Calls and Conduct:

The Impact of Free Communication on Prison Misconduct*

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Abstract

45% of Americans have an immediate family member who has been jailed or incarcerated, and over $80 billion is spent each year on the public corrections system. Yet, the United States might be missing a large opportunity to intervene with individuals during incarceration as most rehabilitative programs are focused around the time of release. In this paper, we study an in-prison intervention targeting a costly aspect of life for incarcerated individuals—audio and video calls. We evaluate the impact of free video calls and eased in-person visits utilizing the staggered roll out of this technology across Iowa's nine state prisons between 2021 and 2022. We find evidence of a 27% reduction in in-prison misconduct, including a 32% decline in violent incidents. Our results indicate potentially large returns to prison communication policy reforms that are currently underway across the U.S.

Keywords: prison, technological change, criminal justice, violence

JEL classifications: K32, K42, I18, I38, O14

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Approximately 45% of Americans have had a close family member spend at least one night in jail or prison and 1 in 7 have had a close family member spend at least a year in jail or prison (Elderbroom *et al.*, 2018). While existing research has extensively documented the costs of incarceration, less is known about the effectiveness of policies or interventions that improve conditions for individuals while they are incarcerated. U.S. prison conditions are largely a product of punishment—and incapacitation—focused policy. In recent years, however, there has been increasing interest in reforms within the U.S. criminal justice system, including implementing rehabilitative and harm-reducing approaches to incarceration (Batistich *et al.*, 2024; Alsan *et al.*, 2024; Clark-Moorman, 2024).

Given the widespread experience among Americans with a loved one incarcerated, focusing on in-prison conditions and circumstances related to maintaining community ties might be particularly valuable. The existing prison communication system in the U.S. is costly for families and incarcerated individuals, with the Federal Communications Commission describing prison call costs as "exorbitant" (Federal Communications Commission, 2024). In 2019, the average 15-minute phone call cost $1.91 nationwide, equivalent to over 5 hours of in-prison wages (American Civil Liberties Union, 2022; Prison Phone Justice, n.d.). Video calls, where available, are even more expensive, costing anywhere from $0.33 to $1 per minute (Rabuy & Wagner, 2015). 34% of families report going into debt just to visit or talk with family members who are incarcerated (Who Pays Report, 2015). Meanwhile, violence and incidents of misconduct are more frequent in prisons than in the community, and widespread among prisoners—with half of prisoners committing a misconduct during their incarceration and 15% committing an assault. Lastly, misconduct often leads to loss of "earned time," leading to individuals staying incarcerated longer. Infractions and violence within prison are costly to both staff and prisoners, and their determinants are not well understood.

Can easing communication improve outcomes for incarcerated individuals while in prison? This is a highly policy-relevant question as the the Federal Communications Commission (FCC) set new price caps for phone and video call services in 2024 that prisons, jails, and

their telecommunication providers must abide by. We are not aware of any current research documenting the causal impacts of policy shifts in communication costs. The causal research that does exist focuses on the impact of in-person visits, and finds mixed results (Lee, 2019; Cochran *et al.*, 2020; Weber, 2020; Otsu, 2023). As a result, the impact of eased communication on incarcerated individuals remains an important but unanswered empirical question.

In this study, we estimate the causal effect of free and eased communications offered by Ameelio, the largest prison communications technology non-profit in the United States. Ameelio entered the previously oligopolistic private prison communication industry in 2020, and introduced its technology in two states by 2023. The Ameelio technology studied in this context focuses on their provision of free video calls and a predictable, pre-scheduled in-person visit system. Our empirical strategy exploits the staggered rollout of Ameelio's services across all state prison facilities in Iowa using a difference-in-differences framework. We find that easing communication with Ameelio in Iowa's prisons leads to a 27-34% reduction in overall misconduct. Notably, misconducts related to violence and threats of violence drop by 55-62%, and violent misconduct specifically by 32-34%. We also observe that while modes of communication expanded in the prison, we find suggestive evidence that misconduct related to the misuse of communications declines.

Our study makes a number of contributions. First, we provide causal evidence on reducing the costs associated with communications for incarcerated individuals. Given the growth of policy reforms in this area, it becomes crucial to understand how these policies may impact prison conditions and behavior. Once incarcerated, keeping in touch with loved ones and friends may help individuals maintain well-being and improve behavior while in prison. On the other hand, one might also hypothesize that easing communication among incarcerated individuals may make it harder for individuals to cut ties with individuals in their previous networks that remain connected to criminal behavior (Weber, 2020). Our findings suggest the promise of more accessible prison communications in improving behavior for incarcerated individuals.

Second, we expand the literature on the potential upside of making the criminal justice system less punitive and more focused on rehabilitation (Arora & Bencsik, 2021; Mueller-Smith & Schnepel, 2021; Agan *et al.*, 2023; Alsan *et al.*, 2024).[1] While the topic of rehabilitation during incarceration is still a nascent area within the broader literature of rehabilitative efforts in the criminal justice system, two contemporaneously developed working papers, both examining a jail setting, find promising results that providing educational or cognitive behavioral therapy programs to individuals detained in jail can reduce misconduct (and recidivism) (Alsan *et al.*, 2024; Batistich *et al.*, 2024). Our paper contributes to a limited but growing area of research that tries to understand the determinants of violence in prison and suggests improving communication conditions in prisons could prove beneficial for individuals' behavior.

The remainder of this paper is structured as followed. Section 1 provides a context on prison communications in our setting, Section 2 discusses the data, Section 3 discusses our empirical strategy, Section 4 contains the results, and lastly Section 5 concludes.

