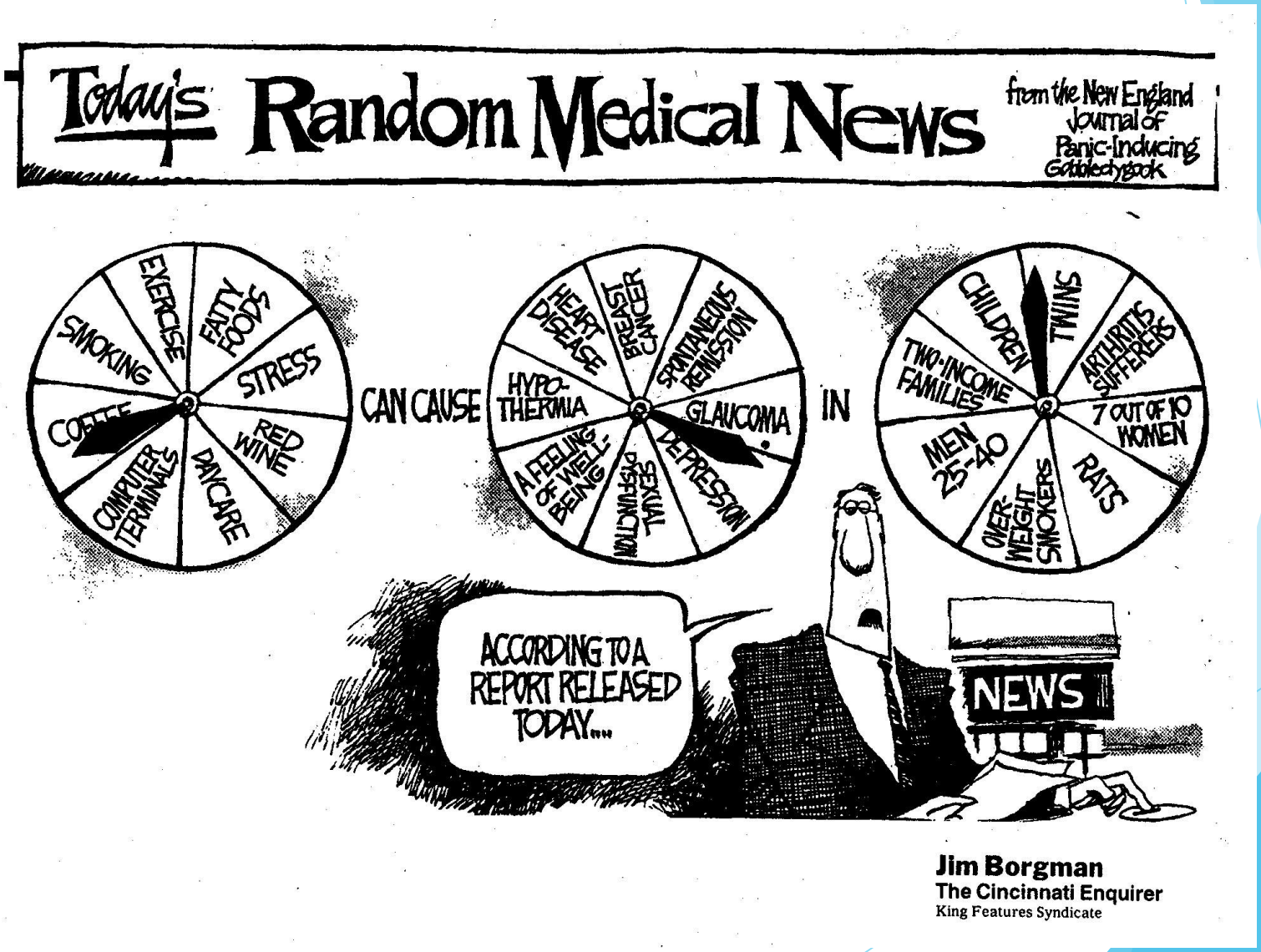
Epidemiology in Health Care Administration

- Definition & History Epidemiology
- Epidemiological Concepts
  - Types & Uses of Epidemiology
  - Populations
  - Population Interventions
- Population Health Planning & Management
  - Models
  - Examples
  - (Epidemiological) Evidence in the Planning Cycle

What is Epidemiology?



Definitions of Epidemiology

Oxford English Dictionary

- "The branch of medical science that treats epidemics."

Kuller LH: Am J Epid 1991;134:1051

- "Epidemiology is the study of 'epidemics' and their prevention.

Anderson G, quoted in Rothman KJ: Modern Epidemiology

- "The study of the occurrence of illness."

Lilienfeld A: in Foundations of Epidemiology

- "The study of the distribution of a disease or physiological condition in human populations and the factors that influence this distribution."

A Modern Definition

- *Epi* - upon
- *demos* - people
- *logos* - study

"Study of the occurrence and distribution of health-related events or diseases in specified populations, including the study of the determinants influencing such states, and the application of this knowledge to control the health problem."

(Porta M, Last J, Greenland S. A Dictionary of Epidemiology, 2008)

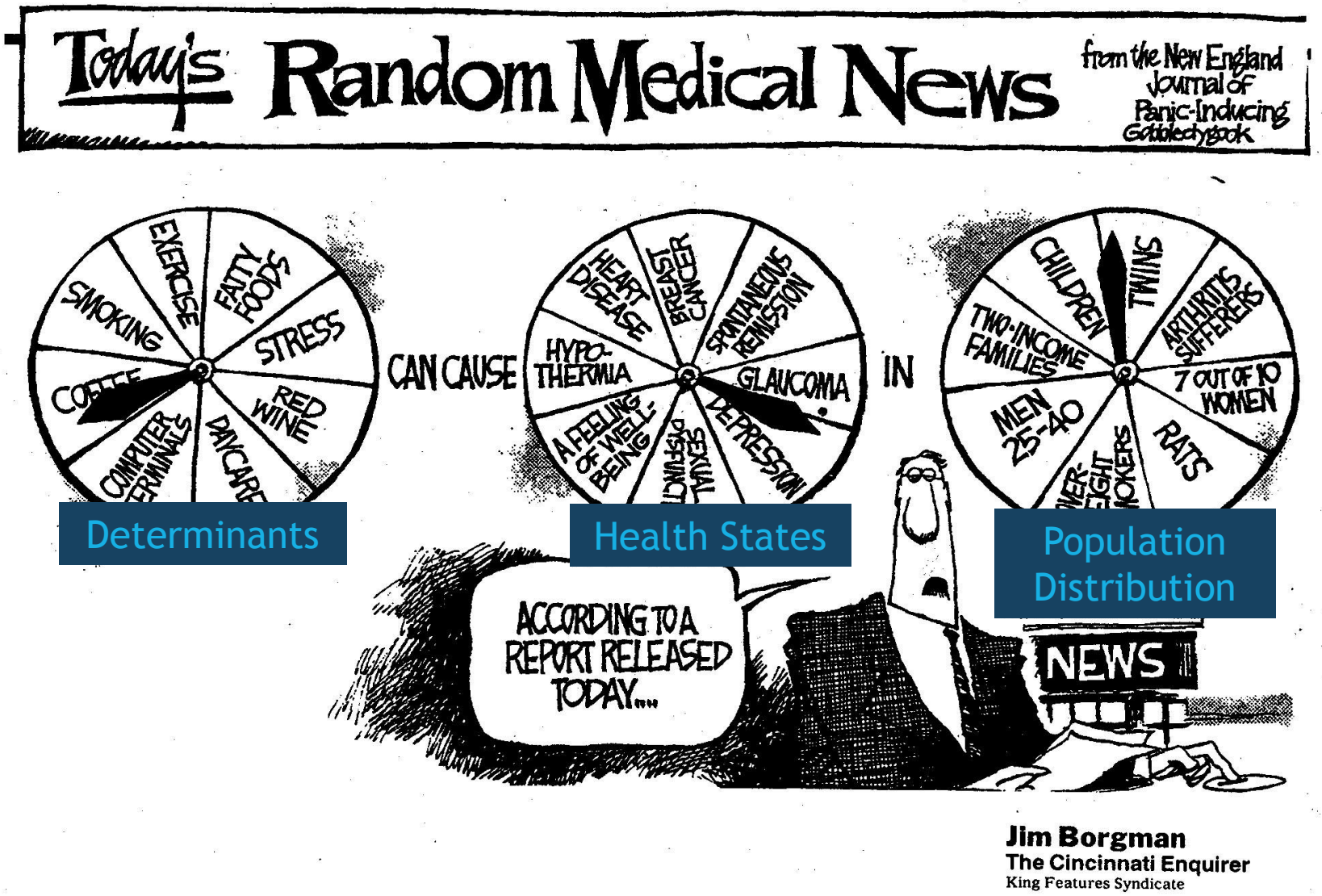
Purposes of Epidemiology

- To investigate the nature/extent of health-related phenomena in the community
- To study natural history and prognosis of health-related problems
- To identify causes and risk factors
- To (help to) identify priorities
- To recommend/assist in application and evaluation of best interventions (preventive and therapeutic measures)
- To provide foundation for public policy

Epidemiological Concepts: Population Focus

- The focus of epidemiology is on the occurrence of health and disease in the population.
  - What happens to many
- The population approach contrasts with clinical medicine's primary concern with health and disease in the individual.
  - What happens to one

What is Epidemiology?



The Unique Skill Of Epidemiologists:

MEASURING DISEASE FREQUENCY IN POPULATIONS

Epidemiologists describe, quantify, and propose causal mechanisms for health phenomena in populations.

Discussion:

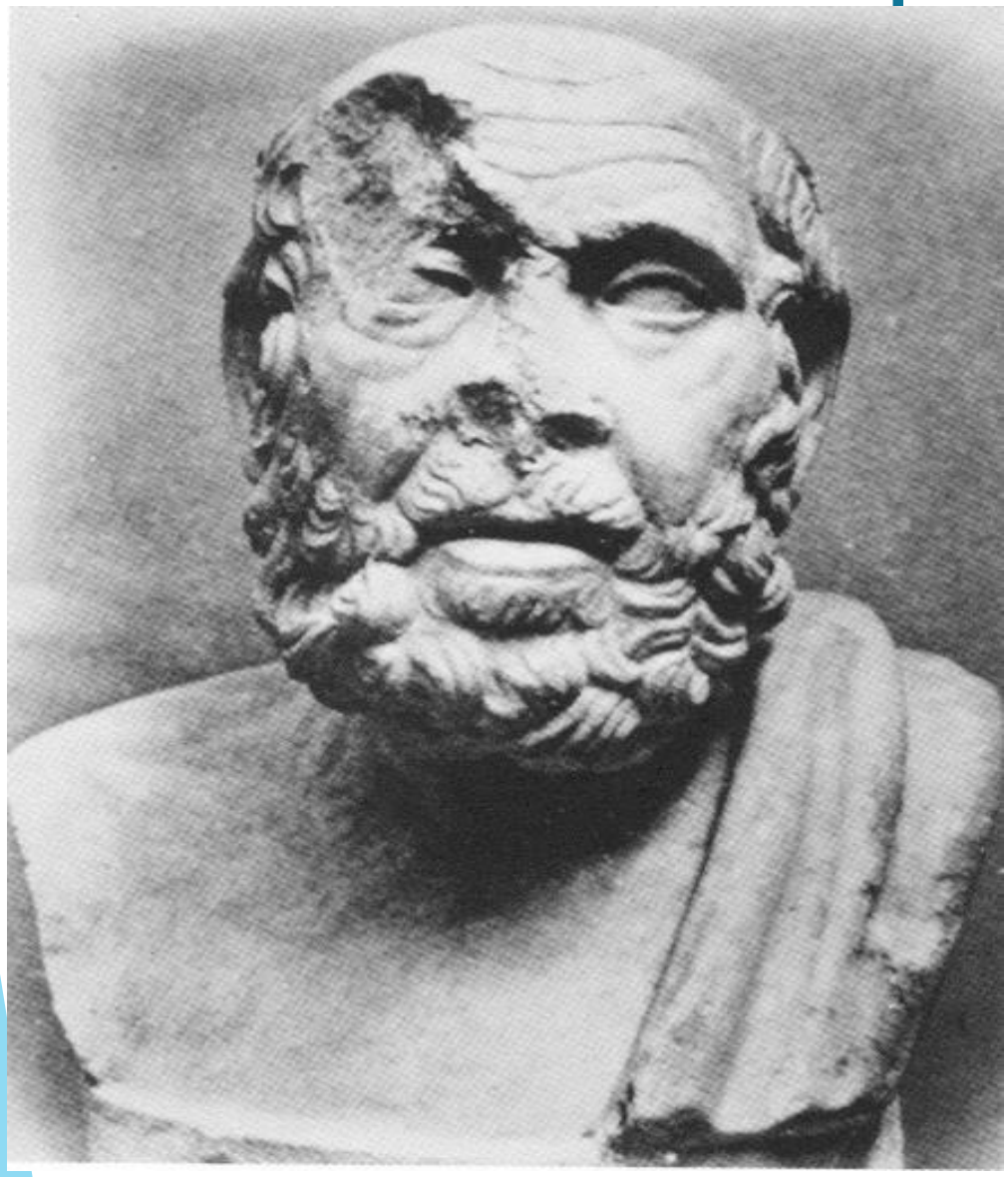
What might be the advantages of studying the epidemiology of diseases in populations rather than focusing on individuals in treatment settings?

