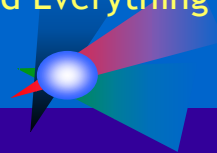




Health
and
Everything

Stemming the Demand Tide Through Population Health



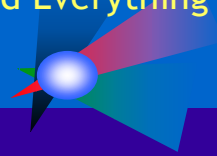
Definition of Supply

- **Supply:** The willingness and ability to sell a range of quantities of a good at a range of prices, during a given time period
- An increase in supply with constant demand will decrease prices.
- A decrease in supply with constant demand D will increase prices.



Definition of Demand

- **Demand:** The willingness and ability to buy a range of quantities of a good at a range of prices, during a given time period.
- An increase in demand with constant supply will increase prices.
- A decrease in demand with constant supply will decrease prices.



Definition of Equilibrium

- **Equilibrium:** The state that exists when opposing forces exactly offset each other and there is no inherent tendency for change.
- In cases of **surplus** as market price goes down, the quantity demanded will go up and the quantity supplied will go down until the quantity demanded equals the quantity supplied, at which point the surplus is eliminated and a market equilibrium is established.
- In cases of **shortfall** as market price goes up demand goes down, until the quantity supplied equals the quantity demanded, at which point the shortfall is eliminated and a market equilibrium is established.



In Health Care

- The supply demand laws do not seem to work in the same way
 - “Health services are supply driven”
 - “There is an infinite demand for health services”



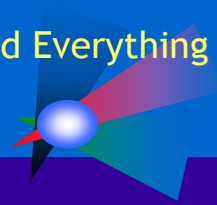
Supply applied to Doctor Visits

- An **increase** in the number of doctors in an area with **constant** population will **decrease** visits per doctor.
- A **decrease** in the number of doctors in an area with **constant** population will **increase** visits per doctors.



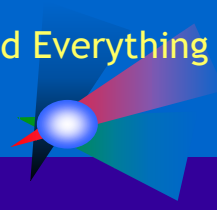
Supply applied to Doctor Visits

- In the case of an increase in the number of doctors in an area with constant population demand, the number of visits per doctor does not tend to change.
- This is true independent of how doctors are paid.
- How can this be?



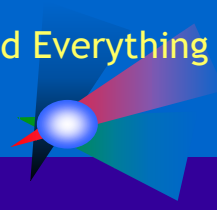
Thresholds

- A medical rule of practice:
 - Provide the best possible care for your patients using all available resources.
- Available resources change
 - The medical rule of supply
 - If more resources are available and their use can improve care, use them.
 - If fewer resources are available and their shortfall does not substantially damage care, withhold them.
- Glouberman's Law:
 - The threshold of intervention adjusts to use all available resources



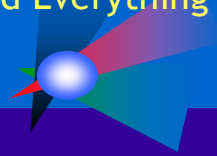
Three Cases

- 1. Doctor has fewer patients because of increased supply of doctors
- 2. Steady State
- 3. Doctor has more patients because of decreased supply of doctors



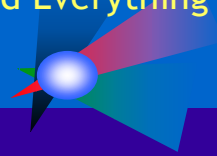
Fewer Patients

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “Come back and see me in 2 weeks”
- This assures that no symptoms remain and that nothing else was masked by the bronchitis.
- Low threshold of intervention because visits are available



Steady State

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “See me if this condition persists after 2 weeks”
- This assures that patient is seen if condition continues and that medication can be adjusted.
- Medium threshold of intervention



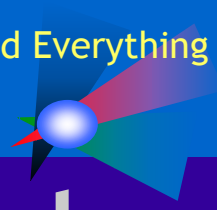
More Patients

- Patient has severe bronchitis
- Doctor examines, diagnoses, prescribes
- “Call for a new prescription if this persists after 2 weeks”
- This assures that medication is continued and if patient does not improve over another period of time she will be seen.
- High threshold of intervention



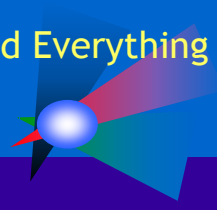
Supply Reduction Masquerades as Demand Reduction

- HMOs in the US gave doctors bonuses if they reduced patient demand.
- The easiest way to reduce such demand was to make it more difficult for patients to see them or to raise the threshold of intervention.
- Is this reducing demand or supply?.
- The end data shows fewer patient visits



Supply Increase Spurs Demand

- Scope of health care increases
 - Far more alternate therapies
 - Technologies to defer aging
 - Introduction of pharma-nutrition
- More effective drugs
- More accurate diagnostic technologies
- More innovative surgical interventions
- All result in new demands



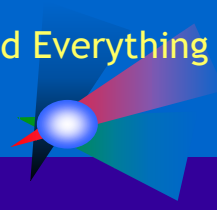
Other Examples

- More obstetricians = more C-sections
- More general surgeons = more general surgery
- More Diagnostic Technology = more diagnostic interventions
- More services = Greater use of services
- Corollary to Glouberman's Law
 - Increasing supply of health services increases demand



Telehealth and Demand Reduction

- Telehealth very popular in UK
 - Called “NHS Direct”
 - Big Uptake
 - Little reduction in use of emergency rooms
 - As emergency rooms become less crowded and the wait is shorter, more people come to them. (The supply demand of equilibrium)