1 Institutional Context

1.1 Prison Communications

During the 2000s and 2010s, the U.S. prison communications industry became increasingly oligopolistic, with a few private companies partnering with all 50 Departments of Corrections (DOCs) (Wagner & Jones, 2019b).[2] This lack of competition led to incarcerated individuals facing much higher telecommunications costs than the average American. In addition, in many states, a percentage of the revenue generated is passed on to the DOC through commission payments, becoming a core part of DOC and telecommunication service contracts (Marra

[1] While millions of dollars are spent in the U.S. for re-entry programs, relatively little investment is done in improving the conditions of prisons in the U.S. This could be a missed opportunity, as approaching prisons from a rehabilitation perspective have been shown to reduce recidivism in contexts as distinct as Canada, Colombia, Italy, and Norway (Arbour *et al.*, 2024; Tobón, 2022; Mastrobuoni & Terlizzese, 2022; Bhuller *et al.*, 2020).

[2] In 2018, the two largest private phone companies occupied 83% of the prison communications technology market across the country (National Association of Criminal Defense Lawyers, 2020).

et al., 2024; Wagner & Jones, 2019a). The average commission payments amount to $11.34 per inmate per month (Marra *et al.*, 2024). These commissions are often integrated into correctional budgets and used to fund various programs and functions within prisons.

Starting in 2021, the prison communications landscape began to change rapidly, through non-profit, state-level, and ultimately, federal efforts. First, Ameelio, the country's first (and currently largest) non-profit supplying hardware and software in support of free communication services to incarcerated individuals started offering its services in the first prison facility in Iowa in June 2021.[3] State-level reforms started to proliferate then as well, with legislative developments in five states across the country, as of the end of 2023, making or planning to make phone calls for incarcerated individuals free (Connecticut and Massachusetts on the East Coast, California on the West Coast, and Minnesota and Colorado in the Midwest). This fast-moving public policy area has resulted in 4 states starting to offer free calls with a 14-month window of each other in late 2022 to 2023.[4]

Meanwhile, federal legislative action has also moved forward. Due to the way the Communications Act of 1934 was written, no federal agency had the right to regulate intra-state and video call costs until recently. However, with a federal bill signed into law in 2023, the FCC became able to set regulation, and in July 2024, announced price caps for prison communications for the first time after nearly a hundred years. While DOCs continue to not be legally required to provide any free communication services to incarcerated people, new regulations will significantly reduce the rates by capping audio calls at $0.06 per minute, and for the first time, the FCC has set a rate cap of $0.16 per minute for video calls. These new rate caps will be implemented once current DOC-telecommunication contracts expire, generally in 2025 or 2026. As a matter of reference, compared to prison wages, this new cap will mean that on average, one hour of non-industry prison work (where most incarcerated individuals work)

[3]More information about Ameelio can be found at https://www.ameelio.org/.

[4]Connecticut made calls free starting October 2022 (Johnson, 2021), California starting January 2023 (California Department of Corrections and Rehabilitation, n.d.), Minnesota starting July 2023 (Minnesota Department of Corrections, n.d.), Massachusetts starting December 2023 (Massachusetts Department of Correction, 2023), and Colorado starting July 2025 (with partial cost reductions in the meantime) (Rodriguez *et al.*, 2023).

will buy the incarcerated individual approximately 5 minutes of phone time or 2 minutes of video time (American Civil Liberties Union, 2022).[5]

1.2 Implementation of Ameelio in Iowa

Prior to implementation of Ameelio, the cost of a 15 minute in-state call from an Iowa prison in 2019 was $1.65.[6] In person visits were free but were handled on a first-come, first-served basis. This meant that people who traveled long distances might not be able to see their loved ones if the prison reached its maximum visitor capacity for the day. With nearly two thirds of Americans incarcerated in state prisons over 100 miles away from their home (Rabuy & Kopf, 2015), this unpredictability could cause a meaningful impediment to visitations. If the loved one was granted entry, they could stay until visitation closing time, with no time limit.

The Iowa DOC partnered with Ameelio in the spring of 2021. As shown in Figure 1, Iowa transitioned to the use of Ameelio gradually, implementing it at one or two facilities at a time over the course of one year. Ameelio's services reshaped telecommunications in Iowa prisons in two key ways. First, Ameelio introduced *free* video calls on a large scale. Prior to Ameelio, video calls were largely nonexistent during the study period, outside of the COVID-19 pandemic, when Iowa introduced limited video calls because in-person visitations were restricted. However, pandemic era video calls were complicated to schedule due to them being manually set up. Instead, with Ameelio's rollout, free video calls could be scheduled through their online platform in an easy and predictable fashion. Second, Ameelio took over the management of in-person visits, replacing the old first-come, first-served system with a reservation-based approach, and integrated this process with their technology. This new system allowed both video calls and in-person visits to be scheduled predictably and in advance. In-person visits were now set to last 1 to 2 hours on average. The remaining methods of communication, paid

[5] Jails, generally managed by smaller jurisditions than DOCs, such as by counties, have started to move slightly ahead of prisons in making calls free, with New York City starting this approach is 2018.

[6] In Iowa specifically, the hourly incarcerated pay scale reported in 2022 ranges from $0.28 to $0.71 for non-industry jobs, and from $0.70 to $0.95 for jobs in state-owned correctional industries. Therefore it could require anywhere from 2 to 6 hours of paid work to be able to afford a 15-minute phone call.

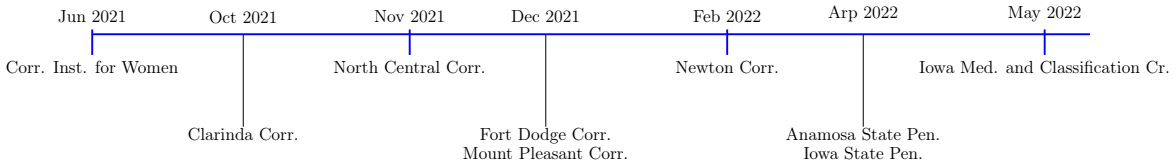


Figure 1. The Rollout of Free Communications in the Iowa Departments of Corrections

