Public Health

chapter 1

History over time

1830s: Health Protection pages 5-10
1840-70s: Hygeine Movement
1880-1940s: Contagion Control
1950-1980s: Filling Holes in medical care system
1980-2000: Health promotion/Disease Prevention
2000s: Population Health

today: Population health: focusing on actions in community + population level (more on p. 10)

3 Approaches

(chart on p. 15)

① Traditional Health approach
ex: communicable disease control
def: Group & community based interventions directed @ health promotion + disease prevention

② Social Interventions
def: aimed @ achieving non-health related goals (like social justice, economic growth)
ex: interventions that improve the built environment, increase education, address socioeconomic disparities

③ Healthcare
def: delivery of services to individuals on a 1 to 1 basis
ex: vaccines, screening for disease, medications

Population Health Components

p. 11

① Health Issues
Physical + mental health; cosmetic, genetic + social functioning

② Populations
local, national & global
Communications

③ Society-wide concerns
disasters, climate change, technology hazards, infectious disease

④ Vulnerable Groups
How do we define vulnerable groups?
ex: immunosuppressed, genetic vulnerability

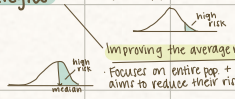
Public Health 3.0

Reimagined + broadened approach
- engage multiple sectors + community partners to generate collective impact
- improve social determinants of health

Reducing Risk Strategies

Reducing high risk (p. 12)
- Focuses on those with the highest probability of developing disease
- aims to bring risk down close to those of the general population

Improving the average risk
- Focuses on entire pop + aims to reduce their risk



Determinants of health/Disease

p. 16

Examples:
- Behavior: smoking, not wearing a seatbelt
- Infection: long-term exposure to infection → Disease
- Genetics: impact of genetic factors
- Geography: local geological conditions (like radon exposure)
- Environment: built environment + air pollution
- Medical Care: vaccines, preventitive care, care post-disease development
- Socioeconomic/cultural: wealth impacting access to med. care; religious beliefs about treatment

Built Environment def: the physical environments built for use by humans

Changes in populations over time

① Demographic Transition
Describes the impact of falling childhood death rates + extended life spans on the size + age groups of populations
- Inc. elderly population creates a heavier burden of disease, aging becomes a public health issue

② Epidemiological Transition
(public health transition)
As social + economic development occurs, diff. types of disease become more prominent
- Developing countries: communicable disease, malnutrition, child infect.
- Developed: noncommunicable + chronic disease

③ Nutritional transition
countries move from poorly balanced diets (low nutrient protein, calories) to diet of highly processed foods (fats, sugars, salts)
- must consider consequences of under + over nutrition

Levels of intervention

p. 39

① Primary: Takes place before the onset of disease (prevention)

② Secondary: After development of disease/risk factor but before symptoms

③ tertiary: after occurrence of symptoms but before irreversible damage

Classifications of Recommendations

look @ table 2.3 on p. 37

A = must - strong recommendation
B = should - in general should be used
C = may - requires use of judgement on individual basis
D = don't - enough evidence against rec.
I = insufficient - not enough evidence to pick a side

Net benefit: consider the balance of benefits - harms

2 basic rates

① Prevalence
# of people living with particular disease / # of people in the "at-risk" population

② Incidence =
new cases of disease in a year / # people in the @ risk popula.

p. 26 (box 2.1)

PERIE process

Problem: what is the problem?

Etiology: what if/are the contributory causes?

Recommendation: what works to reduce the health impacts?

Implementation: How can we get the job done?

Evaluation: how well does the intervention work in practice?

Population Comparisons

p. 29-30

Studies that use info from populations or groups without studying the individuals
- Est. group associations (like a hypothesis that requires investigation @ ind. level)
- Beware of confounding variables

Case Control Study

(Seq. I)

- Cases with disease are compared to controls w/o disease
  - det. whether the cases/controls were exposed to potential "cause"

Contributory Cause

p. 30

very specific def. of causation that meets 3 requirements

① The "cause" is associated with the "effect" @ the individual level
Ex: people w lung cancer are more frequent smokers than those without lung cancer

② The "cause" precedes the "effect"
Ex: cig. smoking comes before the development of lung cancer

③ Altering the "cause" alters the "effect"
Ex: reducing smoking reduces lung cancer rates

Natural experiment

p. 34, table 2.1

Sometimes controlled experiments are unethical or impossible, to we look at ancillary criteria to est. cause-and-effect relationship

Cohort Study

people with the "cause" + people without it are monitored to see if they dev. the "effect"

Randomized Controlled Trials (RCT)

p. 31

- using randomization, ind. are assigned to either have the "cause" or not + are monitored for dev.

