Frequently Asked Questions (FAQ) for "A Danger to Self and Others: Health and Criminal Consequences of Involuntary Hospitalization"[1]

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What is involuntary hospitalization?

This paper evaluates whether involuntary psychiatric hospitalization (also sometimes called involuntary commitment, involuntary psychiatric hold, or sectioning) is effective at preventing harm to self or harm to others, as intended by law.

Every state in the country has a law permitting involuntary hospitalization. Each state law differs, however, so hospitalizations vary to some extent by state both in length and in process (Hedman et al. 2016).

In Pennsylvania, where the study is set, the involuntary hospitalization process has several steps. An individual who is suspected of being either a danger to themselves or others is first brought into an emergency room for evaluation. If the emergency department physician determines that the individual poses a danger to themselves or others because of mental illness, they are hospitalized in an inpatient facility, where they receive treatment for up to 120 hours (5 days). This stay can subsequently be extended if the hospital petitions the Court of Common Pleas and a judge issues an order to extend, which happens in roughly 40% of cases.

Although there is no definitive national accounting, it is estimated that about 1.2 million involuntary psychiatric hospitalizations occur every year (Lee and Cohen 2021). This puts the magnitude on par with the 1.2 million individuals imprisoned in state, federal, and military prisons every year (Carson 2022).

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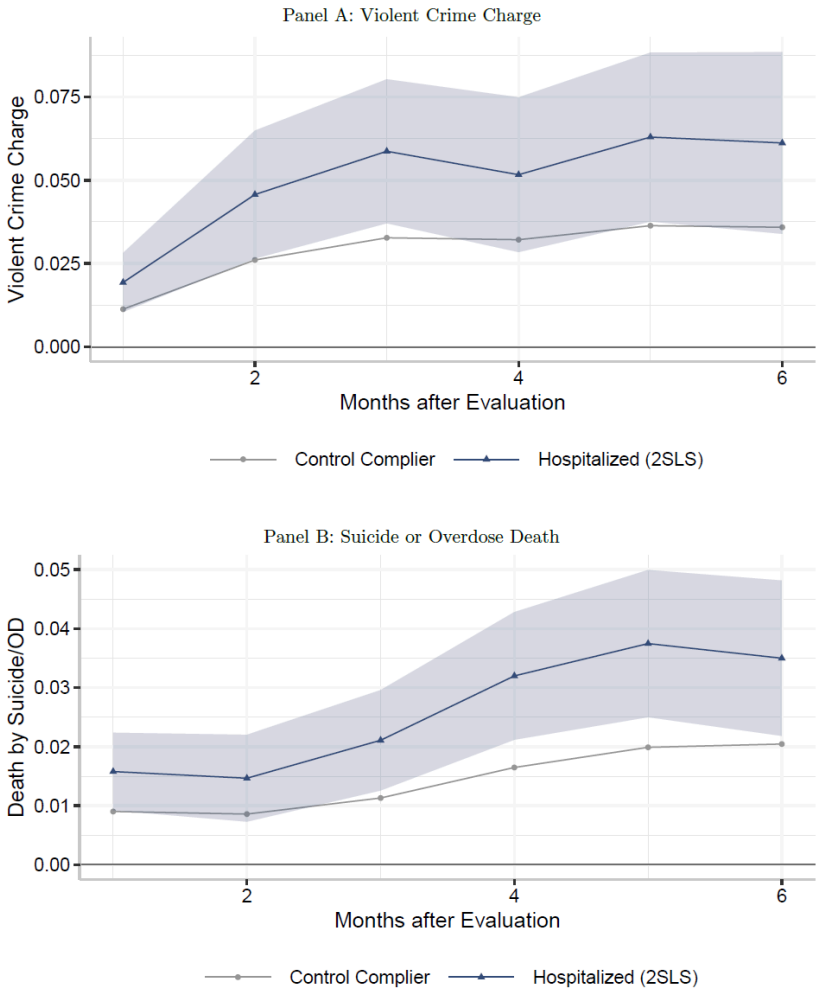
What are the main results?

Our paper employs a quasi-experimental method of analysis (more detail on the method and interpretation below). We find that where physicians may disagree as to whether hospitalization is warranted (judgement call cases), the hospitalization significantly increases the likelihood of harm to self or harm to others. The judgement call condition – “where physicians may disagree” – is an important one, and is discussed in detail below.