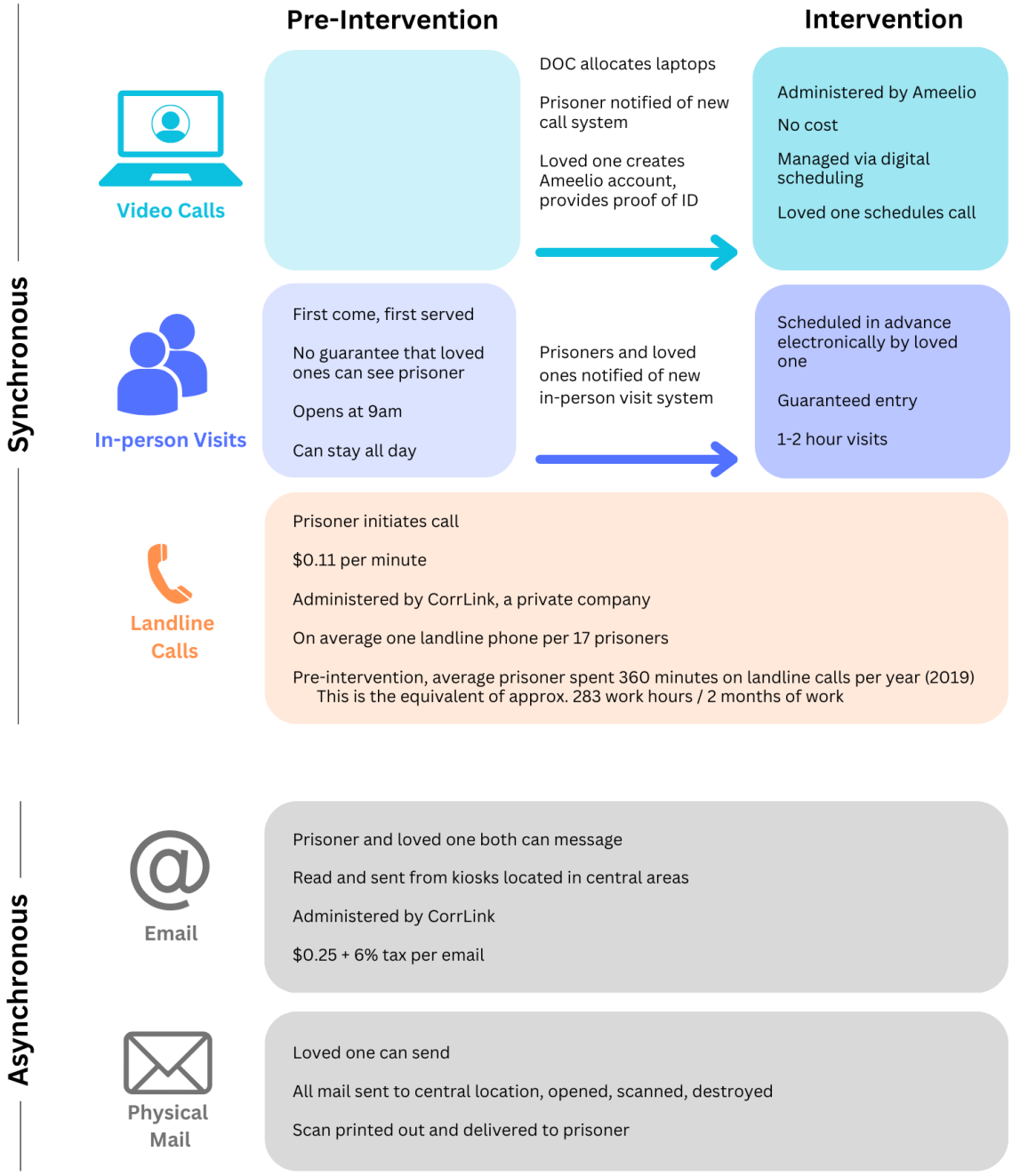
landline calls, email, and physical mail, remained unchanged throughout the study period and unaffected by Ameelio's direct services. The key features of the communications landscape in Iowa are visualized in Figure 2.

Importantly, the research team had extensive conversations separately with both the Iowa DOC and with Ameelio, and both entities reported that the facility-specific rollout of the free and eased communication was not coupled with any other facility-specific upgrades or changes. For example, the implementation of Ameelio in a given facility was not part of a larger technology or electric upgrade, instead, the policy change only constituted the commencement of Ameelio-run visitations.

1.3 Behavioral Misconduct in Prisons

Incidents of misconduct (also known as infractions or rule violation reports, depending on state terminology) refer to any documented violations of prison rules, including incidents like assaults or possession of dangerous contraband. Misconduct incidents are common in prison, with roughly 50% of incarcerated individuals involved in at least one infraction while serving their sentence. Violent victimization is also meaningfully higher inside prisons than outside of prison (Steiner & Cain, 2016). Additionally, the impact of infractions reaches beyond the victim—witnessing victimization and perceiving the prison as a threatening environment are both associated with post-release re-arrest and other negative outcomes (Listwan *et al.*, 2012).

Figure 2. Forms of Communication in the Iowa Department of Corrections



Note: In study years prior to the COVID-19 pandemic, video calls did not exist, and the universe of options for synchronous communication were landline calls or in-person visits. During the pandemic, video calls were introduced across all facilities while in-person visits were paused on the same date statewide. However, these pandemic-era video calls were scheduled and managed manually, which required extensive effort from the Department of Corrections and thus limited the video calls' availability.

2 Data

This study uses administrative data from January 2015 to October 2022 from the Iowa Department of Corrections and Ameelio. All data is at the individual level. We observe 31,761 unique offenders between 2015-2022, with Iowa housing approximately 9,000 individuals at any given time. In addition, IDOC employs over 3,500 corrections officers, as well as other staff (Raemisch, 2017). Over the treatment period, 11,580 individuals are exposed to treatment (in a facility with free communications once free communications become available) for part or all of their sentence.

During the study period, 66.4% of the sample appears in prison for one period/prison spell, while 33.6% of the sample has multiple prison spells (i.e., a person who is in prison, gets released, and then becomes incarcerated again would have 2 spells). On average, one instance of incarceration lasts 603 days in our sample, or 517 days if only including those released by the end of the data period. During one period of incarceration, a person on average moves facilities 1.6 times and stay in a total of 2.6 facilities on average (these need not be unique facilities, a person can be transferred away and then return back to their original facility as part of facility moves).