Types of evidence

p. 45 box 2.7

Quantitative Studies: large sample, focus on numbers

Qualitative Studies: looks in depth @ small sample, can help explain quantitative findings

Tools of Population Health

Ch 4

Ch 3

Types of Data

p. 57 table 3.1

- Sentinel Surveillance
  - Ex: flu monitoring + change in strain
  - Early warning of previously unrecognized events
- Syndromic Surveillance
  - Use of symptom patterns to ID possible new/increased disease
- Self Reporting
  - Ex: Adverse effect monitoring of drugs + vaccines by those affected
- Survey Data/Sampling:
  - Makes conclusions about overall population + responses from representative samples
  - Ex: Disease registries
- Vital Statistics:
  - Required by law; ID leading cause of disease, birth + death
  - Ex: birth, death, marriage, divorce, community disease
- Single/Small # Cases:
  - Alerts to new disease/resistant disease; spread to area beyond initial
- Social Media
  - Data on outbreaks using key words from social media

Population Health Status Measure

p. 58-60

- Life expectancy
- Infant mortality rate
- Under 5 mortality rate
  - (better than infant, most kids who live past 5 live into adulthood)
- DALY (Disability Adjusted Life Year)
  - Allows for comparisons & changes based on categories of diseases & conditions
  - p. 60-61 for specific findings!!!
- HALE (Health Adjusted Life Expectancy)
  - starts w life expectancy & then factors in measurements of the quality of health
  - mobility, cognition, self-care, pain, mood, sensory organ function

Perception of Potential Harms + Benefits

p. 64

- Dread Effect:
  - Hazards with easily visualized & feared consequences
  - Ex: why we fear shark attacks instead of drowning
- Unfamiliarity effect:
  - How familiar we are with a harm or benefit influences how we translate it for our own situation
  - Ex: having a friend w cancer
- Unpredictability effect:
  - hazard out of our control seem more threatening
  - ex: car crashes less threatening than plane crashes

Effective Communication (Success)

p. 65-66

- Simplicity: short, memorable statements
  - Ex: "Just say no"
- Unexpectedness: get people's attention w counterintuitive fact ex: challenge a myth
- Concreteness: concrete, easily visualized examples
  - ex: Bad breath to quit smoking
- Credibility: credible source of info
  - ex: from CDC
- Emotions: help people retain ideas
  - Ex: using fear recruitment to get them to quit smoking
- Stories: we remember and relate to realistic stories we hear about other people
  - Ex: "war stories"

High quality websites

- look @ table 3.4 on p. 64
- criteria sections: overall site quality, authors, info, relevance, timeliness, links, privacy

Risk-taking Attitudes

- understand attitudes about risk. It's important in analyzing how individuals make decisions about their own lives
- most of use are risk takers when conditions are intolerable + risk avoiders when they're intolerable
- Certainty effect
- vs
- Long-shot effect
- look @ box 3.6 on p. 71 for a case study example

Relationship between public health & social + behavioral factors

p. 78-79

- Influencing Behavior
  - ① shaping norms
  - ② enforcing patterns of legal control
  - ③ providing opportunities to engage in healthy behaviors
  - ④ encouraging selection of healthy behaviors as a coping strategy
- Complex Interactions:
  - there are diff levels of interactions
  - individual lifestyle factors
  - social & community networks
    - interpersonal
    - institutional/organizational
    - community
  - General socioeconomic, cultural & environmental conditions

Socioeconomic Factors

p. 81

- def: includes measures that are strongly related to income, including family income, education level, professional status

Culture

p. 82

- related to behavior, response to symptoms, acceptable interventions, response to disease & interventions

Religion

p. 83

- may affect social practices that determine risk, response to symptoms, acceptable interventions, response to disease

look @ table 4.3 & 4.4

Socioeconomic Gradient

p. 80

- people with higher SE status have better health outcomes

Health disparities

p. 85

- def: difference in health that is closely related to social or economic disadvantage
- occur in:
  - noncommunicable disease
  - environmental health & safety
  - Communicable disease

