms Before & After the Casino

Table 2. Mean Annual Frequency Scores of Behavioral Psychiatric Symptoms of American Indian Children Averaged Separately Over the 4-Year Period Before and After the Casino Opened

	Before Casino	After Casino	Contrast Before vs After Casino, OR (95% CI)*
Persistently poor, mean (SD)	2.41 (2.69)	2.91 (3.80)	0.80 (0.64-1.01), <i>P</i> = .06
Ex-poor, mean (SD)	2.25 (2.65)	1.34 (2.07)	1.66 (0.97-2.83), <i>P</i> = .07
Never poor, mean (SD)	1.30 (2.11)	1.37 (1.93)	0.95 (0.62-1.44), <i>P</i> = .80
Contrast persistently vs ex-poor*			
OR (95% CI)	1.07 (0.70-1.64)	2.21 (1.24-3.95)	
<i>P</i> value	.75	.007	
Contrast persistently vs never poor*			
OR (95% CI)	1.86 (1.25-2.78)	2.19 (1.47-3.28)	
<i>P</i> value	.002	<.001	
Contrast ex- vs never poor*			
OR (95% CI)	1.73 (1.03-2.91)	0.99 (0.53-1.86)	
<i>P</i> value	.04	.98	

Abbreviations: CI, confidence interval; OR, odds ratio.

*See Table 1 for explanation.

Health Equity

Where systematic differences in health are judged to be avoidable by reasonable action they are, quite simply, unfair. It is this that we label health inequity.

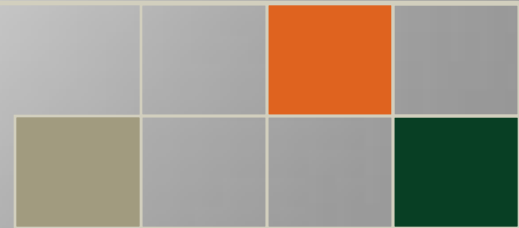
Putting right these inequities – the huge and remediable differences in health between and within countries – is a matter of social justice.

**World Health Organization
Commission on Social Determinants of Health
http://www.who.int/social_determinants/en/**



RWJF Commission to Build a Healthier America (AmJPrevMed 2011)