From the Iowa DOC, we received details on all prison entries and exits during our study period, including demographic data regarding race, sex, age, veteran status, and educational attainment at the time of entry (summarized in Table 1). The majority of the study sample identify as white (67%), are male (86.5%), and have finished high school (67%). Roughly 40% are incarcerated for a violent offense.

We also received information on landline phone calls (both completed and attempted), including the date, length of call, and cost incurred to the incarcerated individual. We also observe misconduct incidents with the specific rule violated, date of violation, and specific charge (e.g., battery, drug possession, disobeying order, etc.). Administrative data obtained from Ameelio includes information on in-person visits and video calls *after* Ameelio's services were available at each facility.

Table 1. Study Sample

	N	%
Total sample		
N Offenders	31761	
N Ever Treated	11580	
Age		
<30	5922	18.6%
30-39	11205	35.3%
40-49	7770	24.5%
50-59	4436	14.0%
60-69	1922	6.1%
>60	490	1.5%
Missing	16	0.1%
Race/ethnicity		
White	21276	67.0%
Black	7409	23.3%
Hispanic White	2022	6.4%
American Indian or Alaska Native	713	2.2%
Asian or Pacific Islander	312	1.0%
Missing	29	0.1%
Sex		
Male	27486	86.5%
Female	4255	13.4%
Unknown	20	0.1%
Highest education level		
Finished High School	21233	66.9%
Some High School	6690	21.1%
Unknown	1617	5.1%
Any Higher Ed	1248	3.9%
No High School	973	3.1%
Current offense type		
Violent	18716	39.9%
Property	13954	29.7%
Drug	9310	19.8%
Public Order	4163	8.9%
Other	818	1.7%

Notes: All variables reflect information captured at the time of prison entry. The average individual has 1.77 distinct prison spells during our sample period. If a person exits and then reenters prison (i.e., they have multiple prison spells) they are counted multiple times. Data Source: Iowa Department of Corrections.

2.1 Incidents of misconduct

Table 2 displays the number of incidents of misconduct that occurred in the IDOC during 2015-2022. We identify the activities constituting a given misconduct using State of Iowa Department of Corrections (2021), which defines the Rules and Discipline section of the Institutional Operations. An incident of misconduct can have multiple charges associated with it, for example if a prisoner committed an assault, and drugs were found on them during the altercation, they would have one misconduct with two charges associated with it.[7] We identify the top charge for each misconduct by ranking charges following as closely as possible the FBI Uniform Crime Reporting (UCR) Program's Hierarchy Rules (U.S. Department of Justice, 2019).[8] Throughout the paper, we consider each incident of misconduct based on the most severe charge associated with it.

In Table 2, we observe that there were a total of 261,328 incidents of misconduct, which translates to approximately 8 incidents per person during their complete incarceration period for a given conviction. There were a total of 41,460 incidents of violence, threats, and intimidation, making up 16% of all misconduct and equating to 1.3 such incidents per person during their complete incarceration for a given conviction. Contraband made up an 28% of misconduct, with drugs constituting over 1 in 10 contraband offenses. Misuse of communications is an offense type involving the use of "coded messages or symbols" or the use of another prisoner's phone account, among others. This misconduct category, of particular relevance in this study setting due to the expansion of modes and ease of communication, occurs over 7,000 times, making up 3% of misconduct. Finally, disorderly conduct (disruption to operations, failure to report to place of duty, and failure to obey a rule, among others) makes up 35% of incidents and other offenses (including unsanitary or untidy living quarters, and storing,

[7] This is equivalent to how arrests by police can have multiple charges associated with one arrest.

[8] The universe of UCR charges for crimes are not identical to the universe of misconduct charges the Iowa DOC issues, but given they large overlap, at least in terms of major types, allows us to follow the Hierarchy Rules closely. Specifically, if at least one charge for a misconduct is violence or sexual violence, we consider that a violent misconduct. Subsequently, we define the top charge based on the following order: threats of violence, sexual misconduct, drug, non-drug contraband, property crime, and so on.

giving, or receiving any medication, among others) make up 18% of misconduct incidents.

Table 2. Incidents of misconduct (2015-2022)

Misconduct Category	N	%
Violent (inclusive)	41,460	16%
Violence	24,624	
Threats of violence	16,836	
Contraband	74,264	28%
Drug	8,706	
Non-drug	65,558	
Misuse of communications	7,078	3%
Disorderly conduct	92,549	35%
Other	45,977	18%
Total	261,328	

Notes: The specific violations constituting a misconduct charge are identified based on State of Iowa Department of Corrections (2021). Subsequently, the authors classify each misconduct into the above categories. Data Source: Iowa Department of Corrections.

Lastly, we observe the hearing outcomes for the misconduct charges in Table 3. When an incarcerated individual violates a prison rules and is charged with a misconduct, a prison disciplinary hearing is held to determine guilt. In total, there were 261,454 hearing outcomes, of which 126 resulted in a dismissal (these dismissed charges are excluded from our analysis). For non-dismissed misconduct charges, we observe that over 99.9% of incidents resulted in a guilty or reduced verdict, with 9 out of 10 hearings resulting in a guilty verdict.

Table 3. Misconduct Hearing Outcomes

Hearing Outcome	N	%
Guilty	234,587	89.7%
Reduced	26,692	10.2%
Pending	1	0%
No outcome	48	0%
Total	261,328	
Dismissed	126	0%
Total	261,454	

Notes: The hearing outcome is for the most severe charge for the misconduct incident. If there are multiple most severe charges, such as two different violent charges, and the person is found guilty for one charge but not the other, we consider the more severe hearing outcome. Data Source: Iowa Department of Corrections.

