

BIO 512

# Digital Epidemiology

# Ethics In Digital Epidemiology

## Learning Objectives

- To understand core principles in health ethics
- To be able to frame issues with those principles
- To understand tradeoffs

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# Ethics In Digital Epidemiology

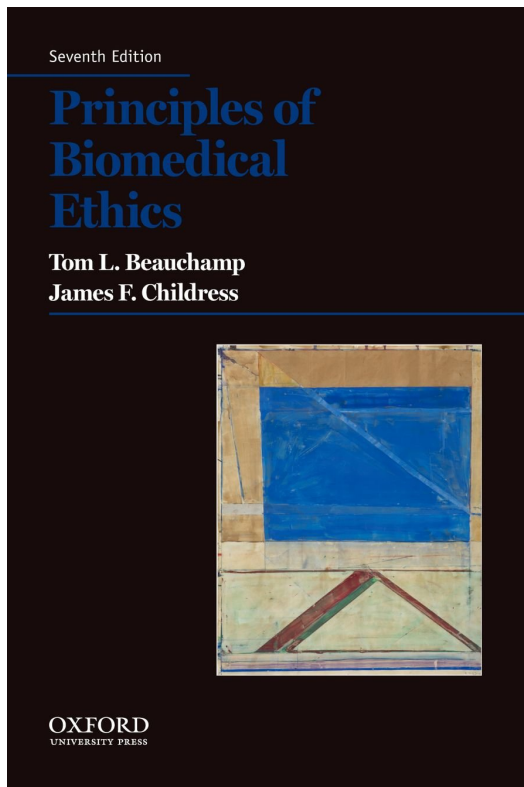
## More Than Just Health

- (Human) Epidemiology is not just about health. It's about people.
- Social sciences
- Law
- Economics
- etc.

# Ethics In Digital Epidemiology

## Four Principles of Biomedical Ethics

- Autonomy
- Non-maleficence
- Beneficence
- Justice



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## Autonomy

- People should be able to make informed and voluntary decisions with respect to their health.
- People should be able to revert decisions (e.g. informed consent)

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## Non-maleficence

- Medical actions (or *inactions*) are not intended to harm anyone (primum non nocere = first do no harm)
- Notice focus on intent

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## Beneficence

- The intention of any medical decision should be to help a patient, and to act on behalf of a beneficial outcome.
- Not the same as non-maleficence.



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## Justice

- Medical resources are limited, and should thus be distributed fairly.
- Equity

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## Example

- A medical doctor who is absolutely determined to help a patient, selflessly and with the best of intentions, but does not include the patient in the decision making.

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 1

Google and Apple setting the standard for digital contact tracing

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 2

Google Flu Trends shutting down

# Ethics In Digital Epidemiology

## Scenarios

- SCENARIO 3

Facebook sharing data with researchers on health issues

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 4

Vaccine passports

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 5

Making contact tracing mandatory during pandemic

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 6

Using large language models as first-point-of-contact-doctor



# Ethics In Digital Epidemiology

## Scenarios

- SCENARIO 7

Sharing patient data / EHR data with researchers or companies

# Ethics In Digital Epidemiology

## Scenarios

- SCENARIO 8

Sharing anonymized location data from mobile phones with public health agencies

# Ethics In Digital Epidemiology

## Scenarios

- SCENARIO 9

Twitter/X data (publicly available) for disease surveillance, vaccine sentiments, etc.

# Ethics In Digital Epidemiology Scenarios

- SCENARIO 10

Automatic systems for misinformation detection