Kip, 2004

Epidemiology has multiple disciplinary influences:

- **Public health:** because of the emphasis on disease prevention
- **Clinical medicine:** because of the emphasis on disease classification and diagnosis (numerators)
- **Pathophysiology:** because of the need to understand basic biological mechanisms in disease (natural history)
- **Biostatistics:** because of the need to quantify disease frequency and its relationships to antecedents (denominators, testing hypotheses)
- **Social sciences:** because of the need to understand the social context in which disease occurs and presents (social determinants of health phenomena)

Historical Examples of Epidemiological Principles



On Airs, Waters, and Places

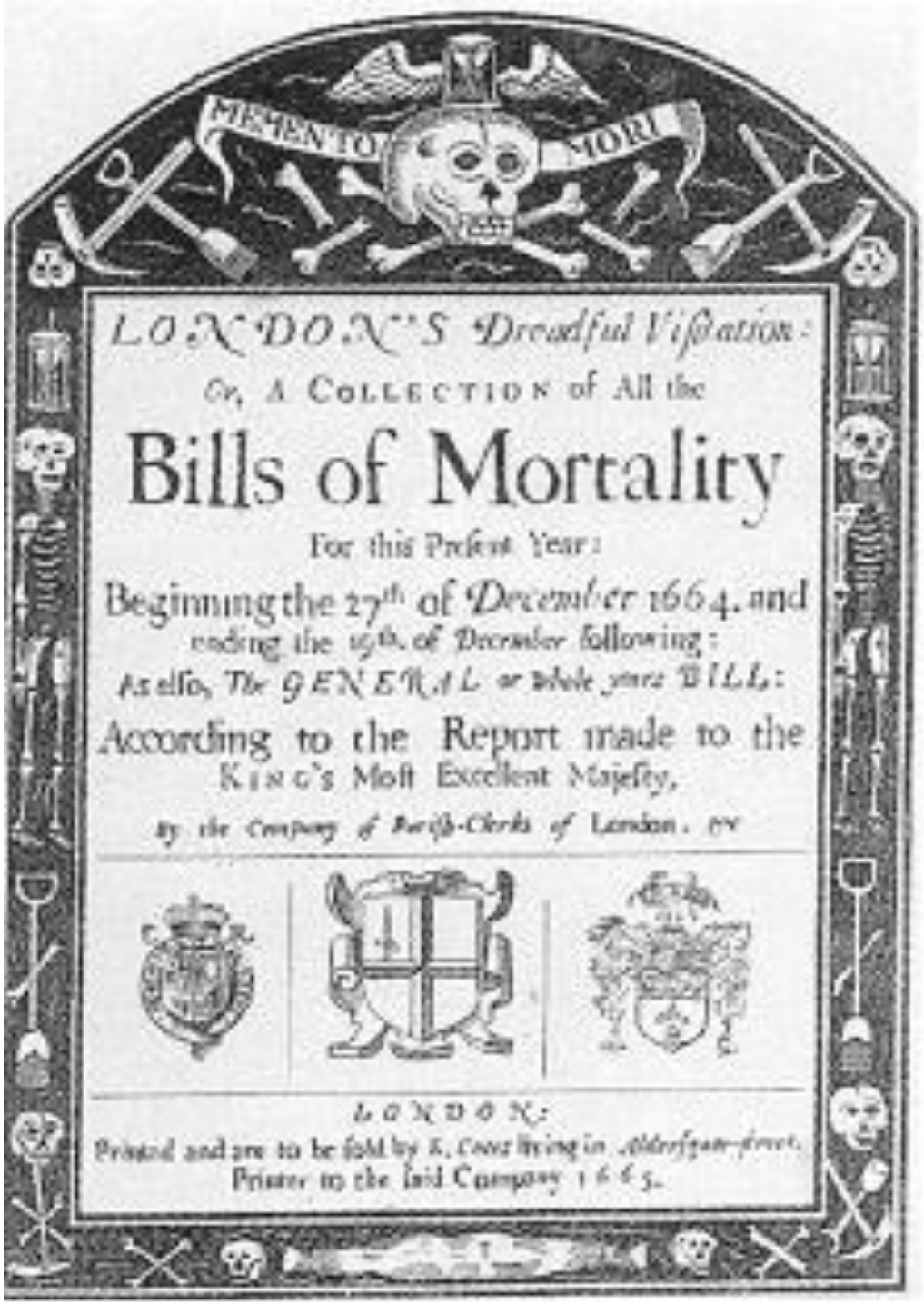
(5th century BCE)

Hippocrates

- "Father of Epidemiology"
  - originated the idea that diseases & health might be associated with the physical environment
  - use of observational techniques
- Hippocrates spearheaded a move away from looking to blame demons for disease and injury

John Graunt (1629-1674)

- **Vocation - Haberdasher** (Seller of men's accessories)
- **Avocation - Founder of demography and epidemiology**
  - Use of quantitative methods (counts)
  - to study age & sex differences in death & disease
  - across different geographic areas


MEMENTO MORI
LONDON's Dreadful Visitation:
Or, A COLLECTION of All the
Bills of Mortality
For this Present Year:
Beginning the 27th of December 1664. and
ending the 19th. of December following:
As also, The GENERAL or Whole years BILL:
According to the Report made to the
KING's Most Excellent Majesty,
By the Company of Parish-Clerks of London, &c
LONDON:
Printed and are to be sold by T. Cotes living in Aldersgate-street,
Printer to the said Company 1665.

The Diseases, and Casualties this year being 1632.

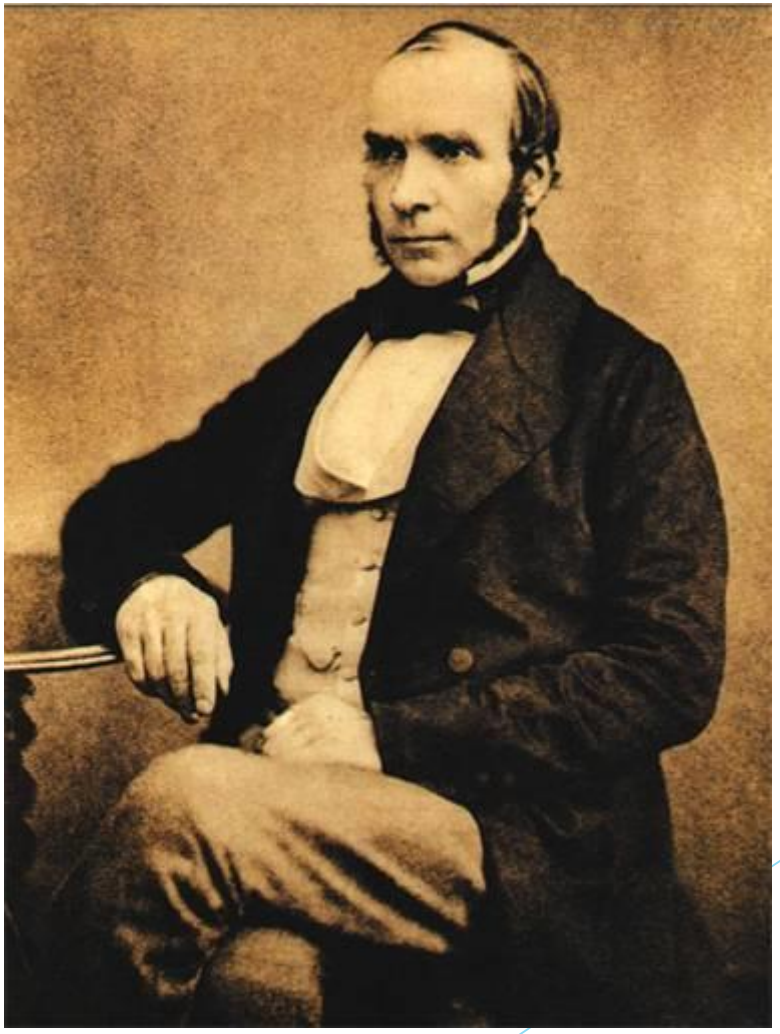
Abortive, and Stillborn	445	Grief	11
Affrighted	1	Jaundies	43
Aged	628	Jawfaln	8
Ague	43	Impostume	74
Apoplex, and Meagrom	17	Kil'd by several accidents	46
Bit with a mad dog	1	King's Evil	38
Bleeding	3	Lethargie	2
Bloody flux, scowring, and flux	348	Livergrown	87
Brused, Issues, sores, and ulcers	28	Lunatique	5
Burnt, and Scalded	5	Made away themselves	15
Burst, and Rupture	9	Measles	80
Cancer, and Wolf	10	Murthered	7
Canker	1	Over-laid, and starved at nurse	7
Childbed	171	Palsie	25
Chrisomes, and Infants	2268	Piles	1
Cold, and Cough	55	Plague	8
Colick, Stone, and Strangury	56	Planet	13
Consumption	1797	Pleurisie, and Spleen	36
Convulsion	241	Purples, and spotted Feaver	38
Cut of the Stone	5	Quinsie	7
Dead in the street, and starved	6	Rising of the Lights	98
Dropsie, and Swelling	267	Sciatica	1
Drowned	34	Scurvey, and Itch	9
Executed, and prest to death	18	Suddenly	62
Falling Sickness	7	Surfet	86
Fever	1108	Swine Pox	6
Fistula	13	Teeth	470
Flocks, and small Pox	531	Thrush, and Sore mouth	40
French Pox	12	Tissick	34
Gangrene	5	Tympany	13
Gout	4	Vomiting	1
		Worms	27

Christened	Males 4994	Buried	Males 4932	Whereof,
	Females 4590		Females 4603	of the
	In all 9584		In all 9535	Plague. 8

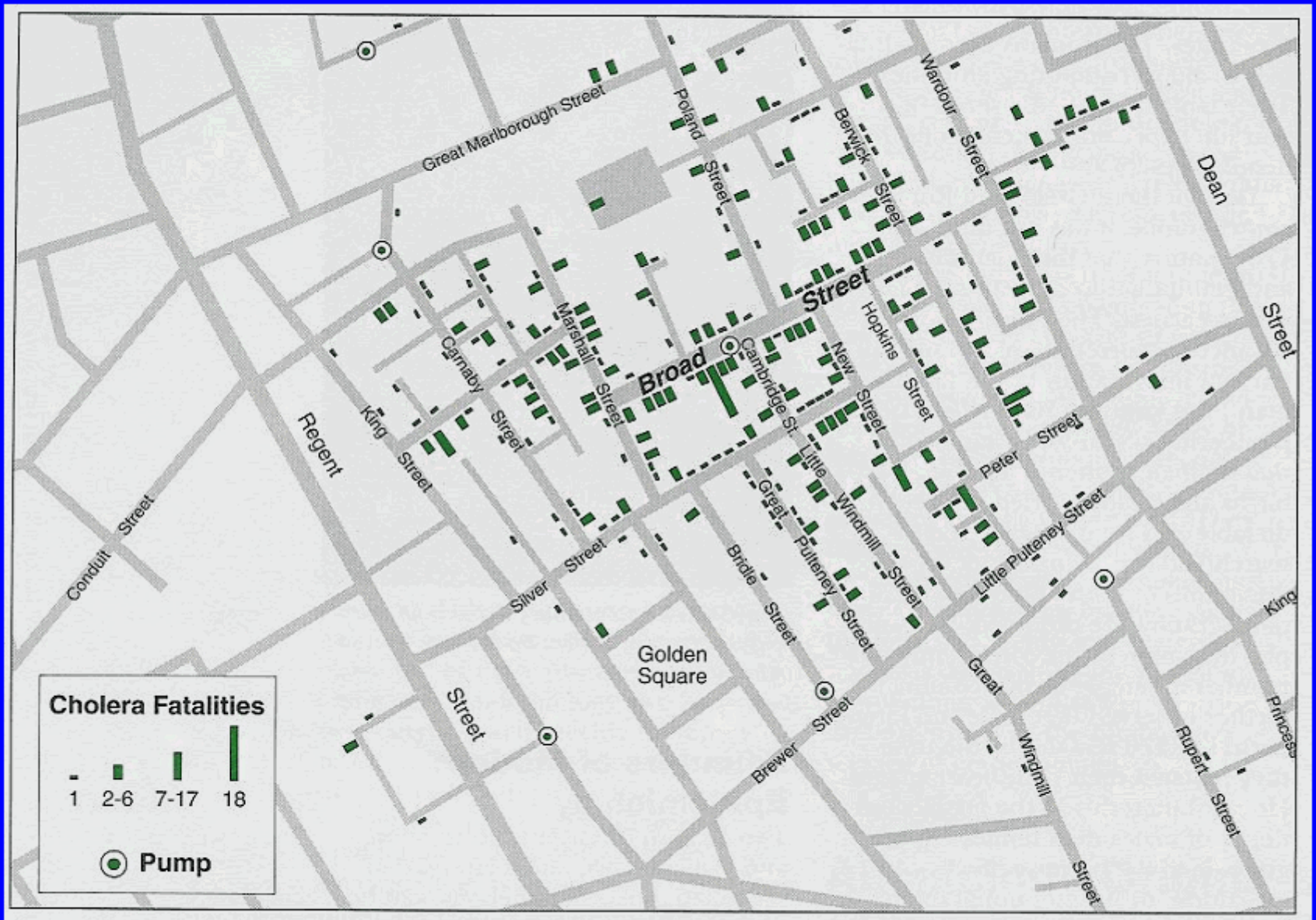
Increased in the Burials in the 122 Parishes, and at the Pesthouse this year 993

Decreased of the Plague in the 122 Parishes, and at the Pesthouse this year 266

John Snow (1813-1858) and the Broad Street Pump



Spot Map of Fatal Cholera Cases in London, 1854



Source: Adapted from John Snow, *Snow on Cholera* (New York: Hafner, 1965).

Source: Ian R.H. Rockett. Population and Health: An Introduction to Epidemiology. Second edition. Population Bulletin 54(4); 1999: 6.

Snow's Examples of Epidemiological Principles

- Logical organization of observations to develop hypothesis
- Use of 'natural experiment'
  - All residents received water from two companies
  - One company relocated its water supply
  - Snow demonstrated that disproportionately more residents who contracted cholera used water from the company with the more highly contaminated water
- Quantitative approach
- (Was unable to convince those in power and died in 1858 before his ideas were accepted.)

More Recent Examples

- Evaluation of risk factors for chronic diseases using case controls
  - DOLL & HILL (1950): Used a case-control design to describe and test the association between smoking and lung cancer
- Long term population studies using cohorts
  - **Framingham Heart Study**
    - In 1940s, researchers under the direction of National Heart Institute (now the National Heart, Lung, and Blood Institute) planned the study.
    - The study conducts a medical history, physical exam, lifestyle interview, and lab test every two years since 1948. It is still going on now.
    - Over 50 years, 1,000 articles has been published, identify CVD risk factors now we all know.
- Clinical or community trials to evaluate interventions