3 Empirical Strategy

To estimate the causal impact of free communication on individual- and facility-level outcomes, we exploit the staggered rollout of Ameelio's services across Iowa facilities in a difference-in-differences framework. Specifically, we estimate the following equation:

$$Y_{i,f,t} = \beta_0 + \beta_1 Ameelio_{f,t} + \gamma_f + \alpha_t + \varepsilon_{i,f,t} \tag{1}$$

$Y_{i,f,t}$ is an outcome for individual i who was in facility f in week t, $Ameelio_{f,t} = 1$ if Ameelio's services are available in facility f in week t, facility fixed effects γ_f control flexibly for permanent differences across facilities, and week fixed effects α_t control for temporal shocks that affect Iowa's prison population as a whole.[9] Standard errors $\varepsilon_{i,f,t}$ are two-way clustered at the person and facility level.

Our research design compares how outcomes change over time in facilities with Ameelio

[9]We code our week-year variable as unique for each week-year in our sample, i.e., it is marked as 1 for the first week of 2015, 53 for the first week of 2016, etc.

(treatment facilities) with facilities that have not yet rolled out Ameelio's services (comparison facilities). In order to correct for biases inherent in standard two-way fixed effects models with staggered treatment dates and potentially heterogeneous treatment effects, we use the estimation method developed by Borusyak *et al.* (2024). The identifying assumption is that in the absence of Ameelio's services, outcomes would have evolved similarly across prison facilities in each state. We test this assumption by looking for similar trends in the outcomes of interest across treatment and comparison facilities prior to the introduction of Ameelio's services.

4 Results

4.1 Direct impact

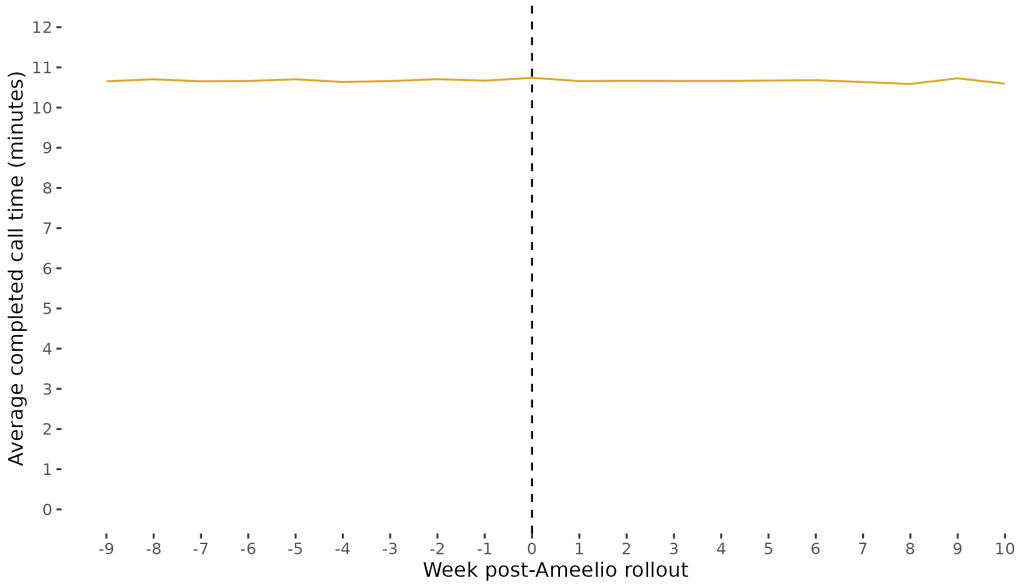
Before presenting our causal effects, we present descriptive evidence for how incarcerated individuals in the IDOC are active users of various methods of communication with their loved ones. Pre-implementation of Ameelio we observe 80,000 landline call conversations per week across the state, or approximately 9 calls per person weekly (see Figure 3). On average, calls last 10 to 11 minutes, resulting in approximately 1.5 hours of conversations per person per week.

As observed in Figure 4, once Ameelio arrives to a facility, after a few weeks of ramping up, video calls settle at around 1,200-1,400 per week, and in-person visits at around 600 per week across the state, or 0.14 video calls and 0.07 in-person visits per person per week. With the average video call being scheduled to last 40 minutes, and the average in-person visit being scheduled to last 106 minutes, this translates to 13 minutes of scheduled contact through these free or eased modes of communication per person per week.[10] Each facility in IDOC did have

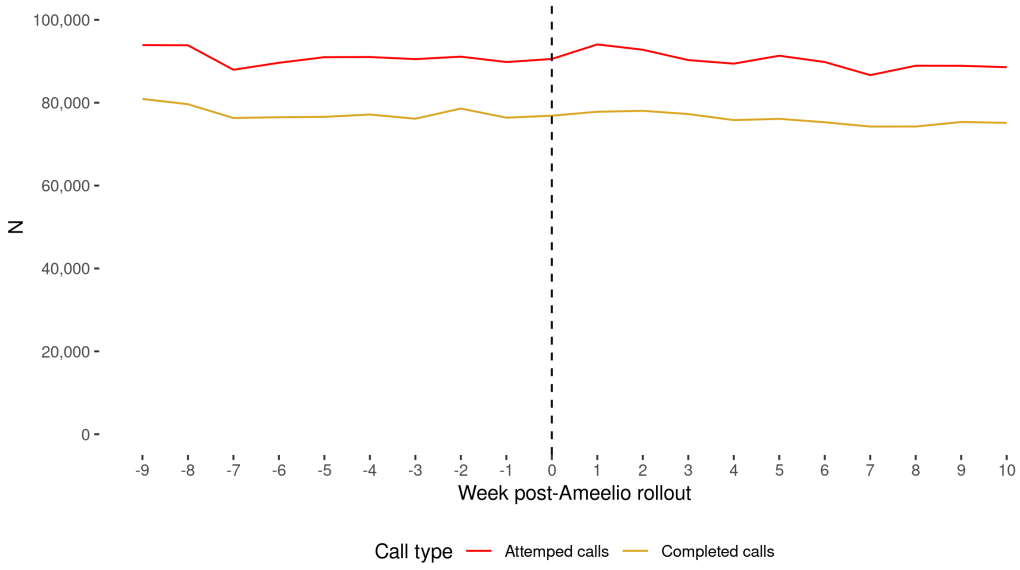
[10]For in-person visits, we only have information on how long they were scheduled for, not how long they lasted in practice. For video calls, we only have scheduled length until the end of January 2022—at which point half of facilities have rolled out Ameelio, and start to have information on the minutes the video call actually lasted from February 2022. When comparing post-February 2022 video actual visit length where that information is non-missing with the scheduled length, on average the scheduled length is 33% longer than the actual—though this average is a combination of video calls that lasted exactly as long as scheduled, and video