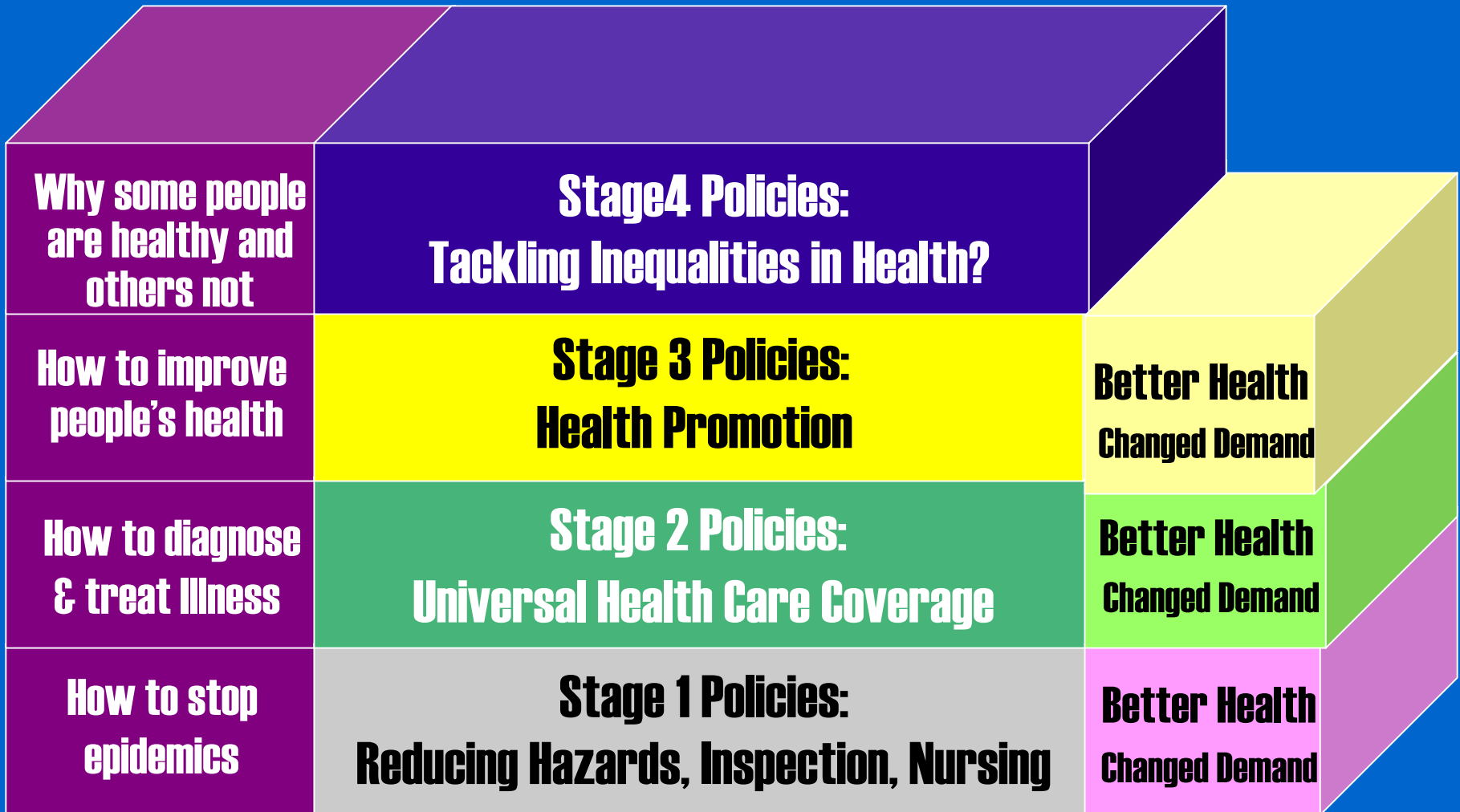


Ideas about Health

- **Traditional Public Health:**
 - How do we keep people healthy?
- **Universal Coverage (medicare):**
 - How do we diagnose and treat?
- **Health Promotion:**
 - How do we improve people's health?
- **Inequalities in Health:**
 - Why are some people healthy and others not?



Previous Efforts at Population Based Demand Reduction





Every Idea Promised Improvements

- This idea will improve health of the population
 - Public Health: Eliminating epidemics better health
 - Medicare: More people treated better health
 - **Health Promotion:** Better Lifestyle better health
- Improved Health Will Reduce Demand
 - Public Health: Fewer crises less demand
 - Medicare: Fewer sick people less demand
 - **Health Promotion:** More self responsibility reduces demand



Every Idea Changed the Shape of Demand

- Healthier people demand different things
 - **Public Health:** Emergence of treatable cases
 - World War I exposes new health problems
 - **Medicare:** More hospitals and doctors
 - Increased elective interventions
 - **Health Promotion:** Lifestyles change
 - More demand for sports medicine etc

