4. Sharp bounds and the limits of assumption-free inference

Ian Lundberg
Cornell Info 6751: Causal Inference in Observational Settings
Fall 2022

1 Sep 2022

Learning goals for today

At the end of class, you will be able to:

1. Make causal claims under only highly credible assumptions*

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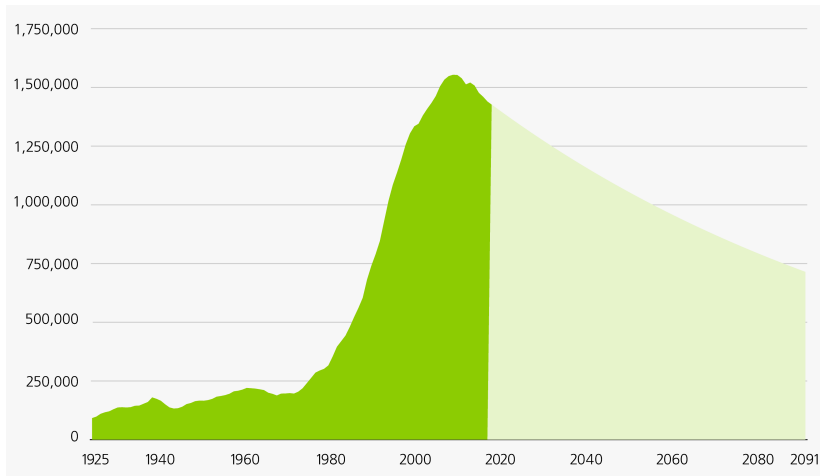
*You will not get a point estimate.
You will get an interval.
It might be a very wide interval.

A running example:
The effects of mass incarceration

U.S. federal and state prison population[1]

Lifetime Likelihood of Imprisonment of U.S. Residents Born in 2001

All Men
1 in 9

White Men
1 in 17

Black Men
1 in 3

Latinx Men
1 in 6
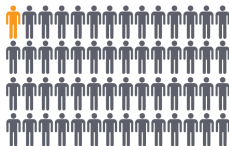
All Women
1 in 56

White Women
1 in 111

Black Women
1 in 18

Latinx Women
1 in 45

Running example: Mass incarceration[2]

Mass incarceration has enormous societal consequences

[2]Motivation: Western, B. (2006). Punishment and Inequality in America. Russell Sage Foundation.

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- ▶ It affects neighborhood cohesion

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Group exercise

[Group Exercise]
[Solutions]

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Let me know what you are thinking

tinyurl.com/CausalQuestions

Office hours TTh 11am-12pm and at
calendly.com/ianlundberg/office-hours
Come say hi!