Figure 3. Trends in Landline Calls Pre- and Post-Ameelio Rollout

(a) Panel A: Call duration



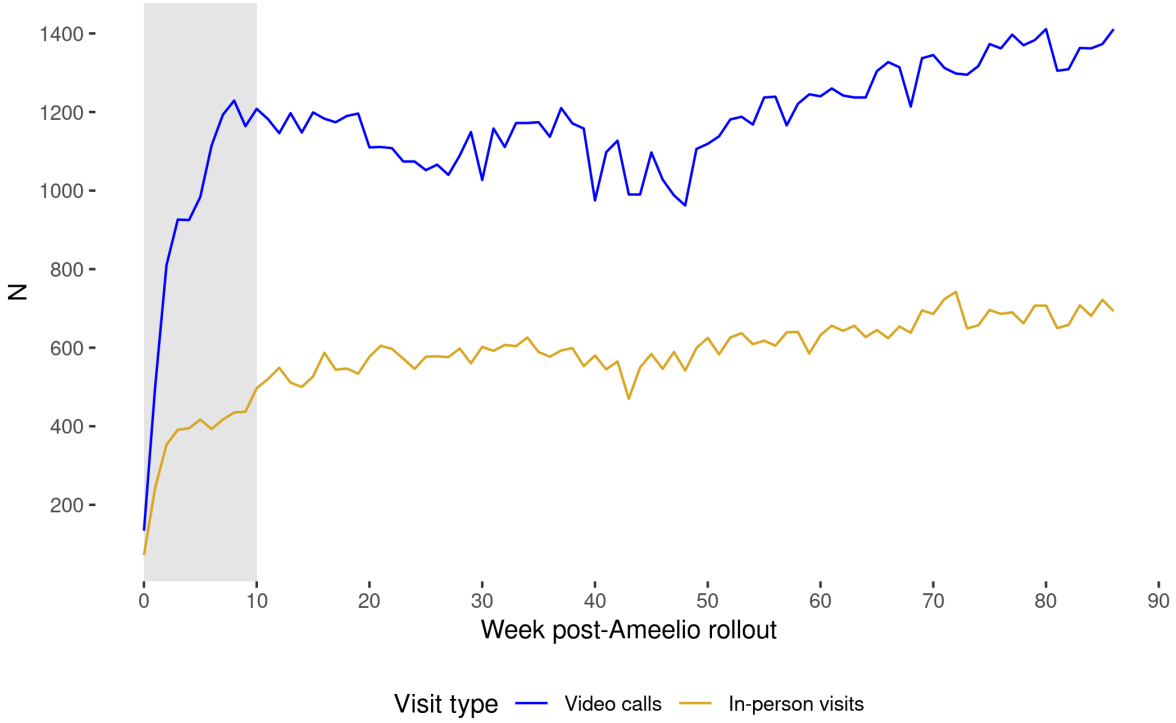
(b) Panel B: Number of calls



Note: Panel A illustrates the number of minutes per call, while Panel B illustrates the number of attempted (but not completed, i.e., lasting zero minutes, for example due to the other person not picking up) landline calls and completed (lasting over 0 seconds) landline calls. The figure is normalized so that the value of 0 corresponds to the start of the facility-specific treatment. Each time period corresponds to one week, hence, each integer on the x-axis represents the number of weeks since or before the Ameelio roll-out began.

video and in person caps placed for each prisoner, ranging from 1 to 3 calls/visits each per week depending on the security level of each prisoner and each facility.

Figure 4. Trends in Video Calls and In-Person Visits Post-Ameelio Rollout



Note: The figure is normalized so that the value of 0 corresponds to the start of the facility-specific treatment. Each time period corresponds to one week, hence, each integer on the x-axis represents the number of weeks since or before the Ameelio roll-out began. The graph illustrates the number of in-person visits and video calls, reflecting the growth of Ameelio services over time. The area shaded with gray captures the 11-week period for which we have landline call data.

As noted previously, we have detailed post-implementation data on the universe of synchronous communication types: landline calls, video calls, and in-person visits. Pre-implementation, we have detailed landline call data, while video calls largely didn't exist (outside of the pandemic period). However, we do not have pre-implementation in-person visit data, as visits were first come first serve, rather than pre-scheduled. Therefore, in our first-stage regression we can estimate whether the introduction of free video calls and eased scheduling for in-person visits resulted in a substitution away from landline use.

calls that were brief but were scheduled for a longer time.

Focusing on the 5-month period around the facility-specific implementation (9 weeks pre-implementation and 11-weeks post-implementation), in Table 4 we observe that there was no substitution away from landline calls, the number of minutes spent on landline calls remains the same during the window around the implementation. (See Figure 3 Panel A for a visual representation of the minutes over time. Meanwhile, see Panel B for the count of calls over time, which also remain statistically indifferent between pre- and post-implementation.) Because the Borusyak *et al.* (2024) estimator does not allow for bootstrapped standard errors and we only have 9 prison facilities (i.e., clusters) in our current sample, we reproduce the result with the bootstrapped conventional DID estimator, and continue to conclude that during the first 2.5 months of implementation there was no substitution away from landline phone use.

An important caveat for this first-stage result is that we observe landline call data for the first 2.5 months post-implementation, but not beyond. This period, at least in part, overlaps with Ameelio's implementation on-ramp period (see Figure 4 for how this period fits with usage counts over time), meaning that it might have been too early at this point for prisoners to switch away from landline calling.