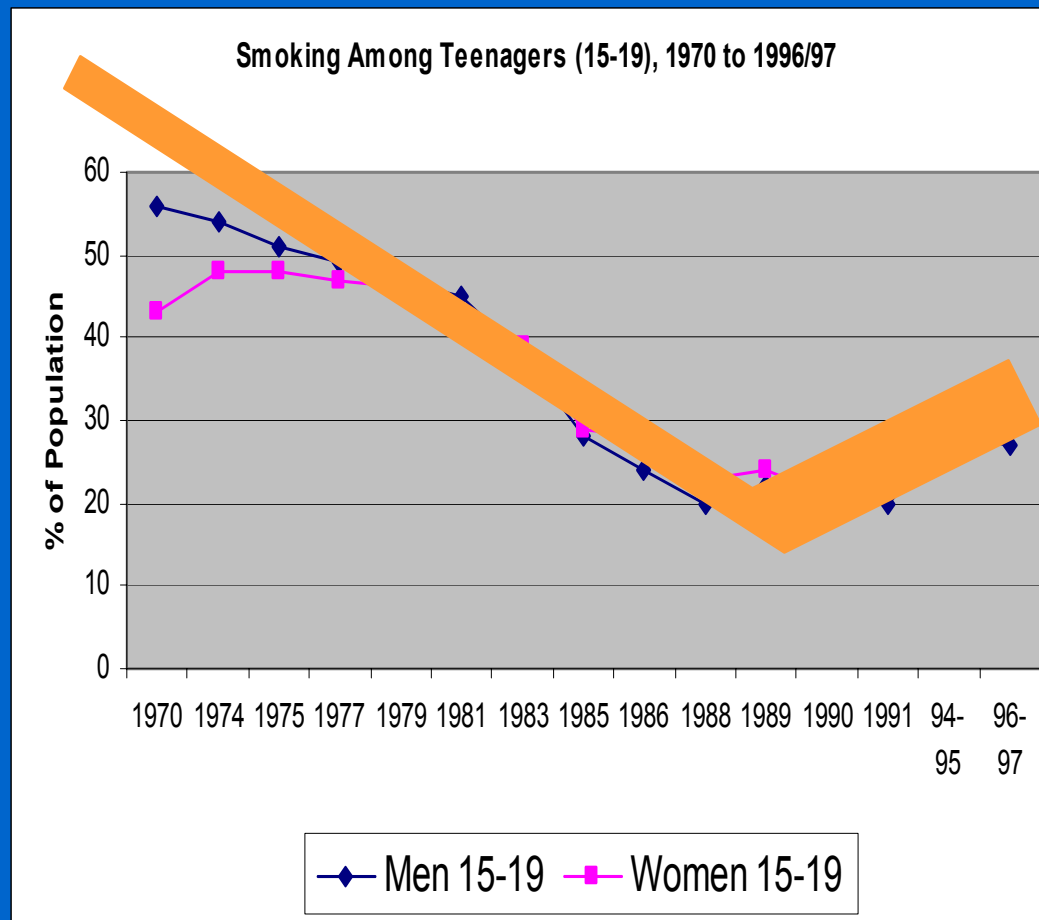


Unexpected Shape of Demand Emerges as Health Improves

- Longevity increase means more elder care
- Health emerges as a substitute for religion
- Want/Need Distinction changes in new ways
- Threshold of intervention changes
- Health gains market share
 - “Health inflation” is “increased market share”
 - Fast growing sector *pace* high tech
- Unexpected changes in health status
 - Better food and more of it
 - More exercise and drive to the gym

