The Value of Health

PHIL 334: Pandemic Ethics

Questions about Rationing During COVID-19

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Question:
Is there a moral difference between **withholding** care and **withdrawing** care from someone in order to give it to someone else?

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Question:
Should we be aiming to maximize the sheer **number of lives saved**, ignoring facts about expected life years and quality of life?

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What are features that might matter?

Things That (Might) Matter

- What are the patient's **chances of survival**?
- What is the patient's **life-expectancy** (if they survive)?
- What will the patient's **quality of life** be like (if they survive)?
- How **old** is the patient? (Why might this matter?)
- How much **overall happiness** would be produced?

What **else** might matter?

Questions about Rationing During COVID-19

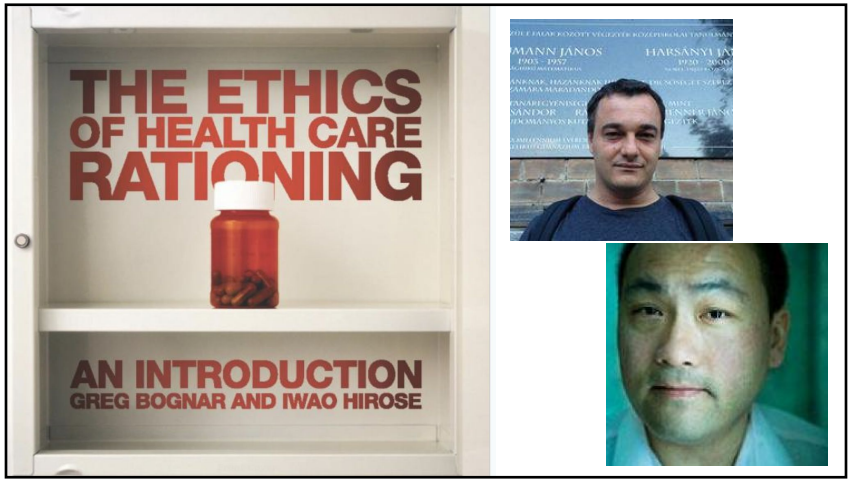
Question:
Should we prioritize the lives of **healthcare professionals**? What about the police, delivery workers, those involved in the supply chain for food, etc.? What about famous people?

Questions about Rationing During COVID-19

Question:
Should a **lottery** be used rather than some other method (at least in cases of "ties")?

Questions about Rationing During COVID-19

Question:
Should we prioritize **patients with COVID-19** over other patients requiring similar healthcare resources?



Well-Being and Health

The Objective of Healthcare:
Restore and maintain health and to prevent and alleviate suffering due to ill-health.

Problem:
Healthcare resources are finite.

"These allocation choices must be efficient and fair: they must lead to the best consequences while taking into account relevant moral constraints"

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Use health as a *metric* to compare different allocations of resources.

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Healthcare resources are finite.

Idea:
Use health as a *metric* to compare different allocations of resources.

Problem:
Health is not a natural quantity that can be measured on a common scale.

"There is no metric of health that helps you determine whether asthma medication restores functioning to a greater degree than back pain medication. They restore different functions."

Well-Being and Health

Measure of Health

Measure of the Value of Health

We shouldn't care about health itself but rather its *value* for us: "the way it affects our well-being or quality of life."

What Matters? The impact of health on quality of life.

"A condition is worse when it makes life more difficult, when it leads to less well-being, when it creates disadvantage."

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Distinction:
Instrumental vs intrinsic value

Well-Being and Health

Health is valuable because it is a component of well-being.

But other things are as well.

Separability Assumption:
Can you put a value on the impact of health on overall well-being independently from other components of well-being?

Examples:
A finger injury is worse for a concert pianist than for an opera singer.

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Examples:
A finger injury is worse for a concert pianist than for an opera singer.

Utilitarian Answer:
We should allocate resources in terms of their impact on overall well-being.

Measuring
Health-related
quality of life

Measuring Health-related quality of life

Health State Methods
Rating Scale
Standard Gamble
Time Trade-Off

Health State Methods

A **health state** is a description of different levels of functioning that patients can achieve in the presence of particular conditions.

The EQ-5D describes at least 3,125 different health states.

Example: The EQ-5D questionnaire, which is used for determining health states

By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

- Mobility
  - ☐ I have no problems in walking about
  - ☐ I have some problems in walking about
  - ☐ I am confined to bed
- Self-Care
  - ☐ I have no problems with self-care
  - ☐ I have some problems washing or dressing myself
  - ☐ I am unable to wash or dress myself
- Usual Activities (e.g. work, study, housework, family or leisure activities)
  - ☐ I have no problems with performing my usual activities
  - ☐ I have some problems with performing my usual activities
  - ☐ I am unable to perform my usual activities
- Pain/Discomfort
  - ☐ I have no pain or discomfort
  - ☐ I have moderate pain or discomfort
  - ☐ I have extreme pain or discomfort
- Anxiety/Depression
  - ☐ I am not anxious or depressed
  - ☐ I am moderately anxious or depressed
  - ☐ I am extremely anxious or depressed

Health State Methods

A **health state** is a description of different levels of functioning that patients can achieve in the presence of particular conditions.

Step 1: We learn the patient's health state.

Step 2: We learn how the patient evaluates that health state.

We would like to know how good or bad your health is TODAY.

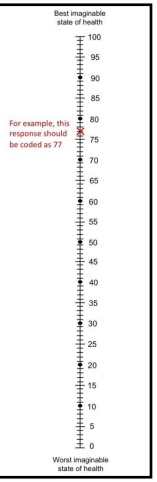
This scale is numbered from 0 to 100.

100 means the best health you can imagine.
0 means the worst health you can imagine.