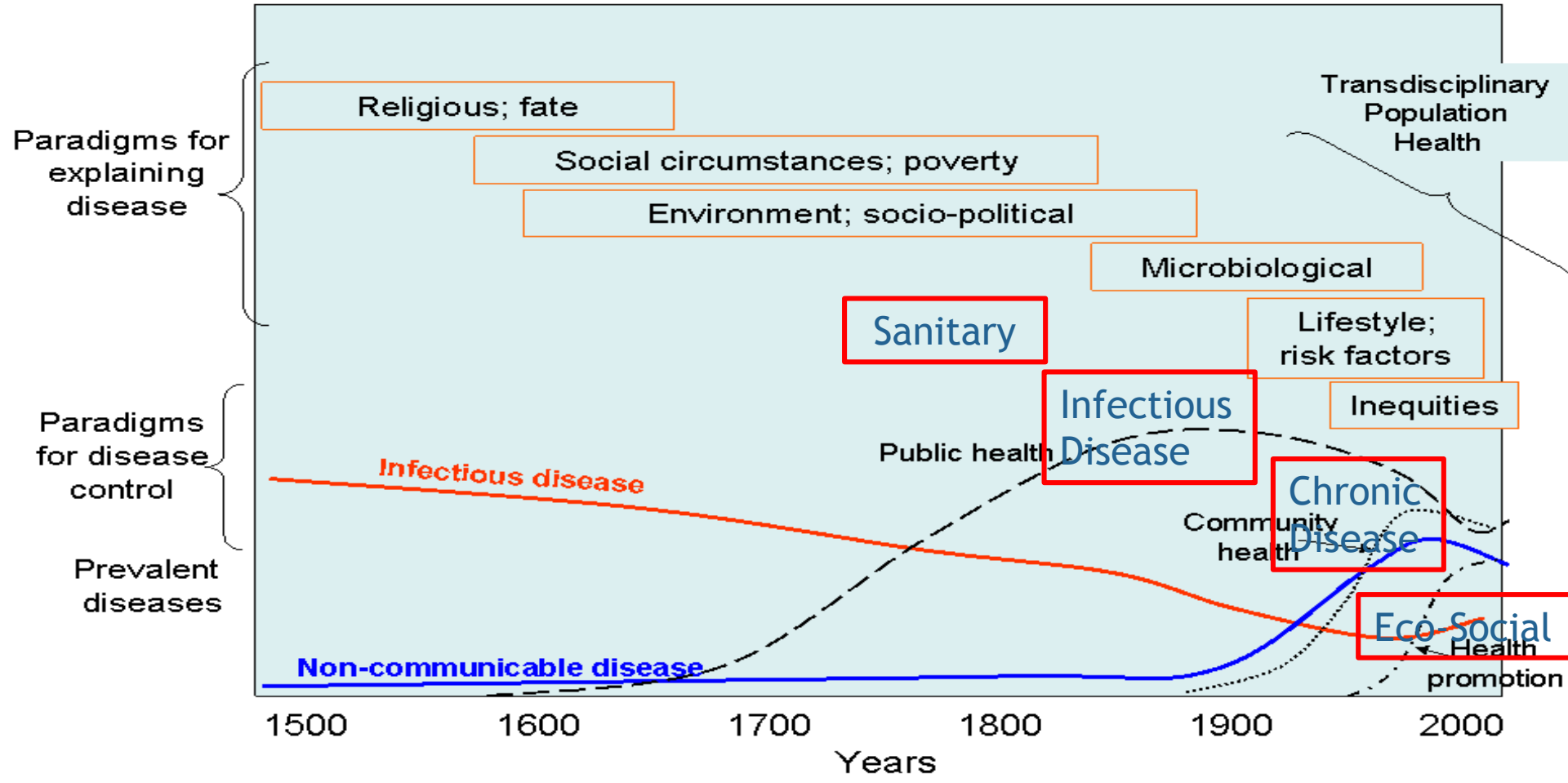
Historical Eras in Epidemiology

Era	Paradigm	Analytic Approach	Prevention Approach
Sanitary	Miasma theory	Clustering of mortality	Sanitation
Infectious disease	Germ theory	Laboratory	Vaccination
Chronic disease	Black box	Risk ratios	Host, agent, environment
Eco-social epidemiology	Systems theory (?)	Determinants at many levels	Contextual to molecular

M. Susser. Am J Public Health 1996;86:674-7.

http://www.med.uottawa.ca/SIM/data/Models/Evolution_of_Public_Health_model.gif

Historical Evolution of Population Health Approaches



EPIDEMIOLOGICAL CONCEPTS: Types of Epidemiology

- **By Method**
  - Descriptive epidemiology
  - Analytic (including experimental) epidemiology
- **By Subject**
  - Environmental and occupational epidemiology
  - Infectious disease epidemiology
  - Field epidemiology
  - Applied epidemiology
  - Genetic and molecular epidemiology
  - Clinical epidemiology
  - Social epidemiology
  - Managerial epidemiology

Broad Characterizations of Epidemiology by Methods

- Descriptive Epidemiology
  - Examining, identifying, and reporting on the frequency and distribution of health states in a population.
  - Learning the basic features of their distribution.
- Analytic Epidemiology
  - Identifying factors underlying disease or health events.
  - Testing a hypothesis by studying how exposures relate to outcomes

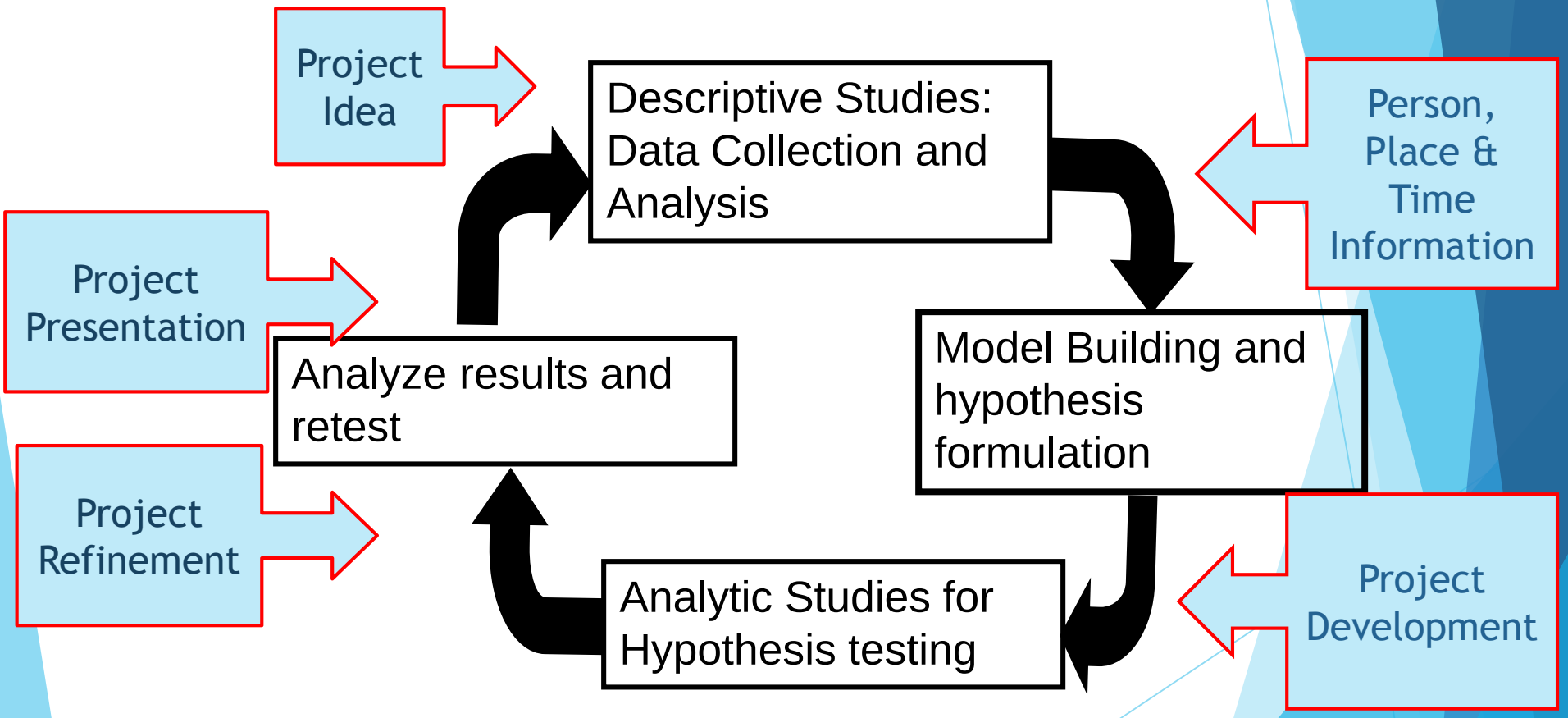
Epidemiologic Studies

- Descriptive Epidemiology
  - Baseline data on distribution of disease
  - Surveillance
- Analytic Epidemiology – Measure Effect
  - Prospective Cohort Studies
  - Cross-sectional Studies
  - Retrospective Case-Control Studies
  - Ecologic Studies
  - Randomized Controlled Trials

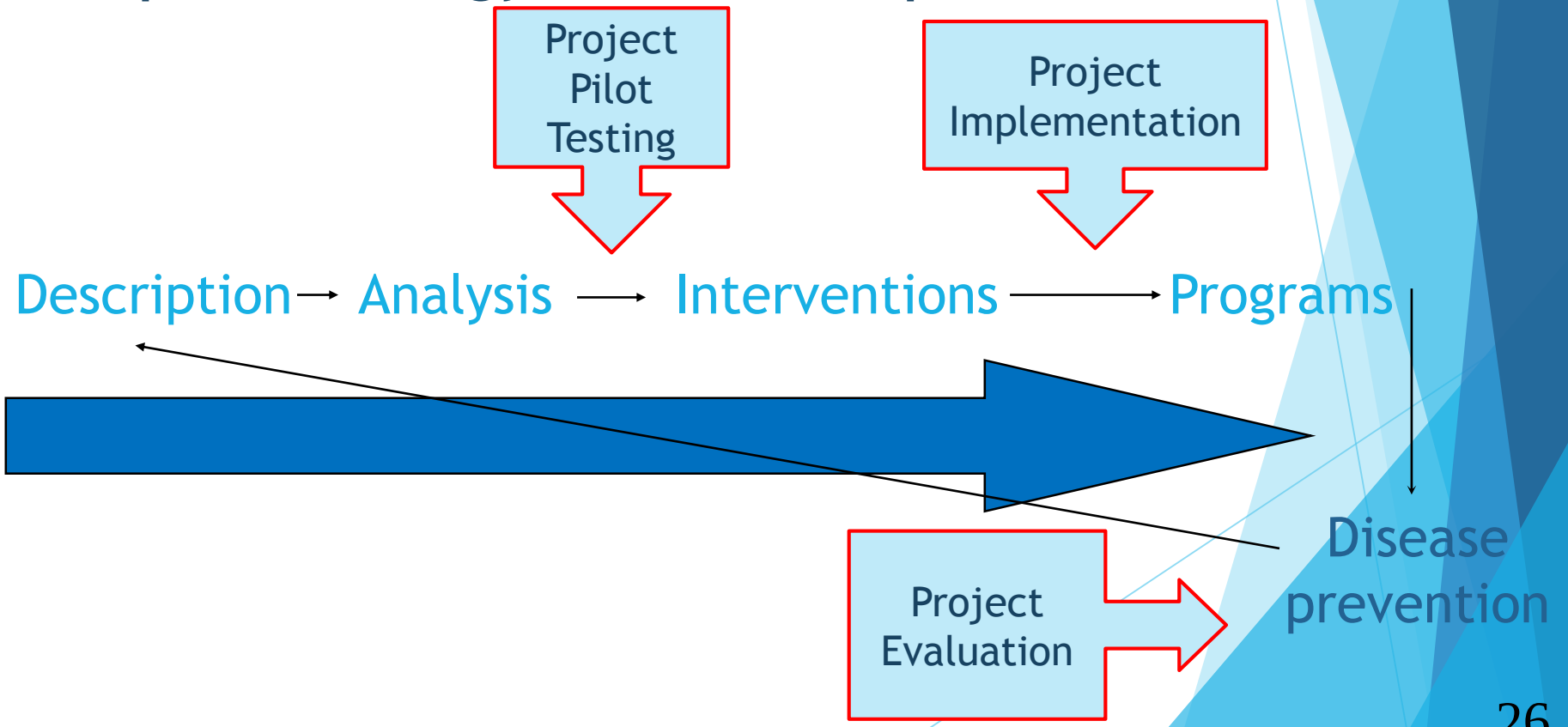
Observational

Experimental

Descriptive/Analytic Relationship



Logical sequence to the practice of epidemiology in disease prevention



“Clinical Epidemiology”: Epidemiology applied to clinical populations

- To identify the response of health problems to health care solutions
  - Assess the impact of health care on health problems (i.e. does treatment work?)
  - Assist in the development of health services and programs
  - Example of experimental epidemiology

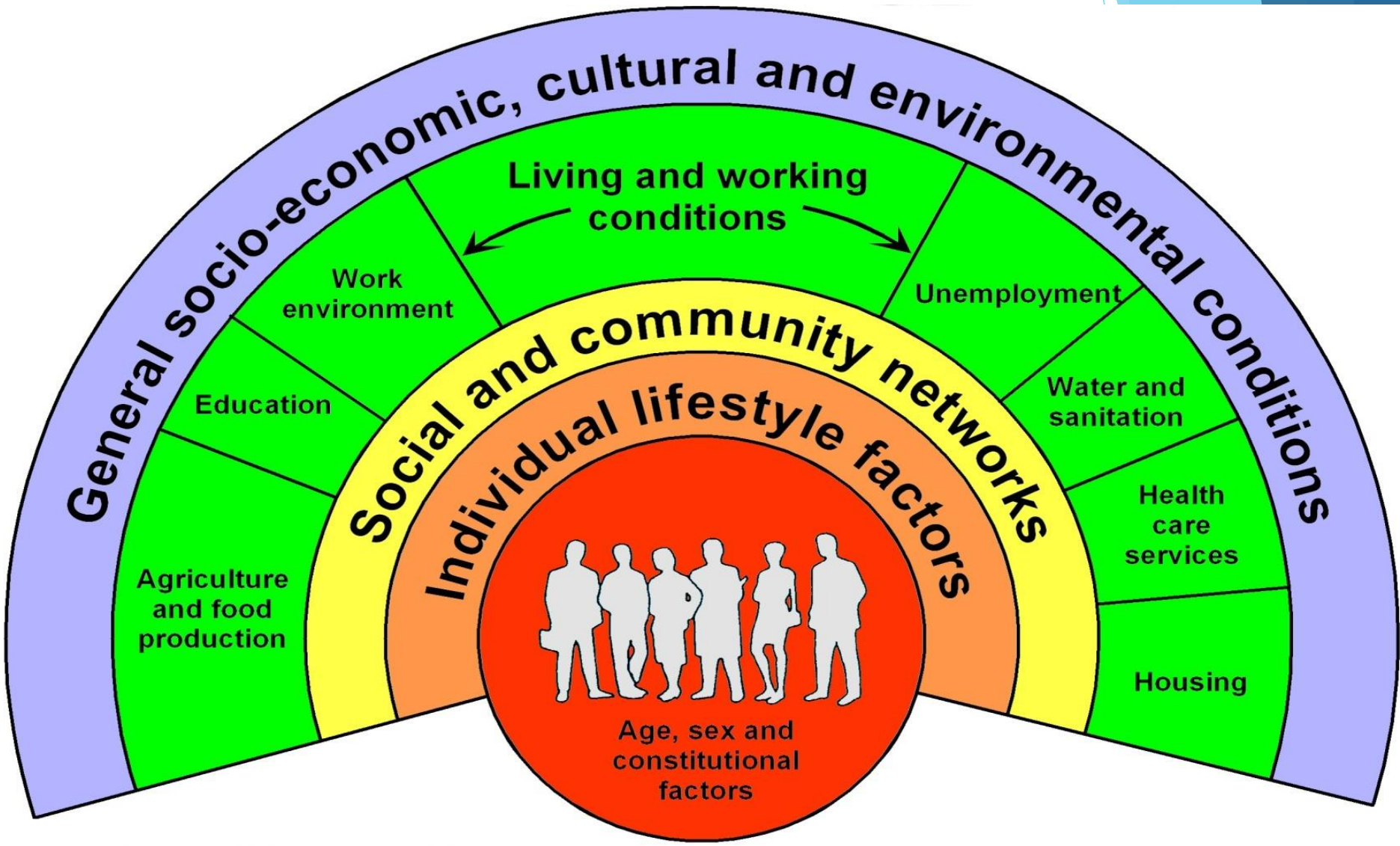
Journal of Clinical Epidemiology: http://www.jclinepi.com/

Social Epidemiology

- Branch of epidemiology that studies the social distribution and social determinants of health (Berkman and Kawachi 2000).
  - Argued that all epidemiology is social epidemiology (Kaufman and Cooper 1999) with the analysis of the social determinants of Health .
- Range of issues studied:
  - affect on health of
    - neighbourhood contexts
    - workplace organization
    - income inequality
    - education
    - social class
    - social cohesion