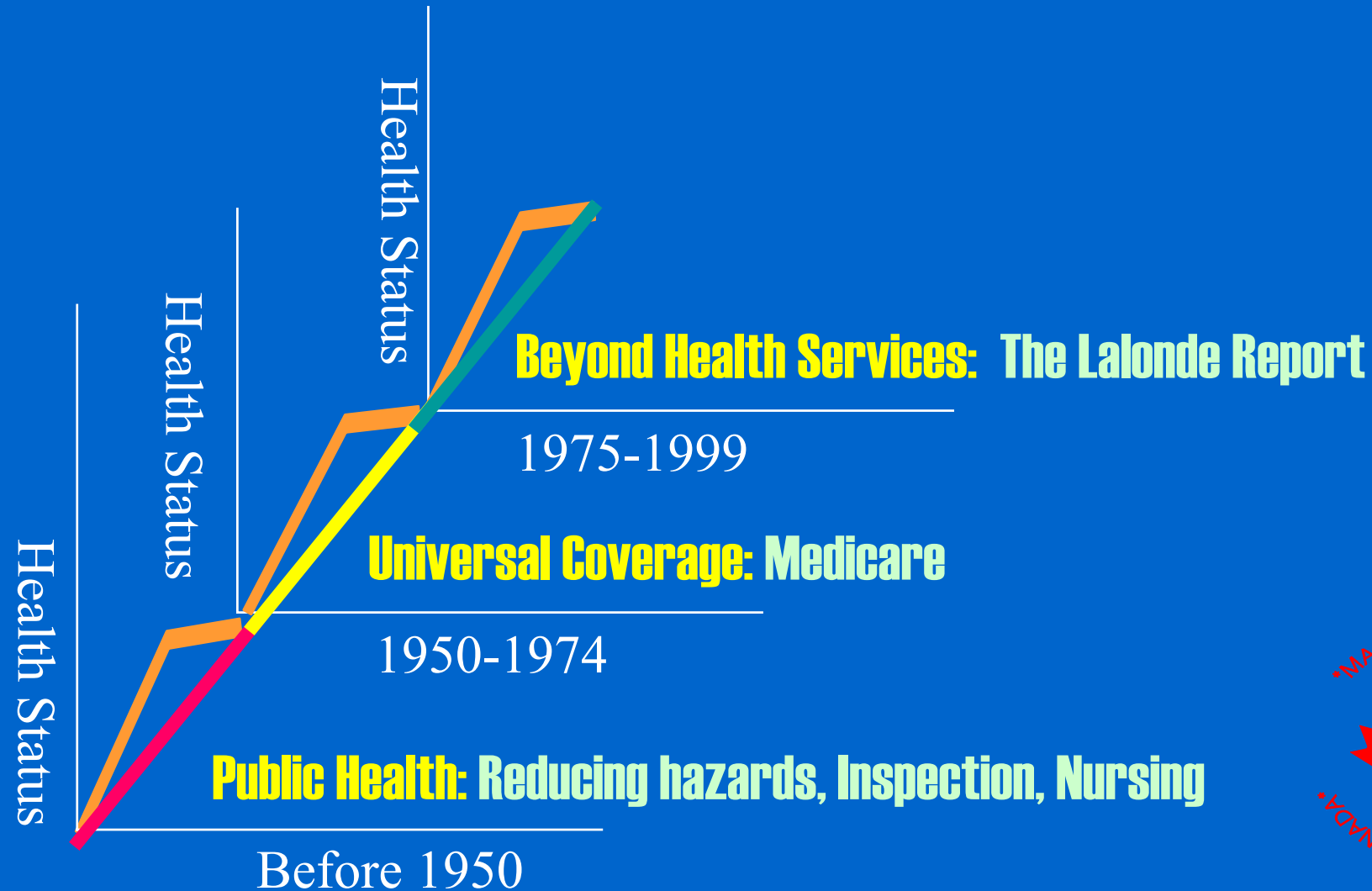


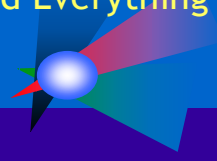
An Example of the Hockey Stick





Three Big Ideas and Health



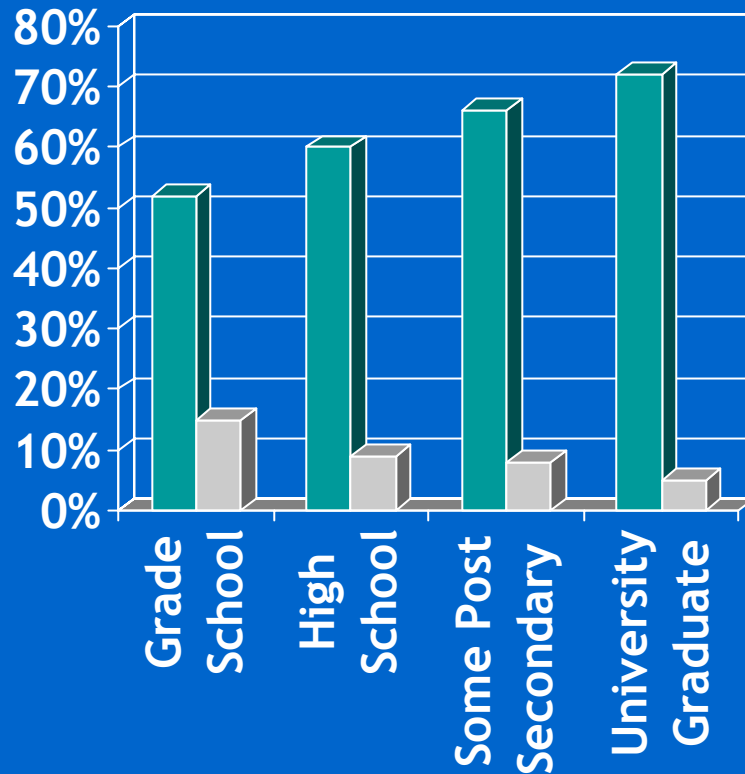


The Population Health Idea

- Health Inequality Exists
- It follows a gradient
- And correlates with socioeconomic status
 - Education
 - Income
 - Class
 - Race



Self-rated Health Status



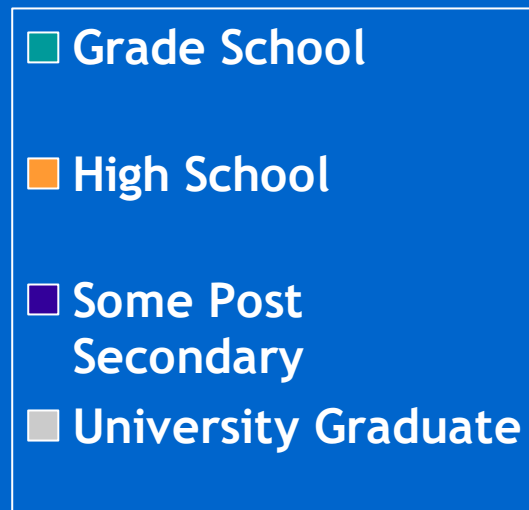
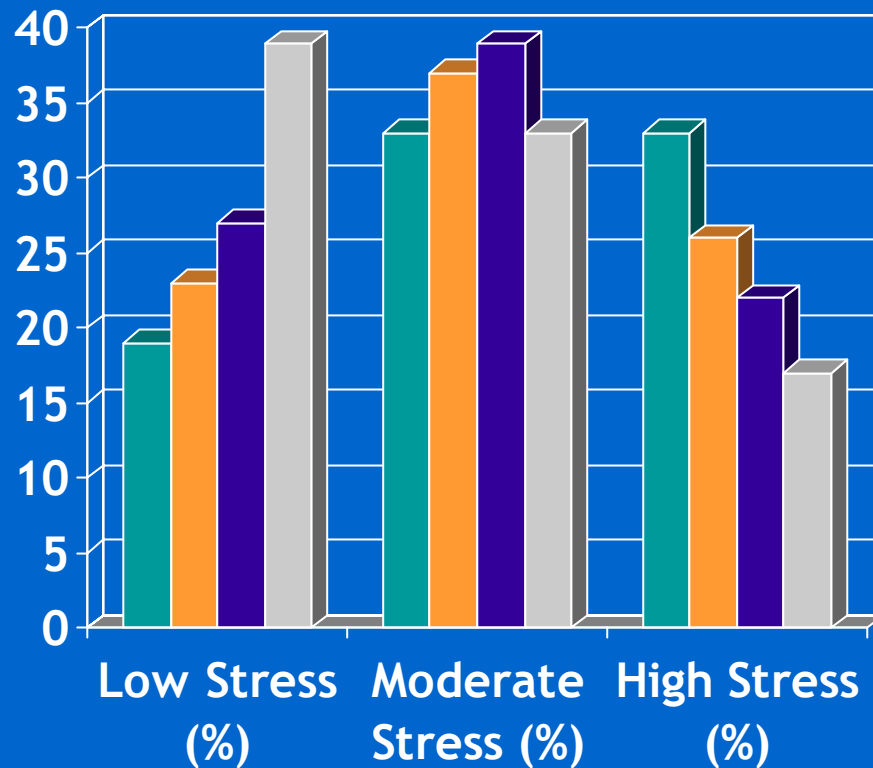
Self-rated health status
by
level of education