In particular, for judgement call cases we find that the risk of a violent crime charge is increased by 2.6 percentage points above a baseline of 3.3% and the risk of suicide or drug overdose death is increased by 1.0 percentage point above a baseline risk of 1.1% over a three-month period after evaluation for hospitalization.

Figure 2: Local Average Treatment Effects



This result is surprising. Involuntary hospitalizations are a public safety measure, and the finding that they are driving more of the outcomes they seek to prevent in the judgement call subpopulation we study has important policy implications. The significance is especially

pronounced since many locations across the country are seeking to scale up involuntary hospitalizations.

What is the setting?

The paper uses data from Allegheny County in Pennsylvania, an area with 1.2 million residents that includes the city of Pittsburgh. The county's Department of Human Services has developed a comprehensive, integrated data system that facilitates the analysis. While there is no statewide accounting of involuntary hospitalizations, Allegheny County built its own infrastructure in 2014 to better track and monitor the individuals being psychiatrically committed.

The unique data collection on involuntary hospitalizations, combined with linkage to auxiliary data (e.g., death records and coroner reports, health care usage data, homeless shelter usage data, and employment and earnings data), allows for the most comprehensive assessment of involuntary hospitalizations published to date.

How do you quantify the impacts of involuntary hospitalization?

It is difficult to assess the impact of involuntary hospitalization on patient outcomes. After being evaluated at the hospital, 78% of people are involuntarily hospitalized while the other 22% are released. Simply comparing the outcomes of those hospitalized to those not hospitalized is not appropriate, since individuals who are hospitalized are likely more ill than the ones who are not.

The gold standard of measuring causal effects are randomized experiments. In a randomized experiment, individuals are randomly assigned to a treatment group or a control group, which would mean that neither group would be more or less ill on average. After this randomization, one can compare average outcomes between groups to assess whether the treatment is helpful or harmful.

A randomized experiment is unethical in the context of an involuntary hospitalization; we cannot simply randomize which individuals will be hospitalized and which will be released. In these situations, researchers often employ what are called "quasi-experimental" methods. These methods have a rich history of application in policy domains where randomizing is unethical, such as criminal justice settings, disability insurance, and child welfare (Doyle 2007; Maestas, Mullen, Strand 2013; Dobbie, Goldin, Yang 2018; Bhuller, Dahl, Løken, Mogstad 2020; Baron & Gross 2022)**.** In this paper we have not invented a method, but instead applied an existing method to a new domain.

The analysis we employ is called instrumental variables and is, in particular, an "examiner research design." We use the fact that which examining physician assesses a given patient is as good as random and that physicians differ greatly in their tendency to uphold petitions for

involuntary hospitalization. In a randomized experiment, a patient is randomly assigned to treatment or control. In our context, a patient is randomly assigned a physician for an exam, and that physician may have a high or low tendency to hospitalize patients. In a randomized experiment, a subject can be “lucky” or “unlucky” in that they get heads or tails and subsequently receive either the treatment or control, and in an examiner design a subject can be “lucky” or “unlucky” in that they are assigned to a more or less discerning examiner. We use this variation in examiner behavior to untangle causal effects.

Specifically, we compare outcomes among patients who were assessed by physicians who have a high tendency to hospitalize to the outcomes among patients who were assessed by physicians who have a low tendency to hospitalize. The comparison yields estimates about the effect of hospitalization on those individuals who would have been hospitalized by the physician with a high tendency to hospitalize but *not* by the physician with a low tendency to hospitalize.

Mathematically, there are four conditions for this approach to be valid - the exclusion restriction, relevance, monotonicity, and exogeneity. Much of the paper works through these conditions, aiming to convince a skeptical reader that the examiner design is appropriate in this specific context.

What are the caveats?

Compliers (Judgement Call Cases) Only

The estimate derived from a randomized experiment applies to everyone in the sample. In technical terms, this is called the “average treatment effect.” A limitation of an instrumental variables approach like the one we use here is that the estimate of effects only applies to individuals where one doctor might uphold and another doctor might deny the petition, called the “local average treatment effect.” The intuition for this is that while everyone in a true experiment can be put in the treatment or control group, only individuals where physicians could disagree could end up in either group in the context of an instrumental variables analysis.