Mark an X on the scale to indicate how your health is TODAY.

Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY = 77



Health State Methods

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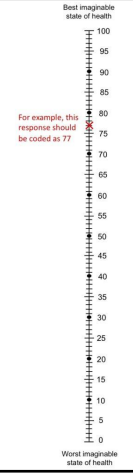

Health State Methods

The Rating Scale Method

Pros:
It's very easy to use.

Cons:
Gives us only an *ordinal* ranking. It doesn't tell us *how much better* some states are compared to others.

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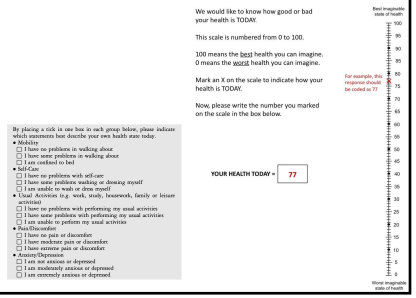
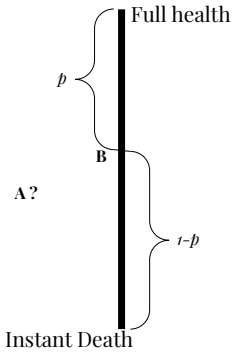


Health State Methods

The Standard Gamble

Patients give a health state description. Then they are asked to make a choice:

- **A** Remain in that health state
- **B** Receive a treatment that will restore them to full health with probability *p* or lead to instant death with probability *(1-p)*



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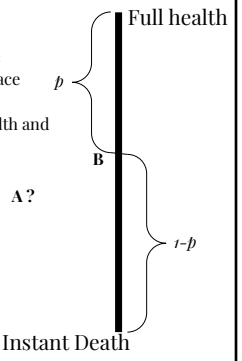
Responses reveal the *relative* value they place on their health state compared to full health and death.



Health State Methods

The Time Trade-Off Method

Patients give a health state description. Then they are asked to make a choice:

- **A** Spend T years in that health state
- **B** Can live for X years in full Health

Clearly, X < T.

Responses reveal the *relative* value they place on their health state compared to full health and death.

Value of being in that health state = X/T

Health State Methods

(1) The Rating Scale Method

(2) The Standard Gamble Method

(3) The Time Trade-Off Method

Problem with (1):
Merely orders the health states; it doesn't give us the *difference in value* between health states.

Problem (2):
The method assumes that respondents are *risk-neutral*: their choices are determined only by the severity of those health states.

Problem (3):
The method assumes *temporal neutrality:* respondents don't discount their future health.

Quality-adjusted measures

Quality-adjusted Measures

Comparing Health:

Life expectancy at birth

Health-adjusted Life Expectancy (HALE)

Quantity of life matters---but so does its *quality*.

HALEs:
Let 1 = spending one year in full health.

Let values smaller than 1 stand for spending one year in a health state that is worse than full health.

Quality-adjusted Measures

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Example:

65 years	1	(full health)
5 years	0.76	
5 years	0.52	

Life Expectancy = 75 years

HALE = 65 * 1 + 5 * 0.76 + 5 * 0.52
= 71.4

Quality-adjusted Measures

QALYs
Quality-adjusted life years

A QALY is a combination of health-related quality of life and years of life.

1 QALY can represent ...
... one year lived at full health
... two years at health-related quality of life level 0.5
... four years at health-related quality of life level 0.25

Example:
Treatment A = 5 years at level 0.4
Treatment B = 3 years at level 0.7

Treatment A results in **2 QALYs**, and
Treatment B results in **2.1 QALYs**.

The Burden of Disease

The Burden of Disease

Two Approaches

Health-related quality of life measurements.

Approach 1:
Focuses on the impact of ill-health on the different ways a person functions, where health states are defined in terms of shortfalls in functioning (e.g., QALYs).

Approach 2:
Focuses on diseases, injuries, and risk factors (e.g., DALYs).

The Burden of Disease: a distinction

Impairment:
The loss in physiological, psychological, or anatomical functioning that is the direct consequence of disease or injury.

Disability:
A loss of ability, as a result of the impairment, to carry out an activity that is considered normal for human beings.

Handicap:
The disadvantage that results from the impairment or disability that prevents the individual to fulfill her role in her economic, social, and cultural environment.

The Global Burden of Disease project developed a measure called:

Disability-adjusted life years (DALYs)

The Burden of Disease: DALYs

DALYs are a combination of ...
years of life *lost* due to disability
years of life *lived* with a disability

Ideal Level of Health
How long could a human live under reasonably ideal conditions.

DALYs represent the gap between *actual health* and some ideal level of health.

(# of years that one could've lived - # of years that one actually lives)

Problem:
Is the death of someone whose average life expectancy is low not as bad as the death of someone whose average life expectancy is high?

The Burden of Disease: DALYs

DALYs are a combination of ...
years of life *lost* due to disability
years of life *lived* with a disability

Life Lost = relative to an ideal

Life lived with a disability = makes use of *disability weights* to represent the burden of the disability associated with particular disease and injuries.

DALYs represent the gap between *actual health* and some ideal level of health.

(# of years that one could've lived - # of years that one actually lives)

Each year one spends having the condition is adjusted for her health-related quality of life (just as in the case of QALYs).

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Full health = 0
Death = 1

DALYs represent *harm*.

(Compared to QALYs, the scale is inverted)

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Example:
Suppose a person at 40 contracts a disease with disability weight 0.5, which kills them at age 50.

Burden of the Disease =
- (i) 37 years of life lost
- (ii) 10 years with disability at level 0.5

This amounts to **42 DALYs**.

Question:
What determines the disability weights?

Who Should We Ask?
Professionals?
Patients?