■ Excellent/Very Good
■ Fair/Poor

Data from: *Report
on the Health of Canadians*
Sept 1996



Chronic stress by level of education

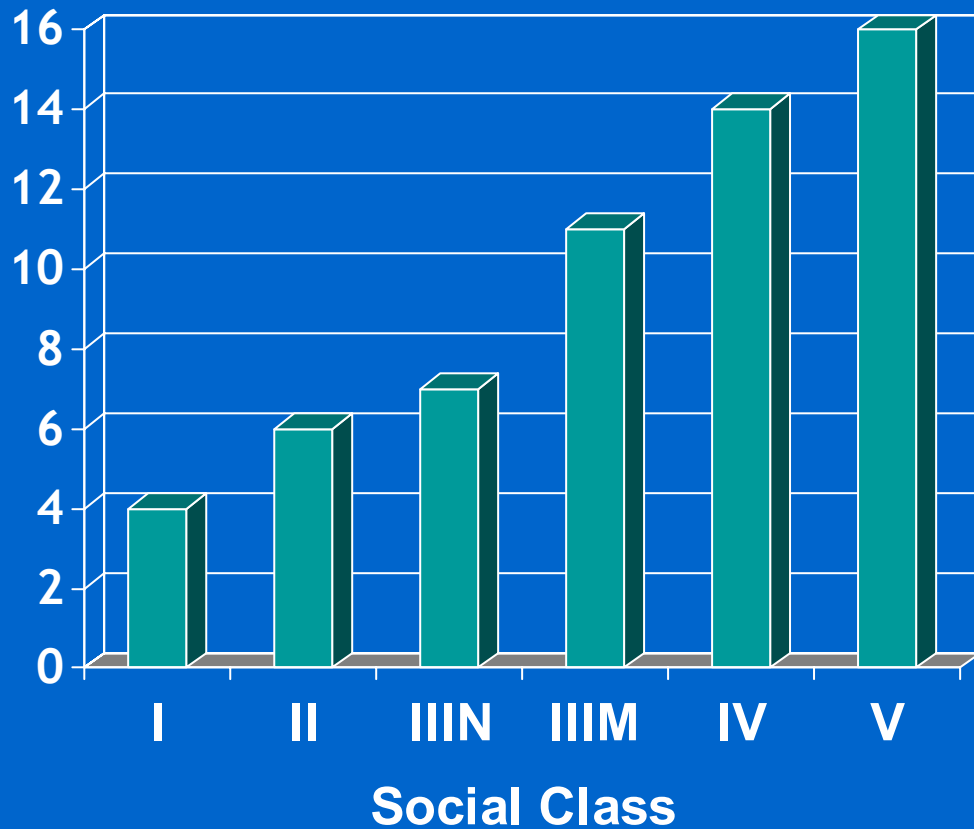


Source: *Report on the Health of Canadians*
Sept 1996



Behaviour Problems in Relation to Social Class

Ten Year Olds



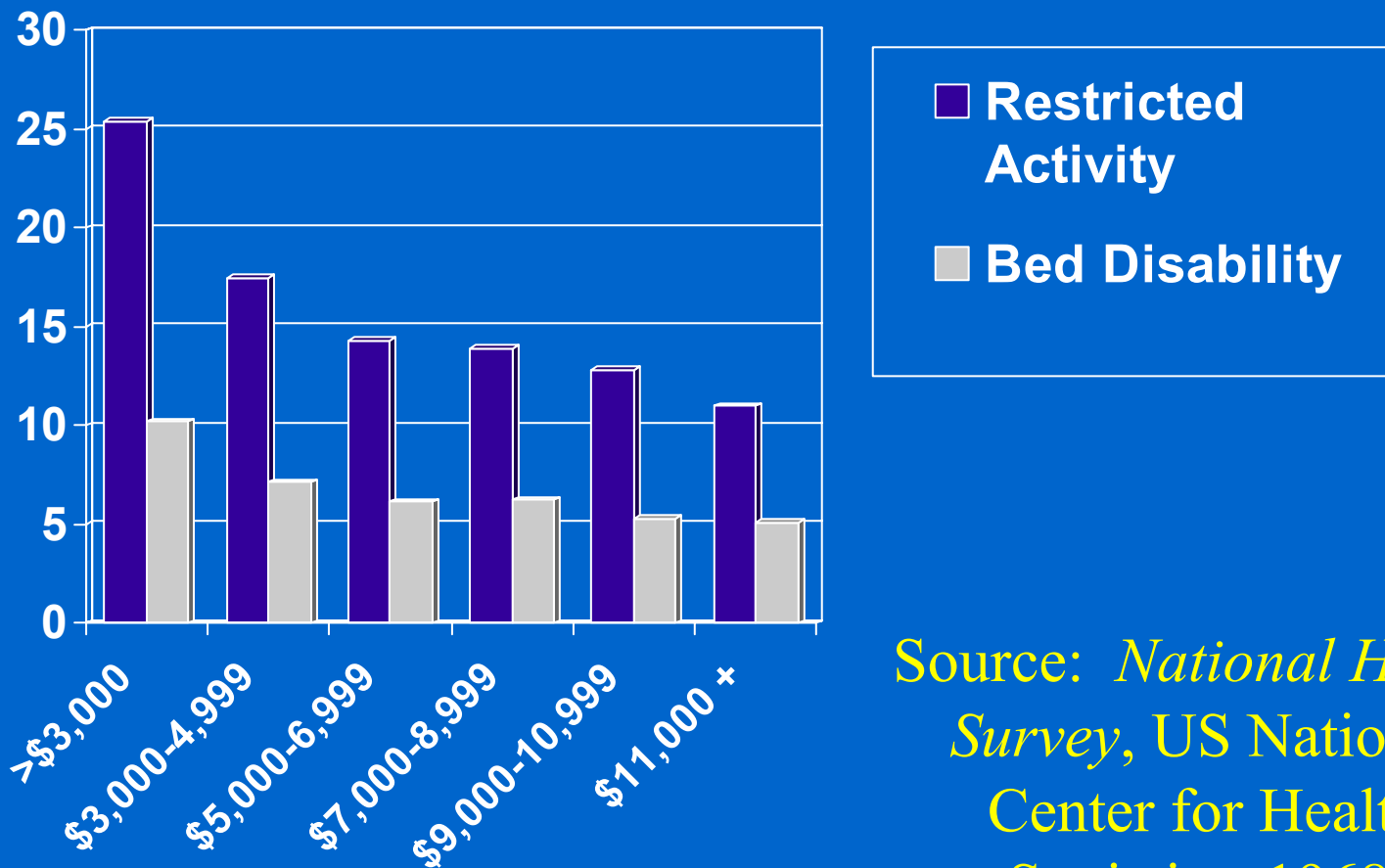