Journal of Epidemiology & Community Health: http://jech.bmj.com/

Determinants of health



Source: Dahlgren and Whitehead, 1991

THEORETICAL DIFFERENCES BETWEEN "CONVENTIONAL" & SOCIAL EPIDEMIOLOGY

CONVENTIONAL EPIDEMIOLOGY

- Biological paradigm
- All diseases are biological phenomena that can be described fully in biological paradigm
- Disease is reflection of individual risk factors

SOCIAL EPIDEMIOLOGY

- Bio-psychosocial paradigm
- Biology of organism is determined in multilevel interactive environment
- Health & disease are assumed to be products of mutual interaction among social, individual & biological (ecological) factors

Managerial Epidemiology
Fos and Fine (2005)

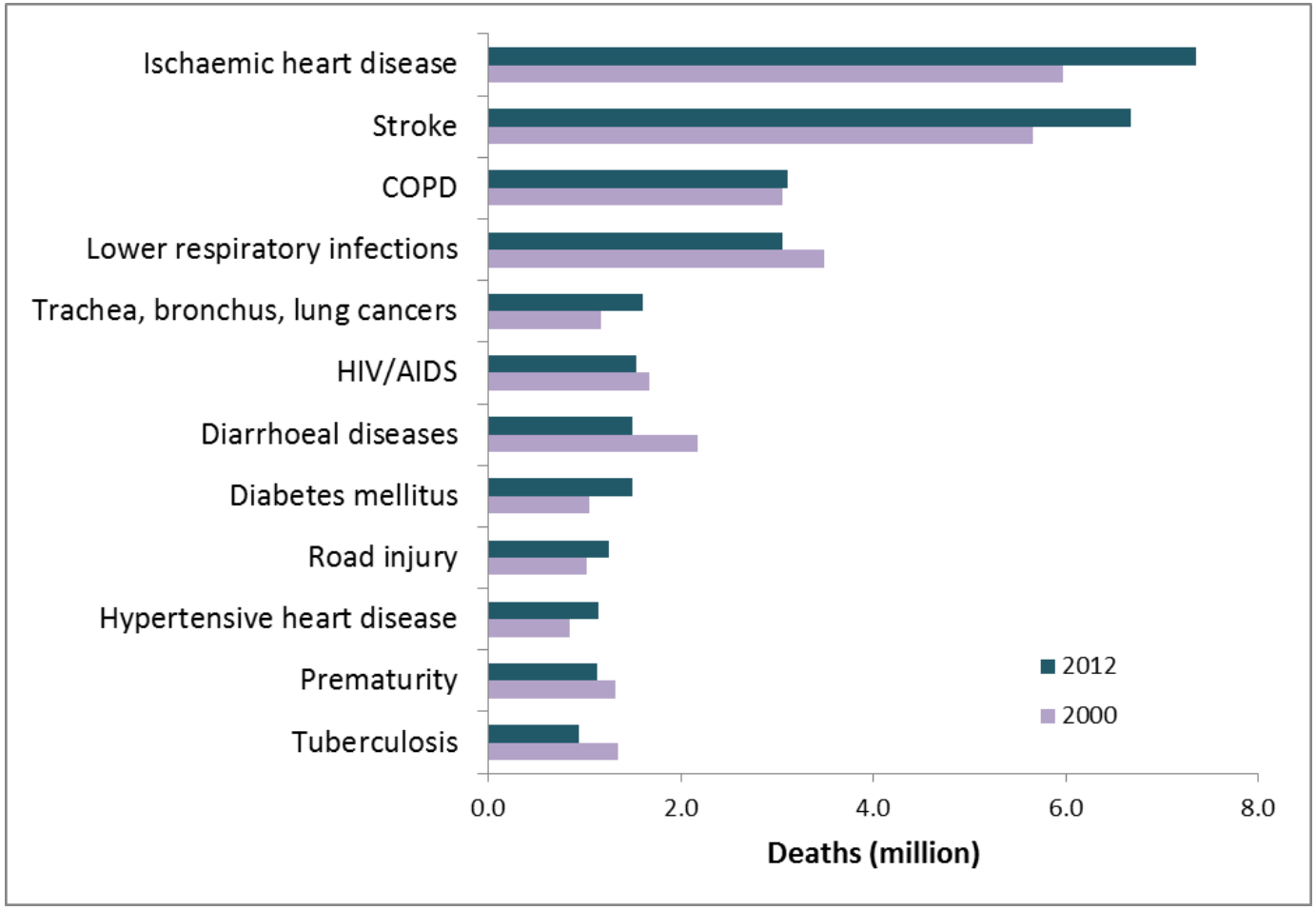
- The use of epidemiology for designing and managing the health care of populations
  - The tools of epidemiology are important for purposes of planning, monitoring, and evaluation of population health.
- Managing the health of populations requires both
  - an understanding of the factors that influence population health (see SDoH)
  - and how those factors can be influenced by health care organizations and systems (evidence of effectiveness)

Health Services Research and Managerial Epidemiology
http://hme.sagepub.com/content/current

Uses of Epidemiology:
What can epi do for me?

- Assessing burden of disease in populations
  - Death & disease rates
- Identifying the causes of disease
  - Legionnaire's disease
- Identifying new syndromes
  - Varieties of hepatitis
- Monitoring the health of a community, region, or nation
  - Surveillance, accident reports
- Conduct long-term population studies to understand what causes diseases/accidents.
  - If you start smoking as a teenager, what is your risk of developing lung cancer by the time you are 50?

Comparison of leading causes of deaths, Global, 2000 and 2012

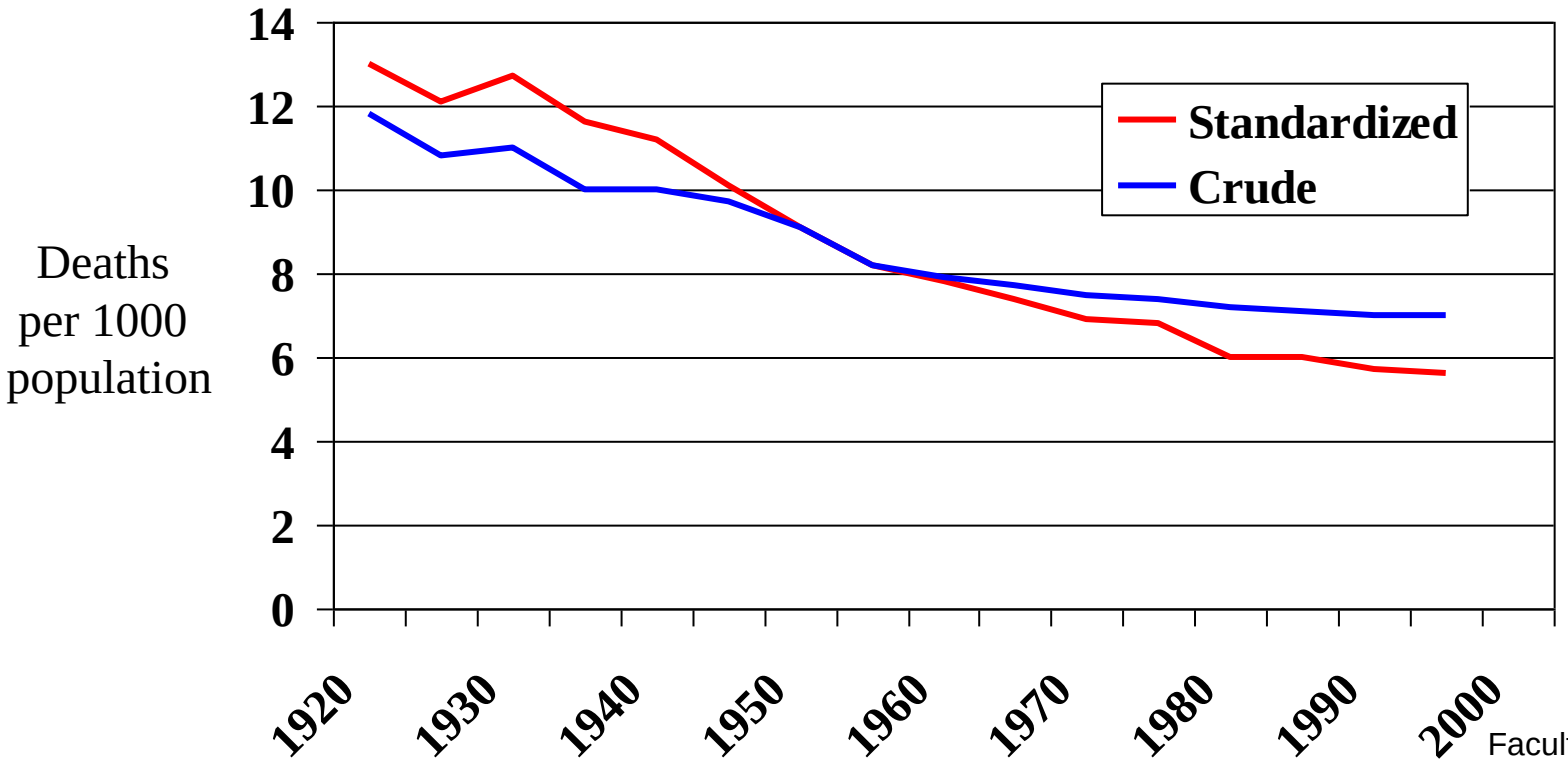


World Health Organization

Our health has improved remarkably!

One way to describe health is via death rates: the lower these are, the longer people live on average. But as old people are more likely to die than the young, you would expect more deaths in an older population. The 'age-standardized' rate (red) corrects for this to give a fair comparison. The fact that the red line declines *faster* than the blue shows that we are doing even better than appears from the raw figures.
We all now have *half the chance* of dying in the coming year as someone did in 1920.

Crude and Age- standardized Overall Mortality Rates, Canada, 1920-2000



SARS Epidemiology

- Worldwide*
  - 7,053 cumulative cases
  - 506 deaths
- Taiwan*
  - 846 reported Cases
  - 131 probable Cases
  - 229 suspected Cases
  - 19 deaths

*As of May 8, 2003

UK male doctors born 1900-1930: continuing cigarette vs never smokers. 50-year follow-up of mortality, 1951-2001

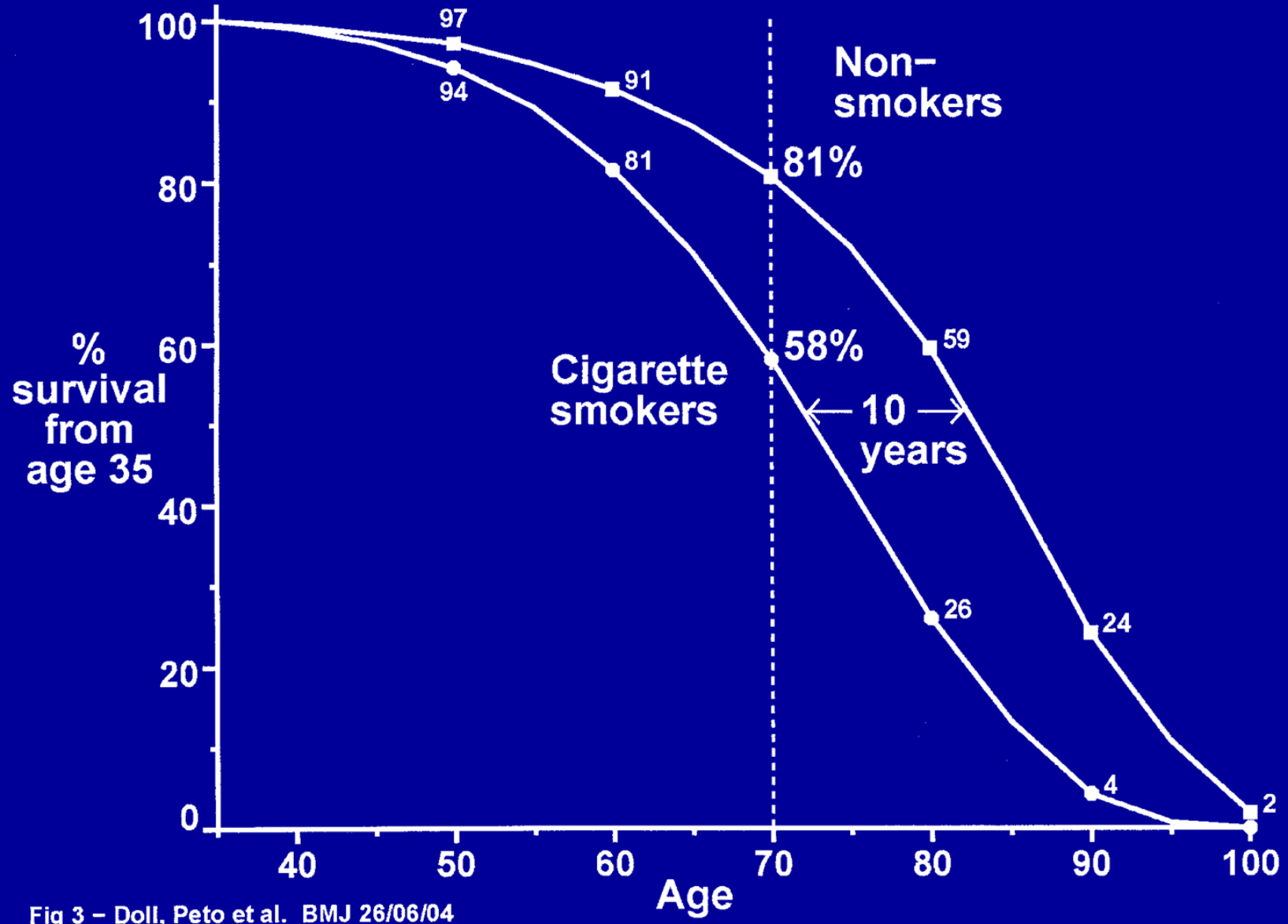


Fig 3 – Doll, Peto et al. BMJ 26/06/04

Uses of Epidemiology, cont'd

- Identifying risks in terms of probability statements
  - DES (Diethylstilbestrol) daughters
- Design and conduct experiments to evaluate, control and prevention measures.
  - Can stop-smoking education campaigns help prevent teen smoking?
- Make meaningful comparisons of disease frequency between
  - Diseases (e.g., causes of death)
  - Population subgroups (e.g., men/women)
  - Places (e.g., urban/rural)
  - Time periods (e.g., before/after intervention)
- **Public/Population health practice, policy & planning**

Epidemiology: the Basic Science of Public Health

PUBLIC HEALTH WORKS BY:

- Defining a health problem
- Identifying risk factors associated with the problem
- Developing and testing population-level interventions to control or prevent the causes of the problem
- Implementing interventions to improve the health of the population; and
- Monitoring those interventions to assess their effectiveness

http://library.umassmed.edu/ebpph/top25.cfm

Epidemiology in Action (Holmstrom 2003)

Table 1. Drivers Involved in Fatal Crashes and Driver Involvement Rates by Age Group, 2000

	Age Group (Years)							
	15-20	21-24	25-34	35-44	45-54	55-64	65-69	70+
2000 Population (Percent)	8.7	5.2	13.6	16.3	13.5	8.7	3.4	9.2
Drivers Involved in 2000 Fatal Crashes (Percent)								
Single-Vehicle	18.5	12.8	21.5	18.9	12.6	7.1	2.2	5.9
Multi-Vehicle	12.3	9.2	20.4	20.2	15.6	9.2	3.0	9.8
All Fatal Crashes	14.6	10.5	20.8	19.7	14.6	8.4	2.7	8.4
1999 Licensed Drivers* (Percent)	6.8	6.7	19.6	22.3	18.6	11.8	4.5	9.9
Drivers Involved in 1999 Fatal Crashes per 100,000 Licensed Drivers	64.7	45.2	32.1	26.4	22.2	20.9	19.7	26.8

* 2000 data not available.