Table 4. Impact of Eased Communication on Minutes of Communication

		Borusyak estimator		Bootstrap DID	
Outcome	Pre-treat mean	Estimate	Estimate %	Estimate	Estimate %
Successful landline calls (minutes)	92.807	5.003	5.4%	-0.757	-0.8%
		(8.505)		(1.979)	
		[0.556]		[0.738]	

Notes: Column 1 uses the DiD imputation method of Borusyak *et al.* (2024). The dependent variable is weekly minutes of communication for people incarcerated between 1/1/2015 and 10/23/2022. We control for prison facility, week (e.g., week 1 in 2021), individual and demographic characteristics (race/ethnicity, veteran status, sex, current education level, and age), and current and prior convicted offenses. Standard errors (displayed in round brackets) are clustered at the person and facility level. P-values are displayed in square brackets. Column 2 displays standard errors produced via the wild cluster bootstrap.

4.2 Violent and non-violent misconduct in prisons

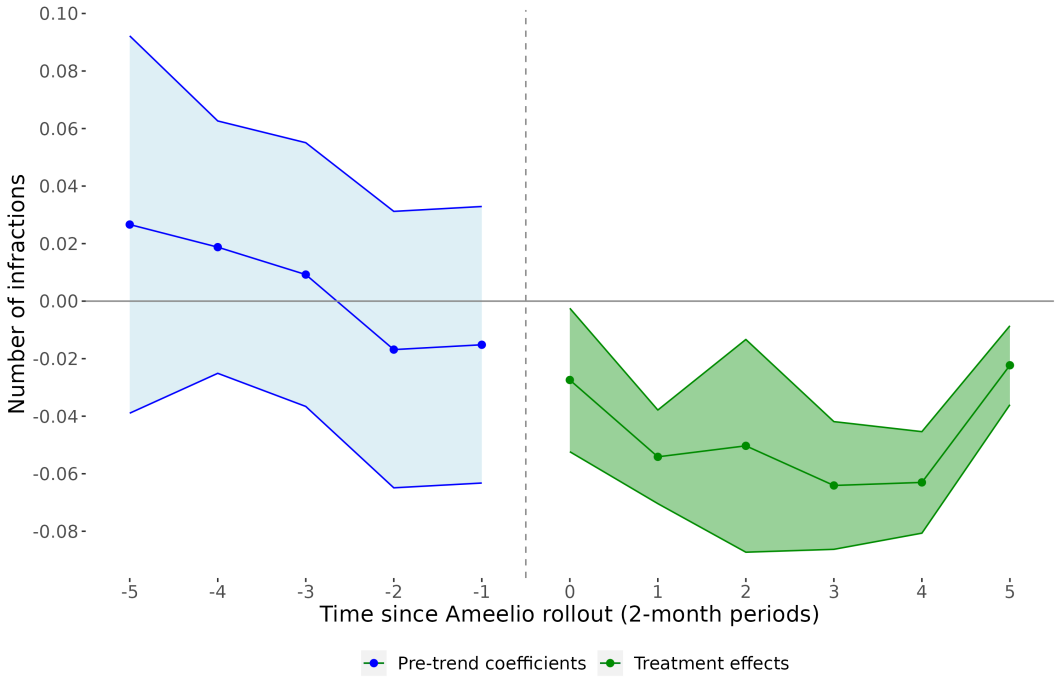
Next, we examine the impact of Ameelio on our primary outcome, prison misconduct by incarcerated individuals. As summarized in Figure 5, the availability of Ameelio's services significantly reduced the number of misconduct incidents within prisons. Pre-implementation, we see each event study period to be insignificantly different from zero, while during a year of post-implementation, we observe a clear decline, and all periods exhibit significantly lower misconduct incident counts.[11]

We examine this pattern in a table format in Table 5 and find that easing communication reduced overall in-prison misconduct by approximately 27-34% relative to the pre-treatment mean. Table 5 shows the overall impacts on misconduct in Iowa across six models. Model (1) estimates effects without controls, model (2) includes current convicting offense-related controls, model (3) adds past offense-related controls, while model (4) adds demographic controls. The sign and magnitude of the effect sizes across all four models are highly consistent, with model (4), our preferred Borusyak *et al.* (2024) specification, showing a significant (at the 1% level) decrease in misconduct by 34%. Because the Borusyak *et al.* (2024) estimator does not allow for bootstrapped standard errors and we only have 9 prison facilities (i.e., clusters) in our current sample, we reproduce the results with the bootstrapped conventional DID estimator in models (5) and (6). Model (5) uses the same controls as in model (4) with a conventional DID, while model (6) introduces bootstrapped standard errors. We find that in model (6), our results remain economically meaningful—a 27% decrease in overall misconduct—and statistically significant at the 10% level.

Next, we disaggregate misconduct into various offense categories to examine which specific types were affected. We present Model (4) and Model (6) from Table 5—which use the Borusyak estimator and DID with bootstrapped standard errors – as our preferred specifications for each outcome. With violence being a large concern in prisons, we first examine this

[11] We note that the event study in Figure 5 is based on the Borusyak *et al.* (2024) estimator, which does not allow bootstrapping, so the standard errors do not account for the small number of clusters (n = 9).

Figure 5. Eased Communication Reduces In-Prison Misconduct



Note: The figure is normalized so that the value of 0 corresponds to the start of the facility-specific treatment. Facility-specific start date is set as the date of the first call. Each time period corresponds to two months. If a person moves from a facility that has been treated to one that has not yet been treated, an infrequent occurance in our data, we continue to classify the person as being in the treated group. This approach ensures that we can analyze the pre-treatment period without any contamination and provides a more conservative treatment effect. The Borusyak estimator compares post-period outcomes relative to the average of the pre-treatment periods, setting the first period (not pictured) as zero (Roth *et al.*, 2023).