■ **Conduct Disorder**

Source: Wilkinson, Richard G., *Unhealthy Societies*, U.K., data from 1970 birth cohort.



Disability Days

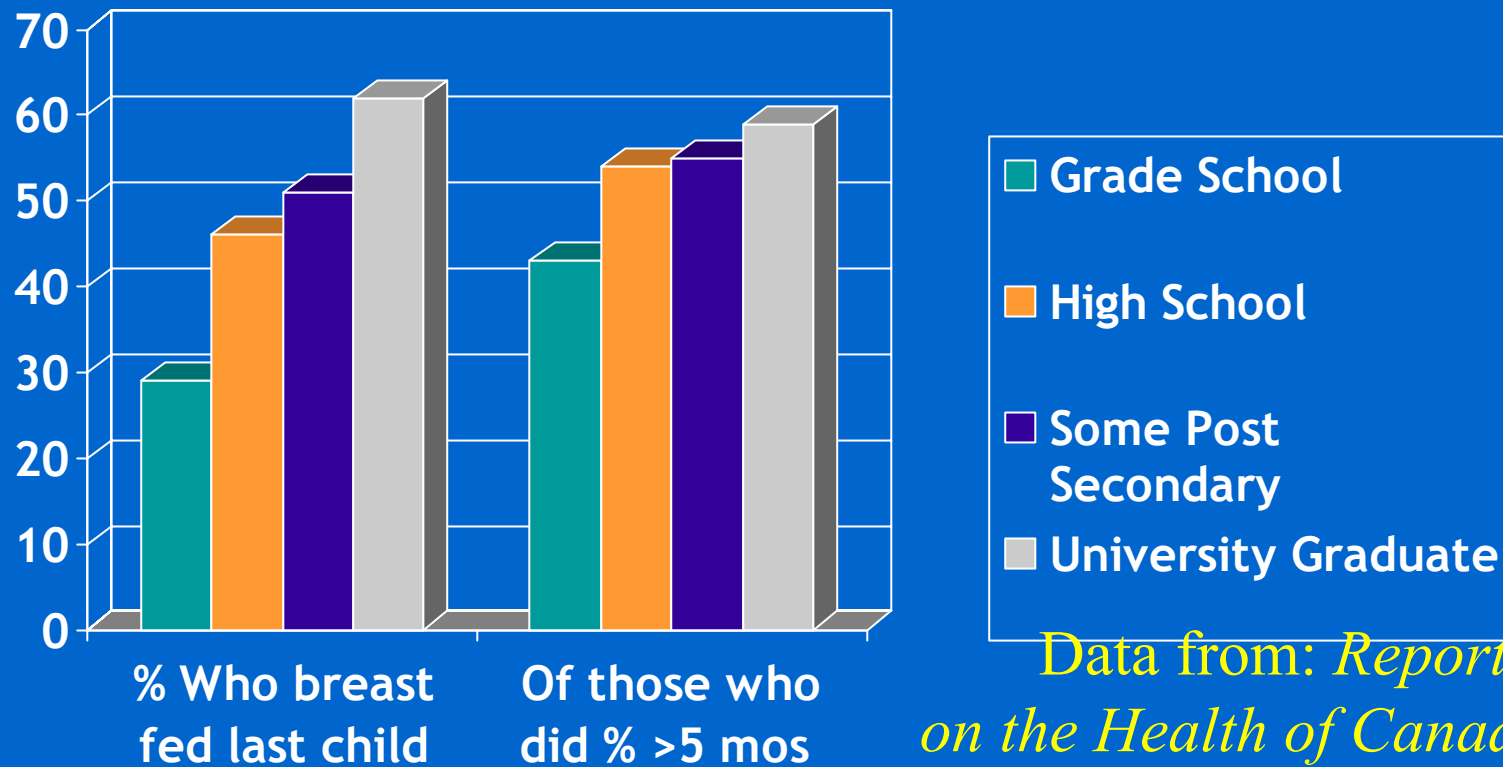
According to Family Income, U. S., 1968



Source: National Health Survey, US National Center for Health Statistics, 1968.