"In 2000, 14 percent of all the drivers involved in fatal crashes were between 15 and 20 years old."

Website: http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2000/2000ydrive.pdf

Link to more studies: NHTSA Research and Development site

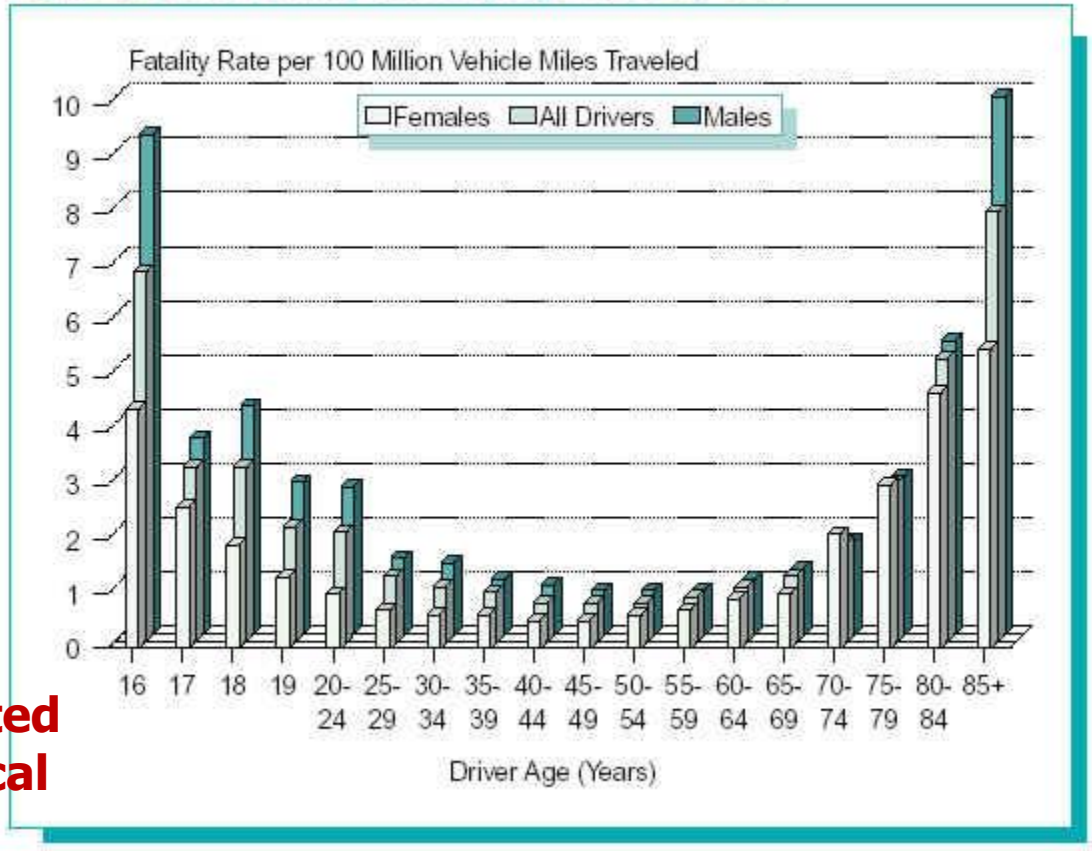
Source: Traffic Safety Facts 2000 DOT HS 809 336

National Center for Statistics & Analysis, Research and Development, 400 Seventh Street S.W., Washington, D.C. 20590

"The fatality rate for teenage drivers, based on estimated annual travel, is about 4 times as high as the rate for drivers 25 through 69 years old."

Restricted or Graduated Driver's Licenses implemented using epidemiological evidence

Figure 2. Driver Fatality Rates by Age and Sex, 1996



Website: http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2000/2000ydrive.pdf

Link to more studies: NHTSA Research and Development site

Source: Traffic Safety Facts 2000 DOT HS 809 336

National Center for Statistics & Analysis, Research and Development, 400 Seventh Street S.W., Washington, D.C. 20590

Common Control & Prevention Approaches

LEVEL: Primary: prevention of new cases

DESCRIPTION: Promote general health and avoid risk factors for disease - utilize protective measures to prevent susceptibility and pre-symptomatic disease

EXAMPLES:

- Stop smoking or choose not to start
- Avoid areas where people are smoking

Common Control & Prevention Approaches

LEVEL: Secondary: reverse or delay disease progression

DESCRIPTION: Early detection and timely treatment

EXAMPLES:

- Routine pulmonary function tests for those at risk
- Medicine to help patients breath more easily
- Smoking cessation programs if patient smokes

Common Control & Prevention Approaches

LEVEL: **Tertiary:** reverse or delay progression to further complications

DESCRIPTION: **Rehabilitation and prevention of further disease or disability**

EXAMPLES:

- Oxygen therapy
- Facilitating ambulation with technical device

Disease Prevention and Management Continuum

Well Population Primary Prevention	At Risk Population Secondary Prevention	Established Disease	Controlled Chronic Disease
		Tertiary Prevention	
•Surveillance of diseases & risk factors •Promotion of healthy behaviours •Creation of supportive environments •Universal & targeted approaches	•Screening •Case finding •Periodic health examinations •Early intervention •Medication to control •Universal & targeted approaches	•Treatment and acute care •Complications management •Self-management	•Continuing Care •Maintenance •Rehabilitation •Self-Management
Health Promotion	Health Promotion	Health Promotion	Health Promotion

Prevent movement to at-risk group

Prevent progression to established disease

Prevent progression to complications and/or hospitalizations

http://www.esourceresearch.org/Extras/Exercises/tabid/245/Default.aspx

Epidemiology as a Population Science

- Epidemiology studies humans in the aggregate i.e. groups
- Epidemiology compares the pattern of disease in populations over time, between places and in different types of people
- Populations are composed of unique individuals
  - No epidemiological study can be done on one person
    - (Although can be done on very small groups – eg. Lind)
  - Results may not generalise to other populations
- **Without the study population's details it is not possible to draw appropriate conclusions**
  - Health service/public health purposes
  - Also applies to causal research

What is a Population?

- The common definition of a **population** is "All the inhabitants of a given country or area considered together…"
- A "population" can also be groups of individuals that share a common thread
  - Clinical populations
  - Subgroups of the population by age, race, etc…
- Whole populations may be examined, but more frequently samples of the population are studied.
  - Samples that are studied must be representative of the population for the results to be generalized to the total population.

Torrence 1997

Defining a Population

A group of individuals defined by certain shared characteristics

- Personal Socio-demographic factors
  - Age, gender, race/ethnicity
- Genetics
- Member of an organization
  - Site of work or other activity
- Place of residence
  - Community, city, country
- Time or period under observation

The population so defined is the *base* or *denominator* for a set of cases

Identifying right population often difficult

- Important particularly if trying to define a disease frequency in a population at risk

Drake 2011

- Populations comprise individuals, families, groups and communities
- Epidemiology seeks variation in disease pattern over time, between subgroups and between places
- Understanding such variation yields knowledge on causation and prevention of disease

Figure 2.1

Bhopal 2002

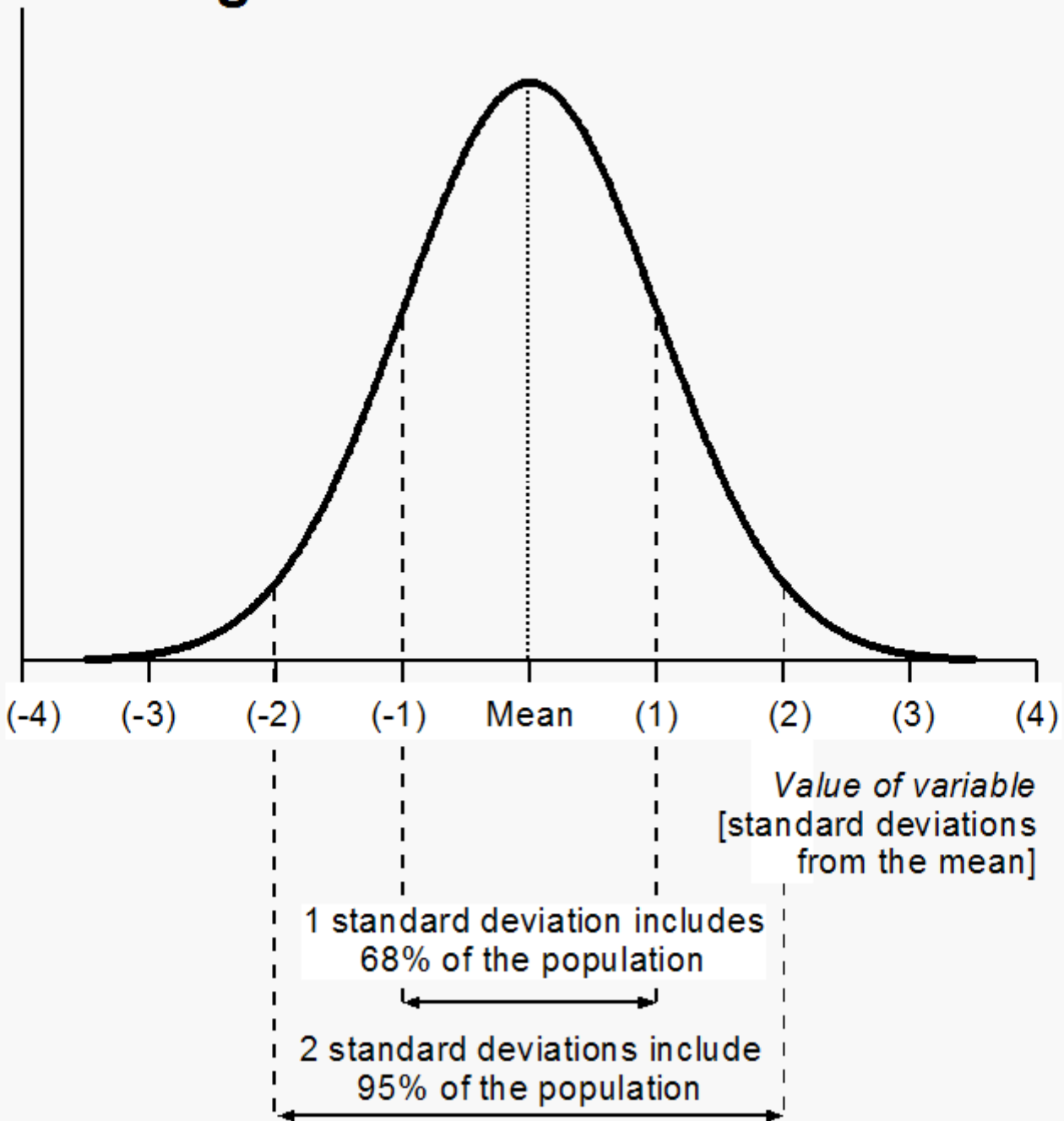
Have you selected the right population?

Intervention Implications of Population Perspective:
Geoffrey Rose on sick individuals and sick populations

Rose (1992) "The Strategy of Preventive Medicine"

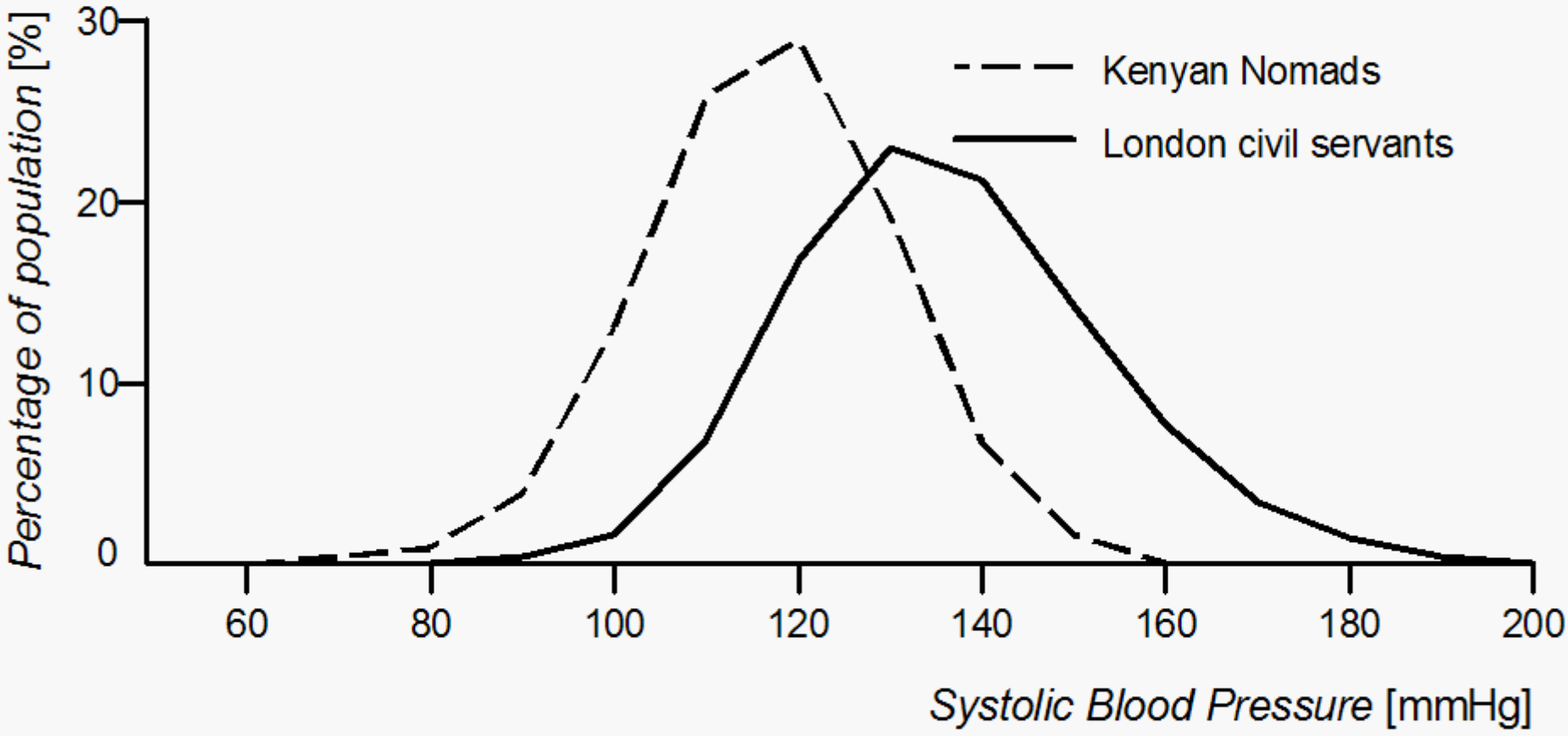
- Central propositions:
  - People with overt diseases and health problems – eg. hypertension, alcohol problems or obesity - are simply at one end of the disease spectrum or distribution
  - The most effective way to reduce the prevalence of overt problems is to shift the entire population distribution rather than by trying to eliminate the high-risk tail