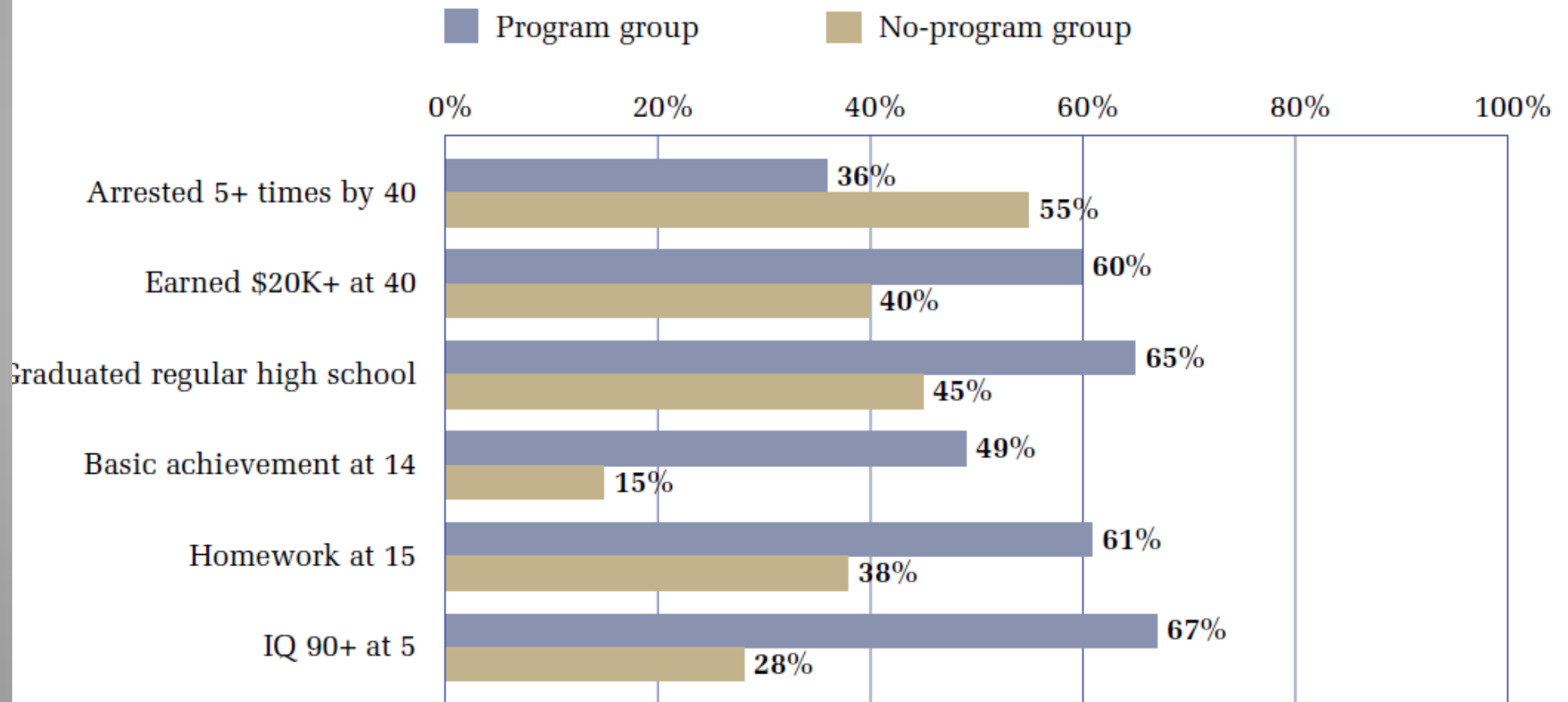
1. Ensure that all children have high-quality early childhood developmental support (child care, education, etc.)
2. Fund and design nutrition programs (e.g. WIC and SNAP) to meet the needs of hungry families for nutritious food.
3. Create public–private partnerships to open and sustain full-service grocery stores in all communities.
4. Feed children only healthy foods in schools.
5. Require all schools (K–12) to include time for all children to be physically active every day.



Early Childhood Education

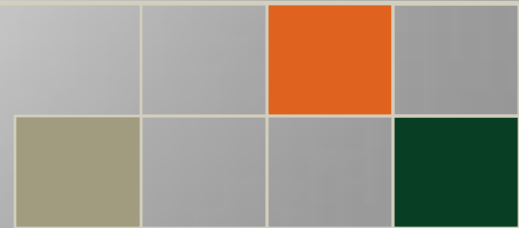
www.highscope.org

Figure 1
Major Findings: High/Scope Perry Preschool Study at 40



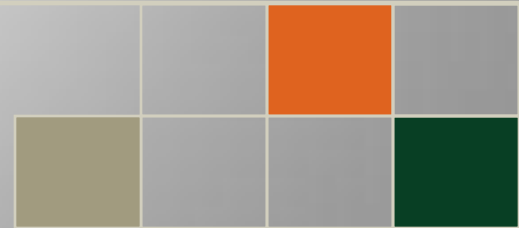
RWJF Commission to Build a Healthier America (AmJPrevMed 2011)

6. Become a smoke-free nation.
7. Create healthy community demonstrations to evaluate the effects of health-promoting policies and programs.
8. Develop a health impact rating for housing & infrastructure projects; provide incentives for projects to earn the rating.
9. Integrate safety and wellness into every aspect of community life.
10. Ensure that decision makers have evidence they need to build health into public and private policies and practices.



POST-TEST: What Do We Do?

- ◆ How should social determinants of health affect your practice?
- ◆ How should social determinants of health affect your training?
 - START TYPING ...



What Do We Do? Jeff's 2 cents

- ◆ In many ways, we already do “life course” and “social determinants,” but need to be explicit
- ◆ Health care professionals will always have a specific role with individuals: “health care”
- ◆ Increased role in systems change (esp trainees)
 - Work harder at new community partnerships
 - Will health care reform (ACA) help?
 - Imagine you are paid not “fee for service,” but based on the health outcomes of your local community . . .