Breast-feeding and Level of Education



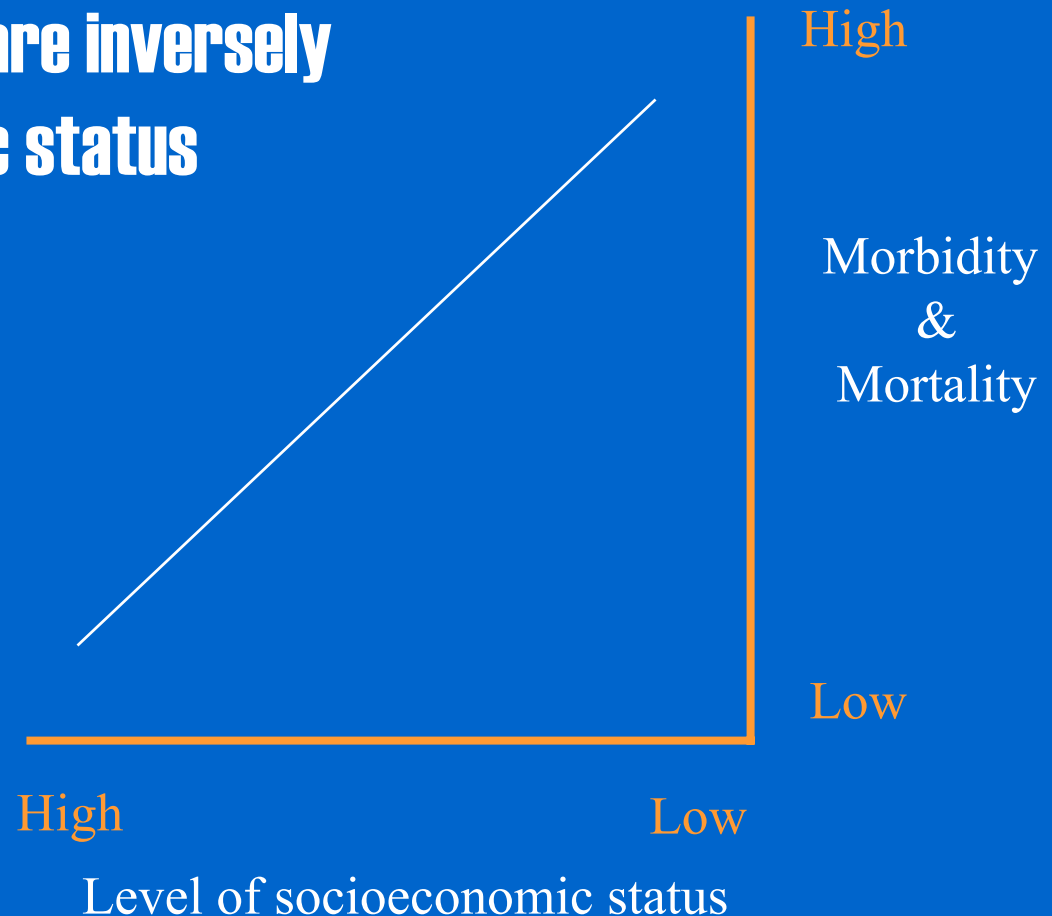
Data from: *Report on the Health of Canadians*
Sept 1996



Relationship Between SES & Health

Morbidity and mortality are inversely related to socio-economic status

Toward Understanding the Association of Socio-economic Status and Health: A New Challenge for the Biopsychosocial Approach. Norman B. Anderson & Cheryl A. Armstead. *Psychosomatic Medicine*. 57:213-225 (95)