Figure 2.3 A normal distribution



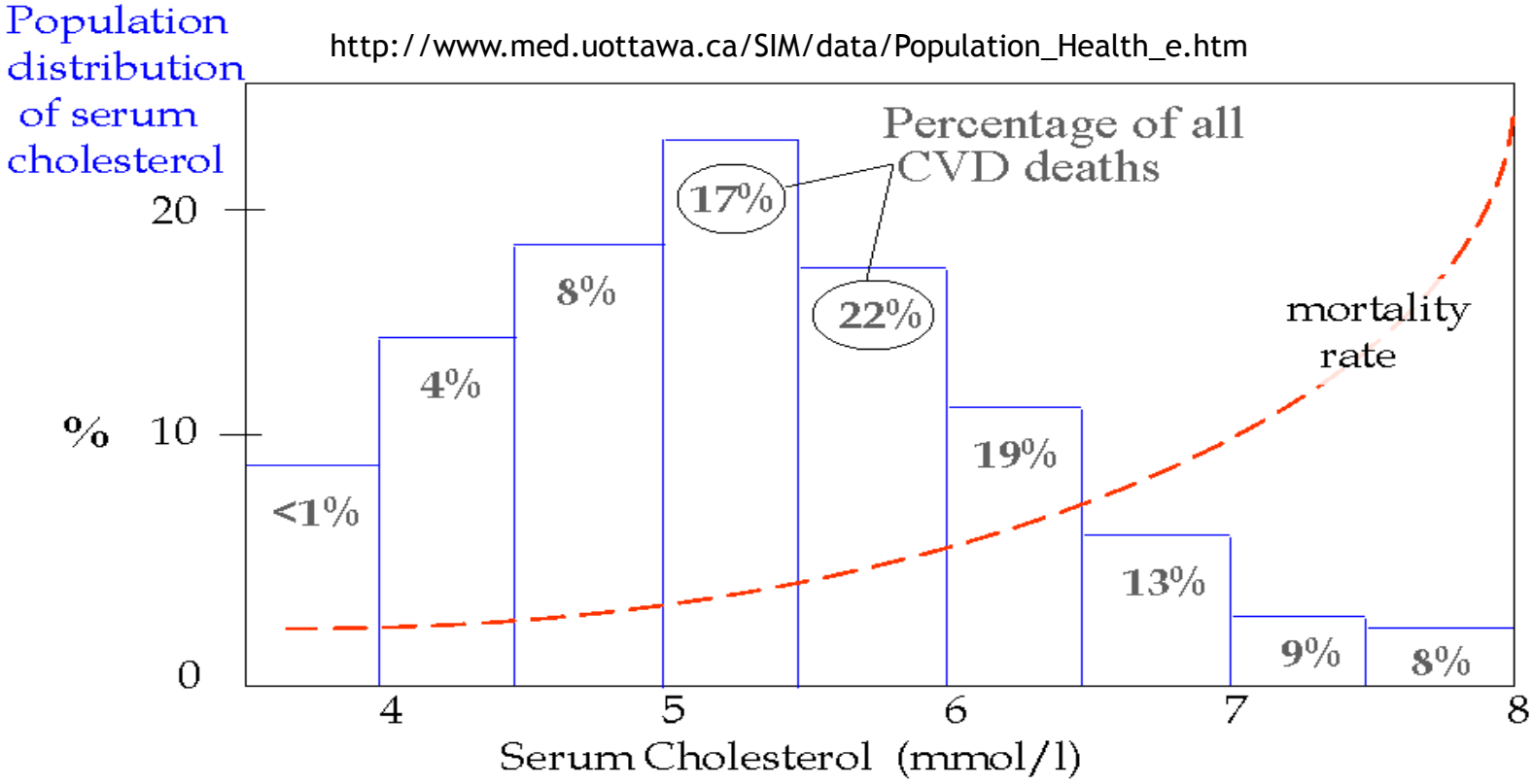
Bhopal 2002

Figure 2.2 BP distributions in Kenyan nomads and London civil servants



Bhopal 2002

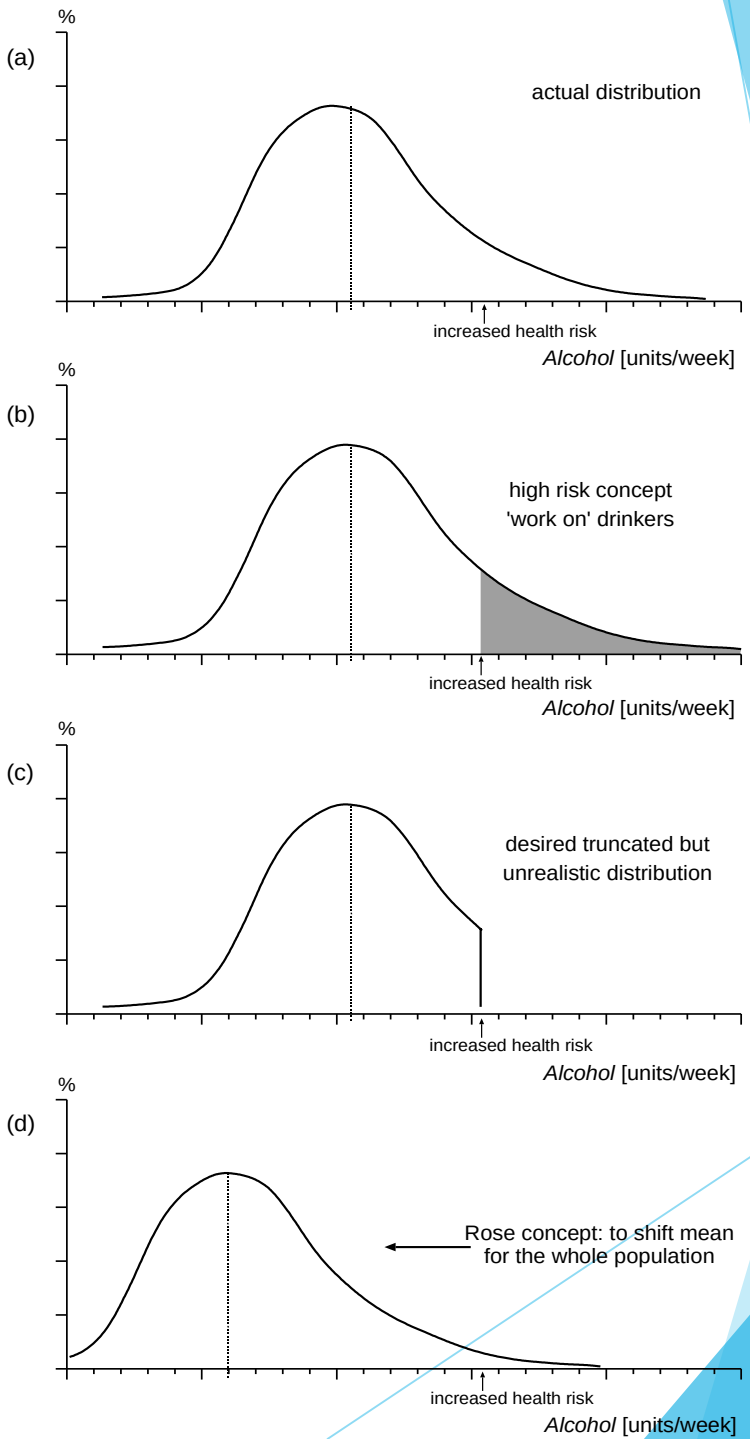
CVD Mortality by level of Serum Cholesterol Where Do the Deaths Occur?



- Serum cholesterol in the population roughly normally distributed
- Mortality rises steeply at higher levels of serum cholesterol
- Majority of deaths occur at mid-range simply because there are many more people
- Reducing cholesterol a small amount in the whole population prevents more deaths than reducing cholesterol a large amount among high-risk population

Prevention Approaches according to Rose

Because population profile determined by “overarching” factors, influence those factors to shift whole profile



Bhopal 2002

Population Health Planning & Management: Prevention Approaches

High-Risk Approach:

- Target group of individuals at high risk
- Strive for strong risk factor control
- May require clinical action to identify the high risk group and to motivate risk factor control.

Population Health Planning & Management: Prevention Approaches

Population-Based Approach:

- Preventive measures widely applied to an entire population (public health approach)
- Strive for small absolute change among many persons
- Must be relatively inexpensive and non-invasive
  - large-scale cultural/behavioural shifts

DISCUSSION:

Epidemiology uses populations as the basis for the study of disease and its treatment, control, and prevention. Rose recommends “whole population” over “high-risk” approaches.

- What are some implications (advantages & disadvantages) for health planning and management of a high-risk vs a whole population approach?

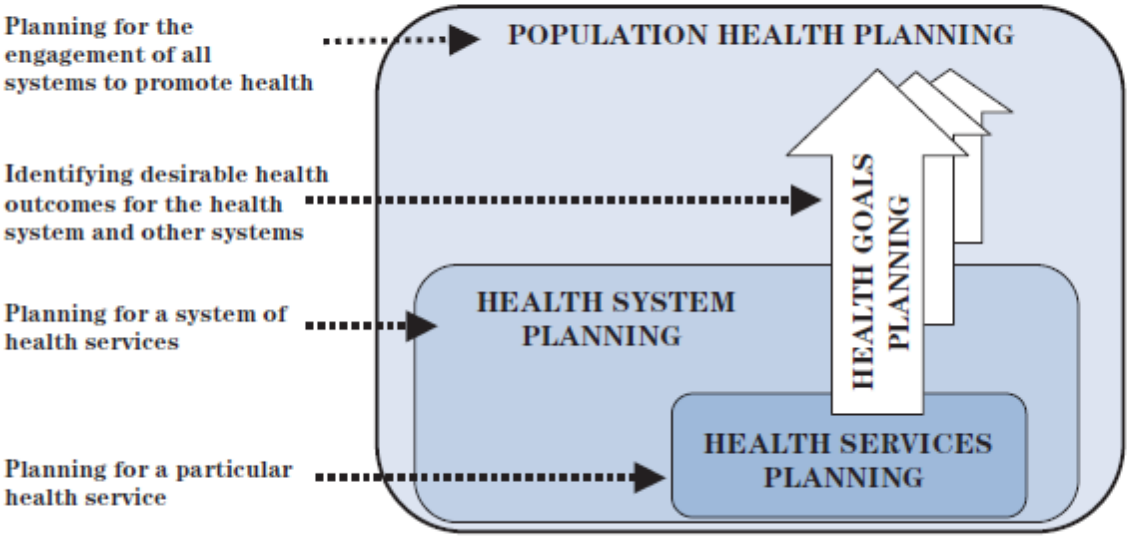
EPIDEMIOLOGY INTRODUCTION SUMMARY

- **The focus on population is the defining feature of epidemiology**
  - Distinguishes it from clinical research and the other medical sciences, which primarily study the individual, the organ and the cell
- **Epidemiological studies require an understanding of the composition, structure and culture of the population under study.**
- **Epidemiology is a "Population Science"**
  - **Studies disease patterns in populations**
  - **Builds upon demographic population data**
    - Quantitative
  - **Applies the findings to improve the health of population groups**
    - From Public Health to Population Health Planning & Management.

Bhopal 2002

POPULATION HEALTH PLANNING & MANAGEMENT

Figure 4: Connections Among Planning Types

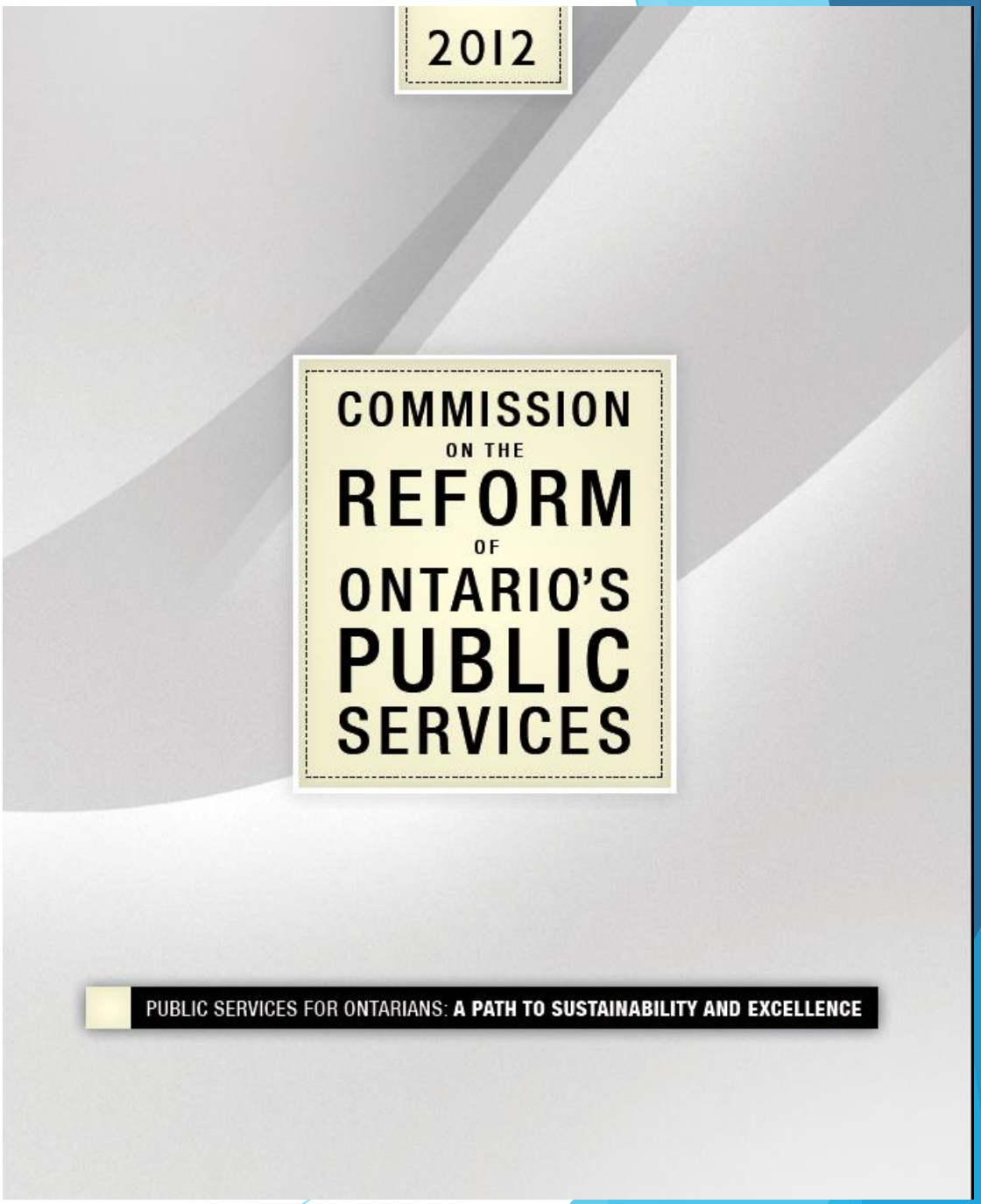


Ardal et al. 2006: Module 1

What's pushing the shift to population health planning & management?