The group that could end up in either treatment or control, depending on which physician assesses them, are called the “compliers” – individuals who are, from the perspective of the evaluating physicians, a judgement call for an involuntary hospitalization. We estimate that roughly 43% of those evaluated for involuntary hospitalization fall into this group. **The main result of the paper, that involuntary hospitalization makes individuals more likely to harm themselves or others, only applies to this group of compliers, individuals whose cases are judgement calls for involuntary hospitalization.**

From a policy perspective, our results speak to the thought experiment of slightly dialing up or down the rate of involuntary hospitalization. It would be incorrect, for example, to conclude from our research that all involuntary hospitalizations do more harm than good. Our analysis does

suggest, however, that involuntary hospitalizations under current implementation practices are being overused.

Location Specific

As mentioned before, each state has its own process for involuntary hospitalization. Our analysis relies on data from one county in Pennsylvania and we should be cautious about extrapolating our results to other geographies.

First-Time Involuntary Hospitalizations

Our results apply only to those who are experiencing their first evaluation for involuntary hospitalization. We focus on this population because individuals who experience repeat evaluations may not be assigned an evaluating physician at random.

Age Restrictions

Our results do not apply to children under the age of 18 and adults aged 65 or older. We exclude those individuals from our analysis because parents, guardians, and caregivers are more likely to be involved in the hospitalization determination, meaning that it is not at the sole discretion of the randomly selected evaluating physician.

No Voluntary Hospitalizations

Our results do not apply to voluntary psychiatric hospitalizations because individuals actively choosing treatment cannot be considered “compliers” or judgement call cases. The nature of the treatment they receive may also be fundamentally different from those experiencing involuntary hospitalization.

Why does involuntary hospitalization increase risks?

Why might involuntary psychiatric hospitalization make someone more likely to die by suicide or drug overdose or be charged with a violent crime? Reasons may vary across individuals, and we do not have the data to evaluate every possible mechanism, but we explore some possible reasons.

The process of involuntarily hospitalizing someone is an arduous and invasive one. Police officers execute the warrant and arrive at an individual’s location to bring them to a hospital. The commitment lasts for days, during which medication can be administered without consent. If the patient would rather not be hospitalized, the process can alienate the individual from their support networks, including family and existing treatment providers. If the patient was using substances such as opioids prior to hospitalization, a period of abstinence could lower tolerance and increase risk of overdose from renewed substance use upon release. And if the patient was

employed, a sudden unexcused absence might jeopardize that employment and the stability that comes with earning a living.

On the other hand, the psychiatric care that one receives while hospitalized could be beneficial. Restabilizing someone on their medications, for example, is known to be a critical pathway to care for those with psychosis. If someone is at imminent risk of harming themselves or others, the incapacitation effect of being hospitalized might also be helpful. Whether or not the hospitalization is beneficial *on net* for a given person depends on whether the benefits outweigh the costs.

Beyond the main results, we assess whether involuntary hospitalization affects an individual's earnings and housing status. Using the same instrumental variables approach, we see that earnings drop significantly for those in the "complier" (judgement call) group who are hospitalized. We also see significantly more homeless shelter usage for people who have not used shelter before and are among these judgement call cases, indicating a destabilization of housing status.

We do not observe significant improvements in medication adherence or engagement with outpatient care in the months after the judgement call evaluations.

The evidence suggests that, on net, the destabilizing forces are more powerful than the therapeutic ones for the "complier" (judgement call) group we assess in this study. And there is prior evidence that these destabilizing forces can increase the likelihood of adverse outcomes (Lin 2008; Sullivan & Von Wachter 2009; Eliason & Storrie 2009; Dobkin, Finkelstein, Kluender, Notowidigdo 2018).

What should we keep in mind when working to make improvements?

We demonstrate that involuntary hospitalizations in our setting are being overused for patients whose cases are judgement calls, where some physicians would hospitalize and others would not. Prior work (Welle et al. 2023) has also shown that rates of adverse outcomes are elevated among those evaluated for involuntary hospitalization, whether they are committed or not.

These findings highlight a need to develop better forms of care for people facing psychiatric emergencies, inside and outside emergency and inpatient settings. Physicians need to be able to offer better alternative forms of care to their patients than the ones that currently exist. The more we understand when involuntary hospitalization is likely to improve patient outcomes and when it is likely to hurt outcomes, the better targeted the care can be. More work should be done to assist physicians in their decision-making processes and to reduce the variance across physicians in the tendency to hospitalize.

Better utilization of scarce healthcare resources, including emergency and inpatient hospital beds, has the potential to improve care for all, not just those facing psychiatric emergencies.

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