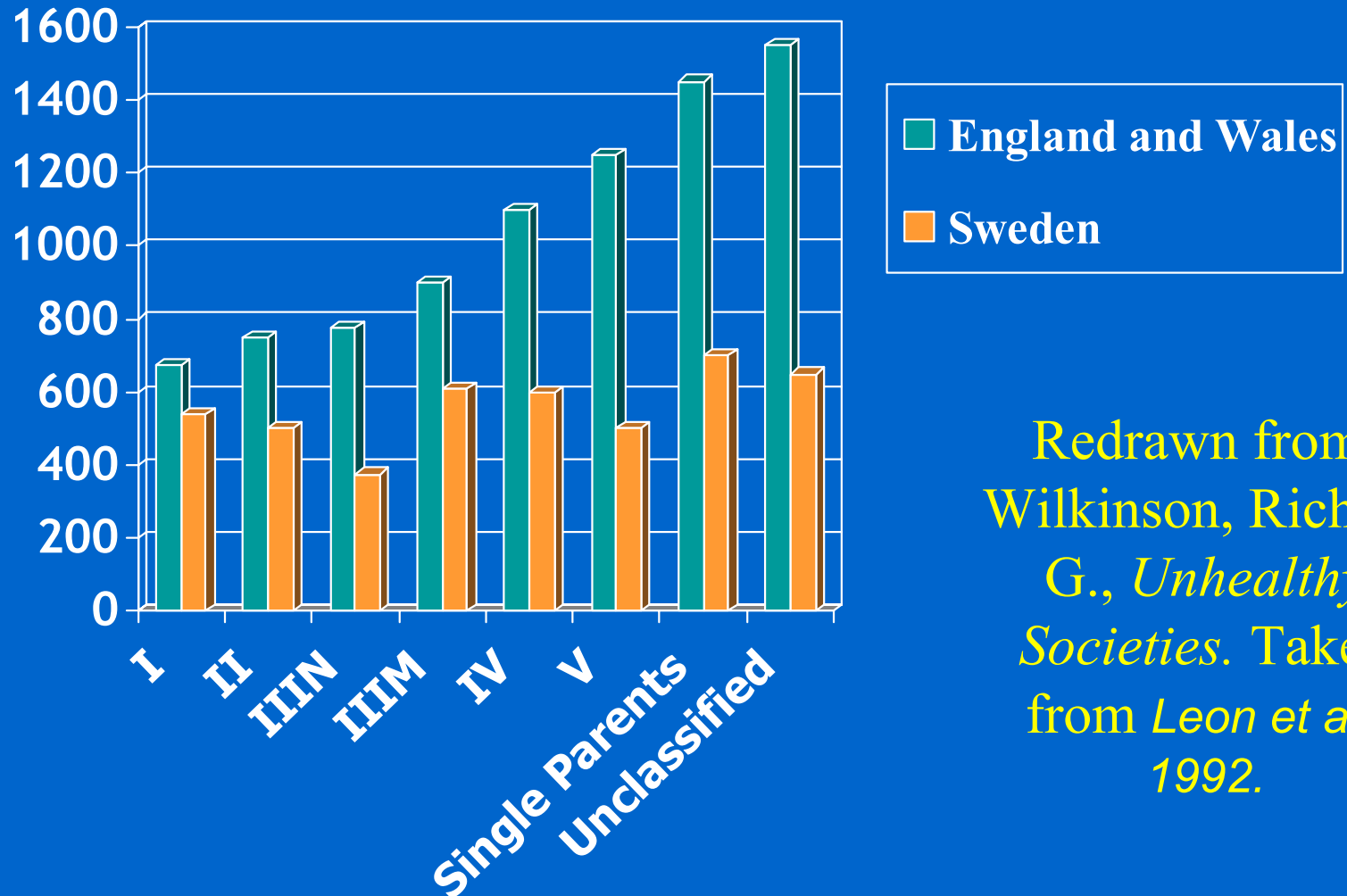


The **Population Health** Argument

- Health follow socio-economic levels
- Equalizing levels of prosperity increases overall population prosperity
- Decreased health disparity improves overall health status
- Improved health status reduces demand on health services



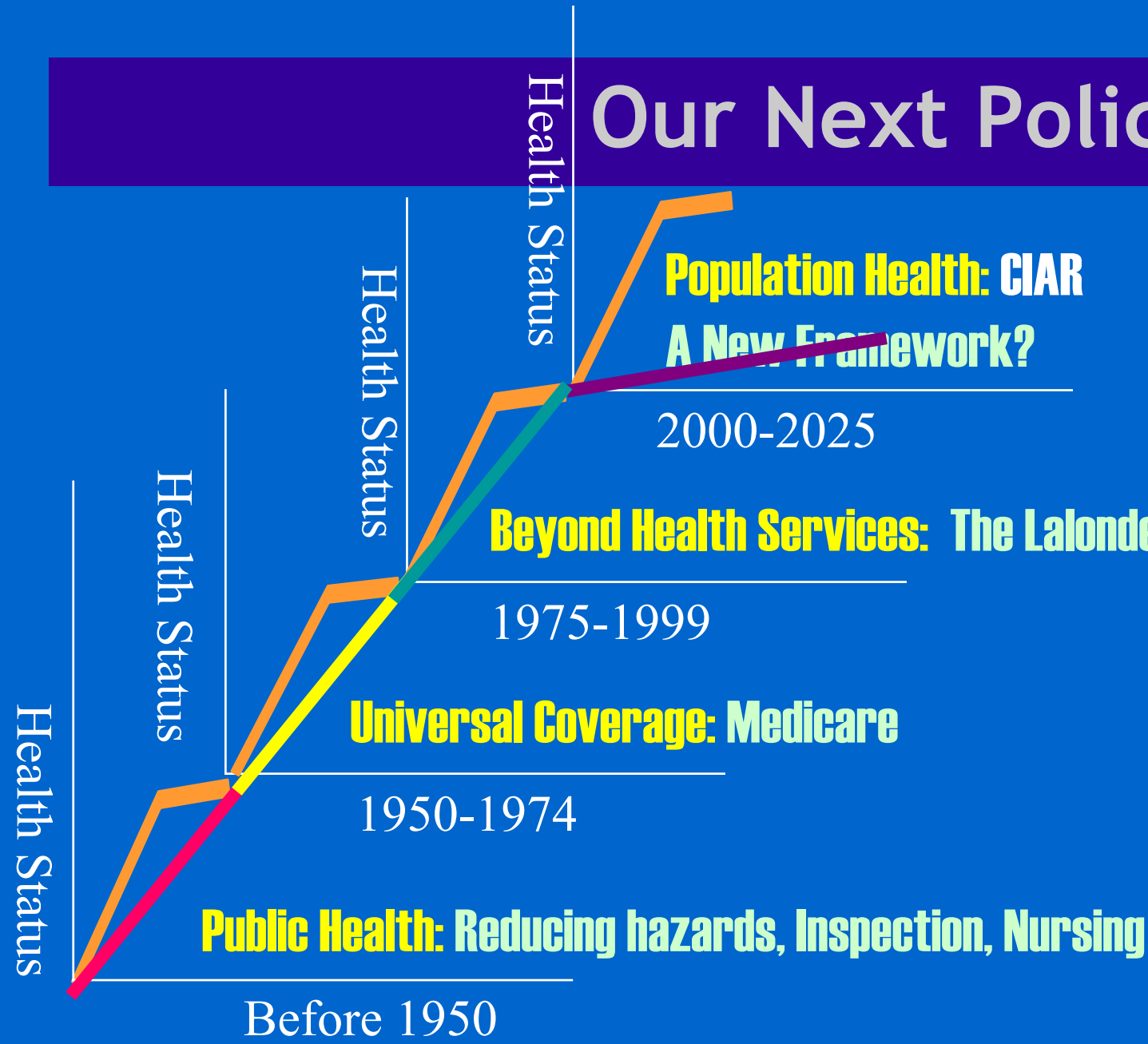
Equalizing Social Class Difference in Infant Mortality



Redrawn from:
Wilkinson, Richard
G., *Unhealthy
Societies*. Taken
from *Leon et al.*,
1992.



Our Next Policy Frame?





How will **Population Health** change demand?

- Will increased individual control over health support increase or reduce demand?
- Will there be more self-rationing or a lower threshold for intervention?
- Will reduced inequality and increased prosperity increase private services?
- Will better health status lower demand?
- What are some unexpected consequences that might occur?



Who We Are

This analysis is based on a growing understanding of
Complex Adaptive Systems Theory

This and other applications of this way of thinking e.g.

URBAN HEALTH

HEALTH POLICY

EMERGENCY ROOM OVERCROWDING

are on our web Site

www.healthandeverything.org

If you would like to contribute to our work with case studies or other issues please contact me by email

sholom@glouberman.com