Drummond Report

- 105 recommendations on health care ...



2012 Illinois Performance Excellence Bronze Award

Second Curve of Health Care

April 2013

hospitals in pursuit of excellence™
Accelerating Performance Improvement



TRANSFORMING HEALTH CARE THROUGH RESEARCH AND EDUCATION

HRET
HEALTH RESEARCH & EDUCATIONAL TRUST
In Partnership with AHA

Hospitals and Health Care Systems of the Future

Many common challenges:

- Shifting **demographics** of patients and the workforce
- Continuous **advances in technology** and increasing adoption speed
- Growing demand for patient and family **engagement**
- Increasing demand for cost and quality **data transparency**
- Challenging **variations** in care
- Need for **clinical integration** and **care coordination**
- Drive toward **cost efficiency**
- Transition to **value-based reimbursement** focused on outcomes

- Greater focus on **population health management** approaches

American Hospital Association

The Triple Aim

http://www.ihi.org/engage/initiatives/TripleAim/Pages/default.aspx

http://www.ihi.org/communities/blogs/_layouts/ihi/community/blog/itemview.aspx?List=81ca4a47-4ccd-4e9e-89d9-14d88ec59e8d&ID=50

Population Health and Health Care
Exploring a Population Health Approach in Health System Planning and Decision-Making

- The Public Health Agency of Canada (PHAC) defines the population health approach as
  - "an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups."
- Recognizes multiple determinants of health, many outside the traditional scope of the health system
- Focuses on the distribution of health across populations and the socio-economic gradient
- Recognizes the importance of intersectoral partnerships
  - at the community level
  - across and among different levels of government
  - and between health care providers and other professionals who have a role in influencing health

(Huynh 2014)

Developments Fuelling the Population Health Approach in Canada

- Accreditation standards that require health care organizations to display competencies in population health monitoring and planning
- Increased media attention on examples of health inequalities across Canada
- Public expectations for an integrated, person-centred system
- Health system performance frameworks that include “equity” and “sustainability” as dimensions of quality
- Increased focus on outcome measurement among health system funders
  - **Better ‘bang’ for health dollars**

(Huynh 2014)

Population Management vs Population Health?

Health planning focus shifting:

- from care provided and paid for at an individual level
- to managing and paying for health care services for defined populations

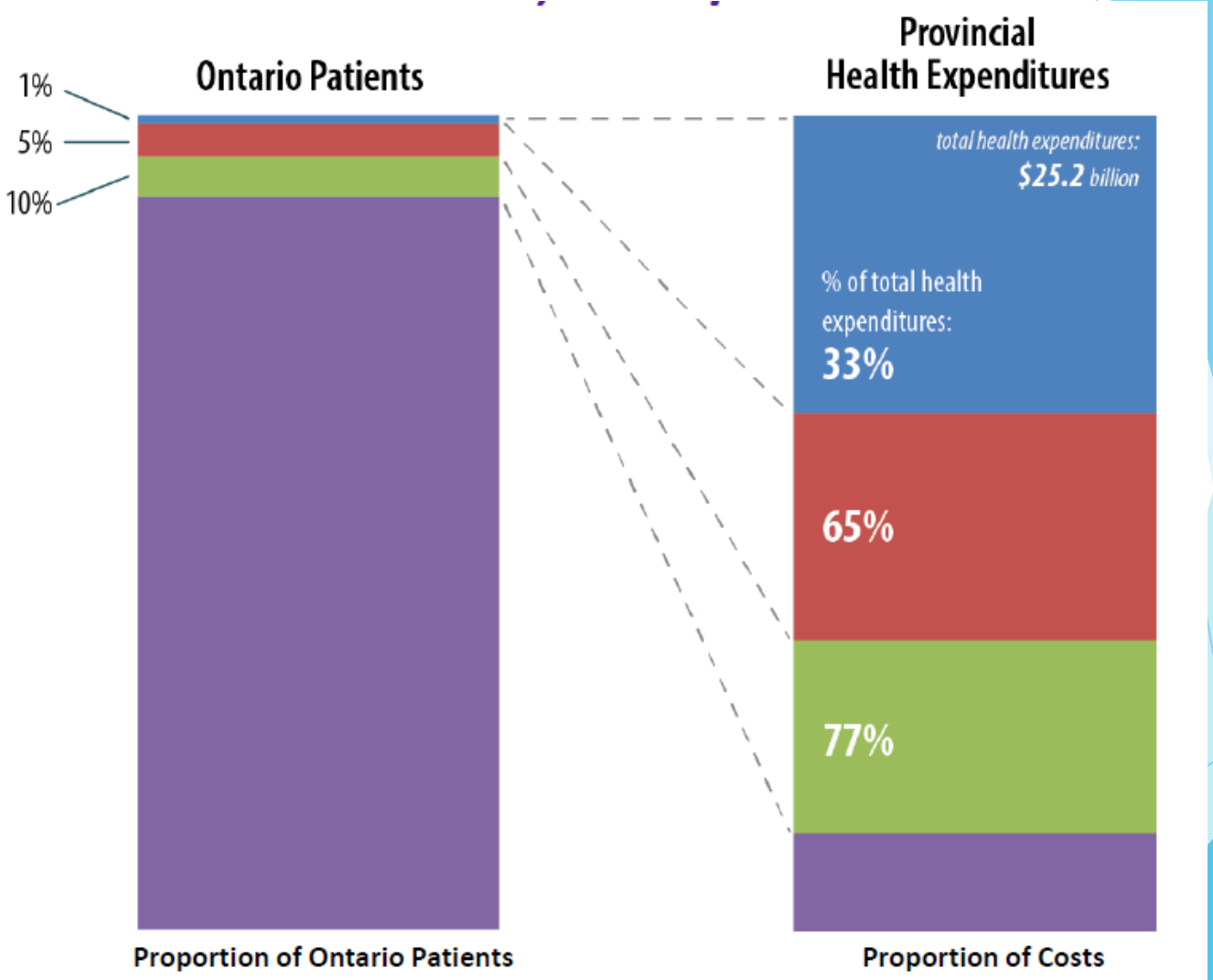
- IHI calls this approach “population management” to distinguish it from “population health” (which focuses on the broader determinants of health)
- Population management currently *population medicine*
  - design, delivery, coordination, and payment of health care services for a population using resources available within the health care system

Population Management vs Population Health?

Momentum to bridge the population health and health care perspectives?

- Organizations required to understand and address the broader social, environmental, and behavioral determinants of health
  - to achieve better outcomes
  - improve the care experience
  - control total cost
- Population management/medicine (health care focus) and population health (broader determinants of health) blur with certain populations
  - e.g. comprehensive care designs serving most complex, high-risk, and costly patients

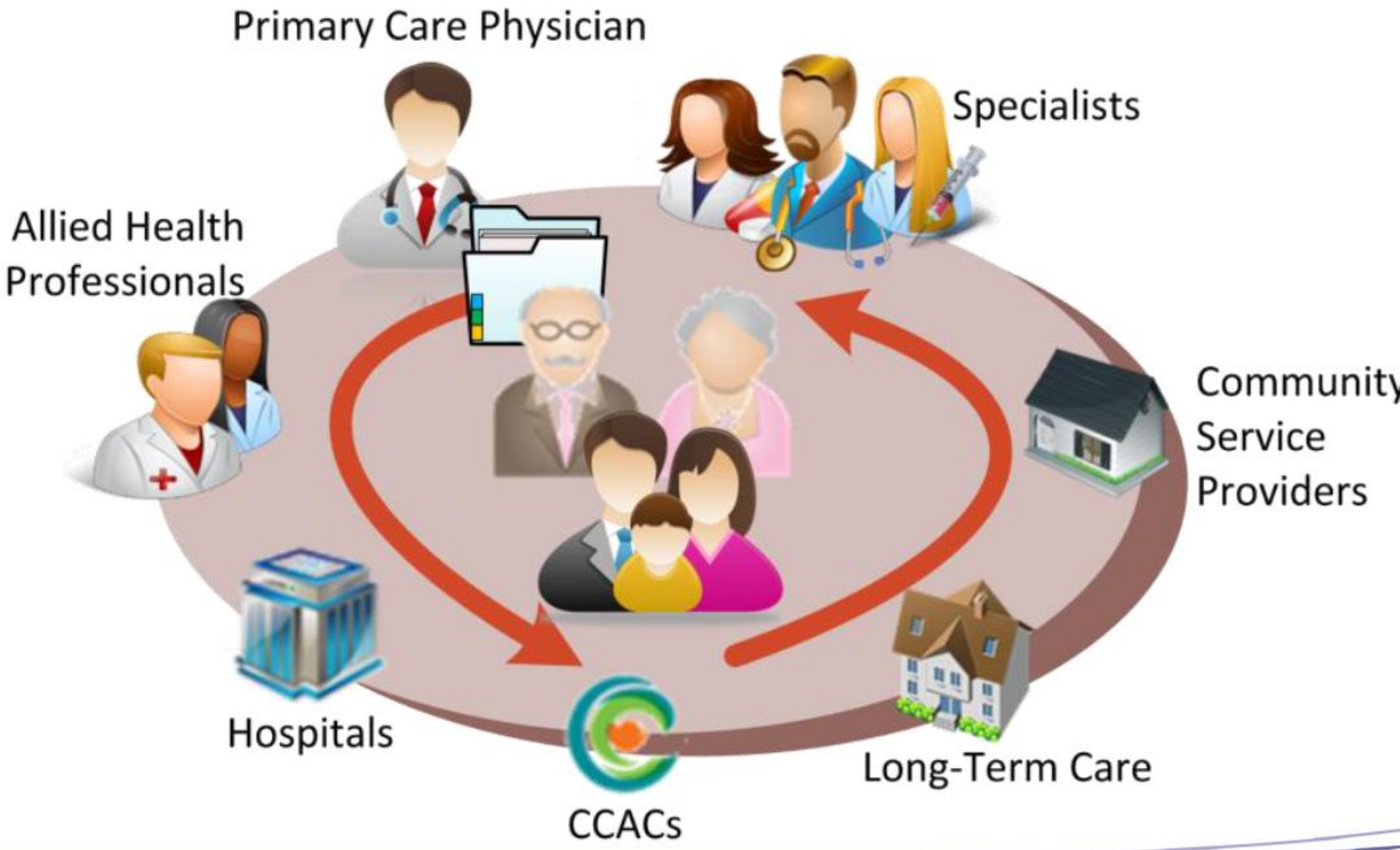
Distribution of Costs, 2010/11



South West LHIN, 2013


Health Links in
Toronto Central LHIN
North West
Toronto
North East Toronto
East Toronto
Central West Toronto
Mid East
Toronto
West Toronto
Don Valley
Greenwood
Mid West Toronto
South Toronto
Mid West Toronto
Don Valley Pkwy
Eglinton Ave. E.
Victoria Park Ave
Eglinton Ave. W.
Bloor St W
Yonge St
Gardiner Expr Way
Queen Elizabeth Way
N
0
5
10 km
Health Links in TC LHIN
LHIN boundary
Data Sources:
Toronto Central LHIN
Copyright © 2013
Toronto Community Health Profiles
Partnership: Not for commercial use

Your Health Care Team, Working Together



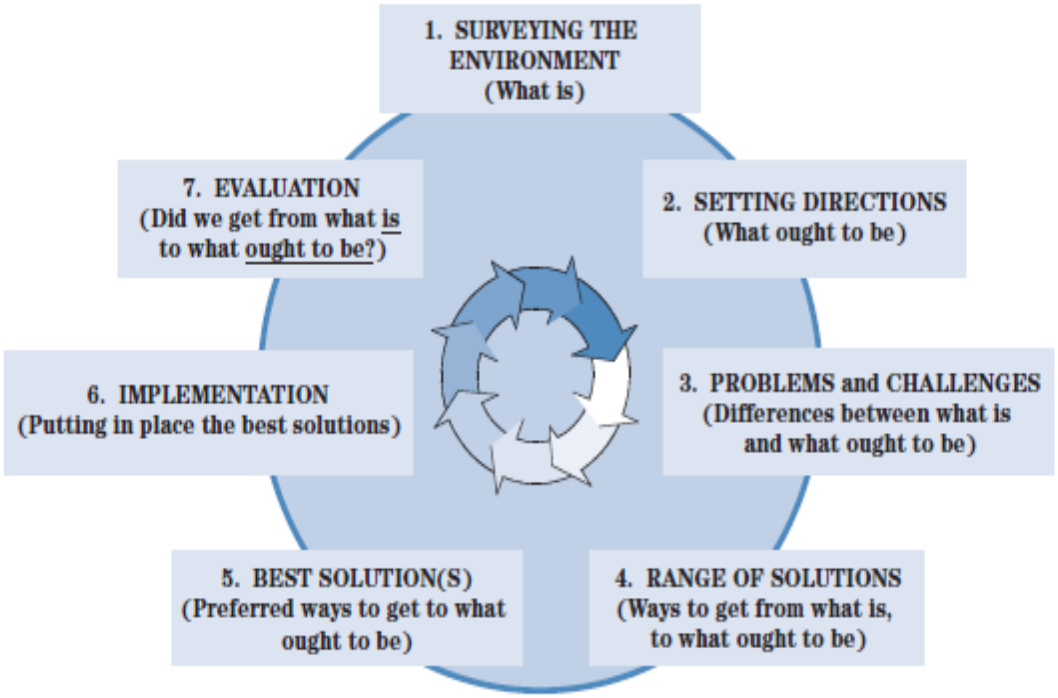
Common Elements in Health Planning Models

1) Prepare and plan
2) Engage the community
3) Develop a goal or vision*
4) Conduct community health assessment(s)
5) Prioritize health issues
6) Develop community health improvement plan
7) Implement community health improvement plan
8) Evaluate and monitor outcomes