Social determinants of health

p. 88-86

① social status
② social support or alienation
③ Food
④ Housing
⑤ Education
⑥ Work
⑦ Stress
⑧ Transportation
⑨ Place
⑩ Access to health services

Downstream Factors:

directly involve the individual & could possibly be altered on their own (ex smoking)

Mainstream Factors:

Result from relationship of individual with larger group or population (ex peer pressure to smoke)

Upstream Factors:

Grounded in social structures & policies

Ex: gov sponsored tobacco quitting programs

Theory

p. 87

def: Set of interrelated concepts that presents a systematic view of relationships among variables in order to explain & predict events & situations

Model

p. 87

Combo of ideas & concepts taken from multiple theories & applied to specific problems in particular settings

Health Behavior Change

- health issues can be traced back to individuals
- some behaviors are harder to change than others
  - ex: behaviors with psych components

Health Belief Model

look @ table 4.6 on p. 89

- people's personal beliefs influence health behavior
- if people believe they're susceptible to something, they'll take action

Stages of Change Model

88-89

① Precontemplation: individual hasn't considered changing their behavior
② Contemplation: thinking about the benefits & barriers to change
③ Preparation: developing a plan of action
④ Action: change in behavior actually takes place
⑤ Maintenance: behavior becomes a permanent part of an individual's lifestyle

* table 4.7 on p. 90-91

Theory of Planned Behavior

p. 89

Intention is the main predictor of behavior

Intrapersonal

p. 88

- Focusing on characteristics of the individual, inc. knowledge, attitudes, beliefs, motivations, self-concepts, past experiences, & skills

Interpersonal

p. 92

consider influence of other people on individuals' behavior

Population/Community

p. 92

- explores factors within social systems

Social Cognitive Theory

p. 92

- focuses on interaction of individual & their social system

Must understand:
- individual characteristics
- influences in social & physical environment
- interaction among these factors

Diffusion of Innovation

- focuses on how a new idea, product, or social practice is differentiated & adopted into a population

4 Ps of Social Marketing

p. 95

① Product: ID behavior or innovation that is being marketed
② Price: ID barriers, benefits, & financial costs
③ Place: ID target audience & how to reach them
④ Promotion: organizing a campaign or program to reach target audience

Health Law, Policy, & Ethics ch.5

Interstate Commerce Clause
Ex: tobacco regulated because sold by 1 state to all others
- def: major source of federal authority in public health & healthcare
- used to justify wide range of involvement

Police Power: p. 102
US constitution doesn't explicitly mention health, so those decisions are largely left up to the states

Rights: p. 102
Protections afforded to individuals
created through
1. US constitution
2. state constitutions
3. laws passed @ federal or state level

Negative Constitution: 102
constitution allows for, but does not require gov. to act to protect public health or provide healthcare services

International law: p. 104
US constitution trumps even international law

Health Policy 104
subset of larger arena of public policy

Authoritative Decision
- decision made by individual or group that has the power to implement it
- ex: policies made by government or private groups

Health in all Policies Approach
- private + public entities work toward common goal to achieve improved health for all while reducing inequalities
- *cumulative efforts
- implies that health consequences should be considered when making all policies

Philosophies toward Role of gov: 106
* table 5.2 + 5.3 on p 106

1. Social Justice: equitable distribution of health as a social responsibility
2. Market Justice
- emphasizes individual, rather than collective responsibility for health

Quarantine: p. 109
Compulsory physical separation of those with a disease or risk of developing one

Isolation: separates sick people with a contagious disease from people who aren't sick
less restrictive, respects rights of people

Protection of human research subjects
yes?

Institutional Review Boards (IRBs) p. 111
- created in response to Belmont Report: outlines 3 basic ethical principles
1. Respect for persons
- individuals are autonomous agents
- person with diminished autonomy is entitled to protection
2. Beneficence
persons treated in ethical manner by making efforts to secure their well being
3. Justice
who should receive benefits of research & bear its burden?

International Health Regulations
- make U.S. only 11% for changes part of WHO

Public Health Emergency of Information Concern (PHEIC) p. 113
- can be declared by WHO's Director General
- allowed for unbinding disease control regulations, assistance, & communication with other nations regarding the threat