Fisher & Pearsol 2012

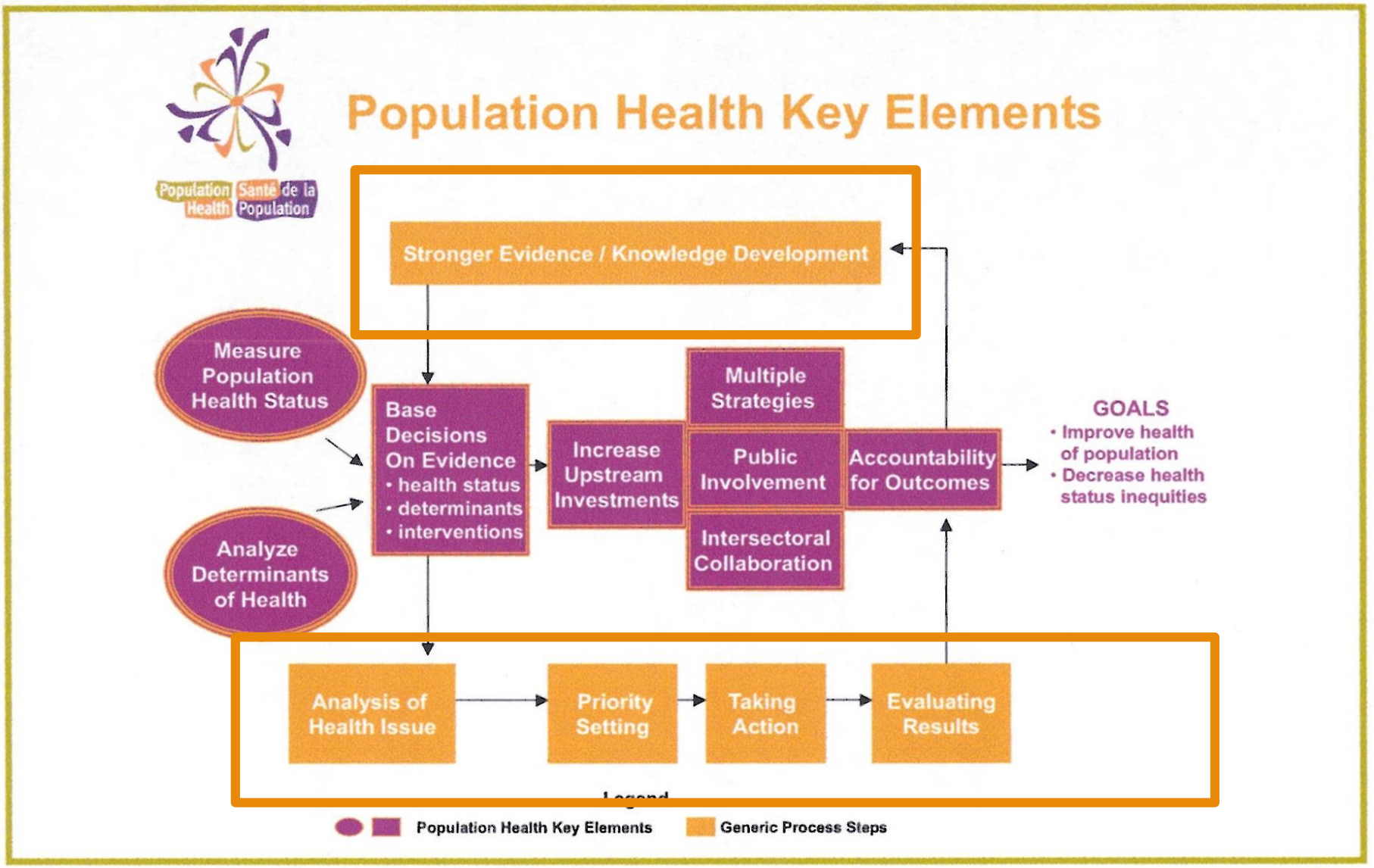
POPULATION HEALTH PLANNING & MANAGEMENT

Figure 2: The Planning Cycle



Ardal et al. 2006: Module 1

Strategic Health Directorate of Health Canada, 2001



http://www.med.uottawa.ca/SIM/data/Models/Population_health_template_tool.htm

Preconditions For Pursuit Of The Triple Aim Berwick et al., 2008

- Specifying a population of concern
  - "Population" need not be geographic
    - the citizens of a county
    - all of the diabetics in Ontario
    - people in Toronto below 300 percent of poverty
    - members of Group Health Cooperative of Puget Sound
    - or even "all of the people who say that Dr. Jones is their doctor"
  - "Only when the population is specified does it become, in principle, possible to know about its experiences of care, its health status, and the per capita costs of caring for it."

Data Challenges to Identifying Populations

- Variations in the health of subpopulations at the community or neighbourhood level lie hidden beneath the reporting of averages.
- Data required at small area level not available through traditional population health data sources
  - Canadian Community Health Survey (CCHS) geography
  - Mandatory long-form census cancelled
- Efforts to collect local population health data
  - TC LHIN hospitals collecting patient-level health equity data through hospital administrative records
- Efforts to link existing data sources
  - ICES Data Linkage initiatives

(Huynh 2014)

WE ASK BECAUSE WE CARE.

Will you please provide information about yourself?

We are conducting a research study to learn the best ways to collect patient information so we can increase access to services and strengthen the quality of care.

This study will only take around 5 minutes of your time.

The Principal Investigator for this study is Dr. Samir Sinha. Please forward your questions to Marylin Kanee at mkanee@mtsinai.on.ca or 416 586-4800 ext. 4722.

Equity. Good for our health.

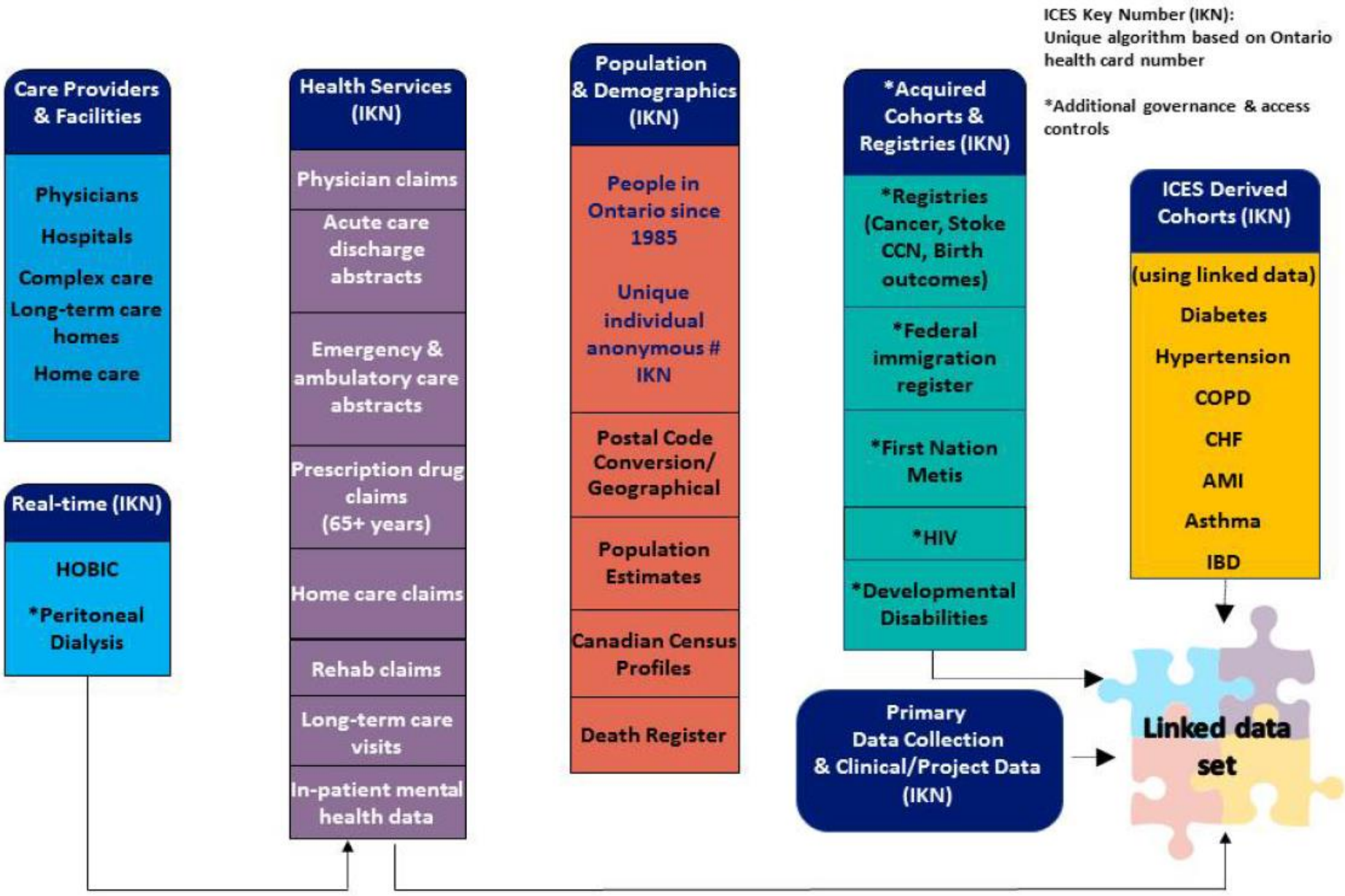
Toronto Public Health

St. Michael's

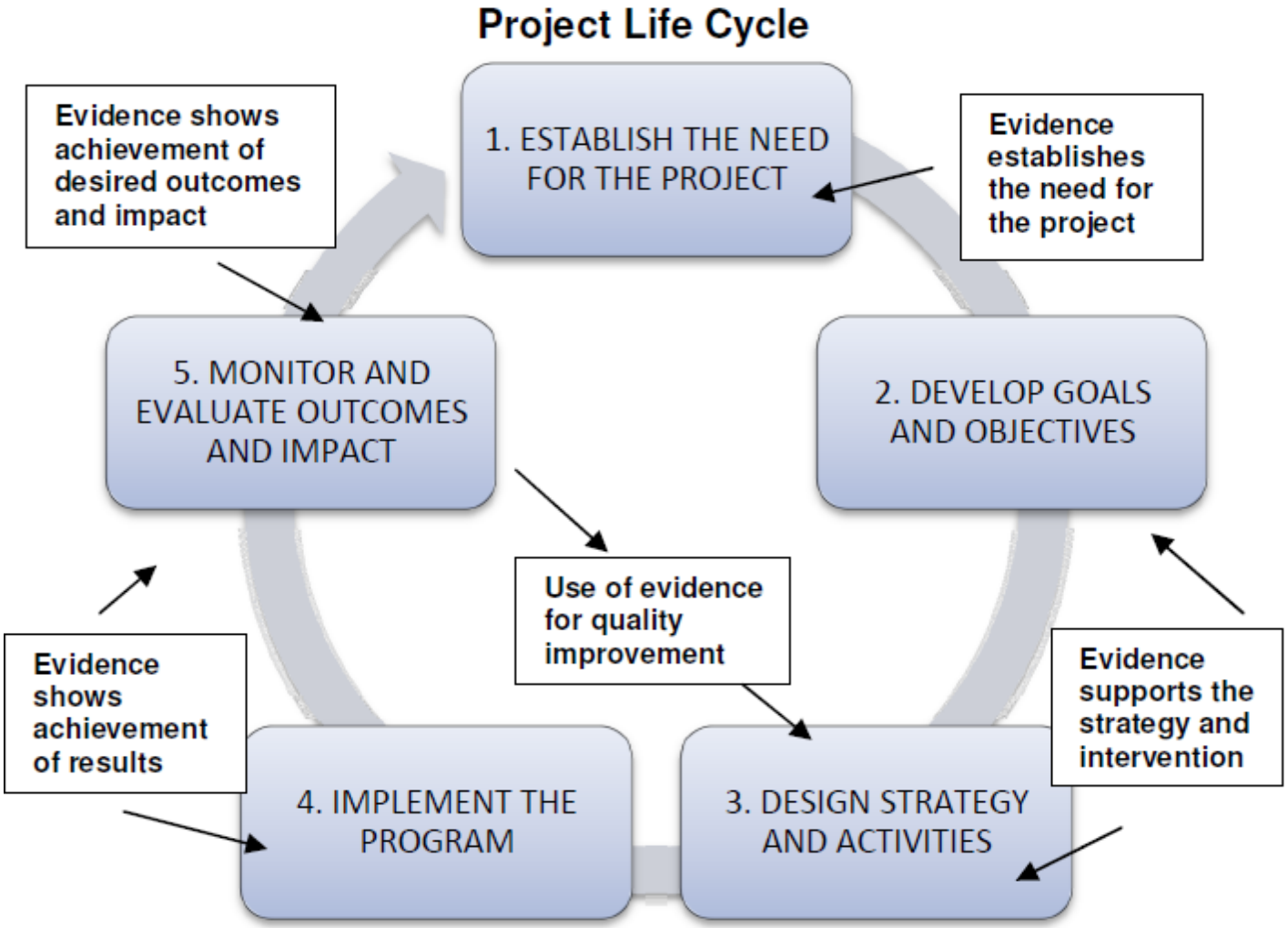
camh

Mount Sinai Hospital

ICES Data Repository: *De-identified and Linkable*



POPULATION HEALTH PLANNING & MANAGEMENT: Using Evidence



NGOConnect e-news Issue No. 46/ January 2012

Public Health Ontario
PARTNERS FOR HEALTH

Santé publique Ontario
PARTENAIRES POUR LA SANTÉ

CONTACT US | NEWSROOM | CAREERS | PRIVACY & DATA ACCESS | FRANÇAIS

Search the site...

OHPP HOME | MY PLANS | LEARNING CENTRE | ABOUT OHPP | TRAINING AND CONSULTATION SERVICES

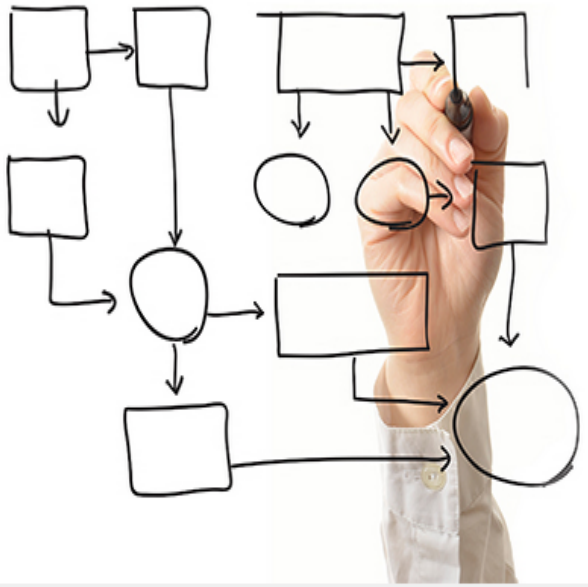
Home > Services & Tools >

National Collaborating Centre for Methods and Tools
Centre de collaboration nationale des méthodes et outils

Online Health Program Planner

Interactive worksheets that help you make evidence-informed decisions.

Get started ›



Six Program Planning Steps

Make evidence-informed decisions about your program.

Tell me how ›

Online Business Case Creator

Make recommendations about your project risks and benfits.

Tell me how ›

Project Management Tools

Develop implementation plans to manage your project.

Tell me how ›

http://www.publichealthontario.ca/en/ServicesAndTools/ohpp/Pages/default.aspx

Websites

- Public Health Ontario : http://www.publichealthontario.ca/
- Public Health Agency of Canada: http://www.phac-aspc.gc.ca/index-eng.php
- US Centers for Disease Control and Prevention: www.cdc.gov
- International Epidemiological Association: www.IEAweb.org
- World Health Organization: www.who.int
- Epidemiology Supercourse: www.pitt.edu/~super1/

Epidemiology in Health Care Administration

- Definition & History Epidemiology
- Epidemiological Concepts
  - Types & Uses of Epidemiology
  - Populations*
  - Population Interventions
- Population Health Planning & Management
  - Models
  - Examples
  - (Epidemiological) Evidence in the Planning Cycle