Table 5. Impact of Eased Communication on Total Misconduct

	Borusyak estimator				Conventional DID	
	(1)	(2)	(3)	(4)	(5)	(6)
Estimate	-0.0059***	-0.0060***	-0.0060***	-0.0059***	-0.0048**	-0.0048*
Standard Error	(0.0018)	(0.0018)	(0.0018)	(0.0017)	(0.0020)	(0.0024)
P-value	0.001	0.001	0.001	0.000	0.045	0.098
Pre-treatmean Mean	0.018	0.018	0.018	0.018	0.018	0.018
Percent Change	-33.47%	-34.36%	-34.54%	-33.96%	-27.44%	-27.44%
Week-year and facility FE	Y	Y	Y	Y	Y	Y
Current offense controls		Y	Y	Y	Y	Y
Past offense controls			Y	Y	Y	Y
Demographic controls				Y	Y	Y
Bootstrapped SE						Y

Notes: Model 1 uses the DiD imputation method of Borusyak *et al.* (2024). The dependent variable is weekly infractions (removing dismissed infractions, infractions pending an outcome, or infractions without any outcome) for people incarcerated between 1/1/2015 and 10/23/2022. We control for prison facility, week (e.g., week 1 in 2021), individual and demographic characteristics (race/ethnicity, veteran status, sex, current education level, and age), and current and prior convicted offenses. Standard errors (displayed in round brackets) are clustered at the person and facility level. Model 6 displays standard errors produced via the wild cluster bootstrap.

outcome.[12] In Table 6, we find that violent misconduct decreases in Iowa after the introduction of eased communication. This reduction is substantial, with a decline of 32-34% relative to the pre-treatment mean. Meanwhile, our more inclusive measure of violence, which also includes threats and intimidation, as well as acts of violence, exhibits a significant decline of 55-62%. These results suggest that offering free communications results in safer prisons by reducing violent behavior and intimidation among inmates.

Despite the addition of an accessible communication option with Ameelio, we find no observed rise in the misuse of communications, such as failing to follow regulations when using mail or phone, or sending coded messages. In fact, we find large, negative point estimates although results are insignificant once we bootstrap our standard errors with the conventional DiD estimates. Meanwhile, we also observe no change in drug offenses, suggesting that the ease

[12]We defined violent offenses as fighting, assault, sexual misconduct and sexual violence, inappropriate sexual conduct and sexual violence, inappropriate sexual harassment and sexual abuse, sexual violence, and killing.

Table 6. Impact of Eased Communication by Infraction Type

Misconduct category	Pre-treat mean	Borusyak estimator		Bootstrap DID	
		Estimate	Estimate %	Estimate	Estimate %
Violent	0.00294	-0.00099***	-33.5%	-0.00094***	-32.1%
		(0.00012)		(0.00035)	
		0.000		0.000	
Violent (inclusive)	0.00458	-0.00285***	-62.1%	-0.00253***	-55.2%
		(0.00057)		(0.00089)	
		0.000		0.004	
Misuse of communications	0.00083	-0.00043**	-52.0%	-0.00035	-42.6%
		(0.00020)		(0.00031)	
		0.032		0.340	
Drug	0.00115	-0.00034	-30.0%	-0.00030	-25.8%
		(0.00034)		(0.00052)	
		0.310		0.582	
Other	0.01100	-0.00260*	-23.6%	-0.00178	-16.2%
		(0.00150)		(0.00168)	
		0.083		0.289	

Notes: The misconduct categories are mutually exclusive using the violent (inclusive) definition. Borusyak estimate, standard error, and p-value uses method of Borusyak *et al.* (2024). The dependent variable is weekly infractions (removing dismissed infractions, infractions pending an outcome, or infractions without any outcome) for people incarcerated between 1/1/2015 and 10/23/2022. We control for prison facility, week - year, individual and demographic characteristics (race/ethnicity, veteran status, sex, current education level, and age), and current and prior convicted offenses. Standard errors (displayed in round brackets) are clustered at person and facility level. DiD estimate, standard error, and p-value use the wild cluster bootstrapping method for OLS, with the same set of controls and clustering.

of communication predominantly impacted interpersonal conflict, rather than non-violent behaviors. Lastly, there is a marginally significant decline in other types of misconduct, however, the marginal significance does not persist once bootstrapping the standard errors. Overall, we find that it is violence that decreased as a result of free and eased communication, though it is worth to note that point estimates on all outcomes are negatively signed.

5 Conclusion

We find that easing communication for incarcerated individuals, through the implementation of Ameelio, significantly reduced in-prison misconduct in Iowa. An alternative way to see this

impact, displayed in Figure A1, visualizes the reduction in the counts of misconduct on a weekly basis across all misconduct, violent, and violent-inclusive categories. Prior to Ameelio's rollout, facilities in Iowa experienced about 139 misconducts per week. Post-Ameelio, we see this reduced to about 90-100 misconducts per week. This suggests a promising strategy for creating safer prisons and supporting state rehabilitation efforts. The observed decrease in overall misconduct, particularly in violent and intimidating behavior, underscores the importance of accessible communication in promoting safer and more humane prison environments. Our findings may also suggest that video connection could be particularly beneficial for individuals and allows people to keep stronger connections than just audio alone, which has been evidenced before in non-prison contexts (Sherman *et al.*, 2013). Future research will explore whether these benefits extend to reducing recidivism rates and promoting successful re-entry into society.

Our analysis, supported by anecdotal evidence from Ameelio and Iowa staff, also suggests that Ameelio might have contributed to a cultural shift within the prisons. Corrections workers face significantly higher levels of workplace violence than any other occupation, with a rate of 149 violent crimes per 1,000 workers – 18 times the national average of 8 per 1,000 workers (U.S. Department of Justice, 2022; Hughes & Vixama, 2023). This environment contributes to high turnover rates and significant stress for staff. With the introduction of Ameelio's technology, violence decreases in prisons and these changes have the potential to promote a more rehabilitative atmosphere, fostering more cooperation. Future work will share more details about the experience of using Ameelio from surveys.

Overall, our evidence to date suggests that easing communication among prisoners and their loved ones can be a promising strategy to increase safety in prisons.

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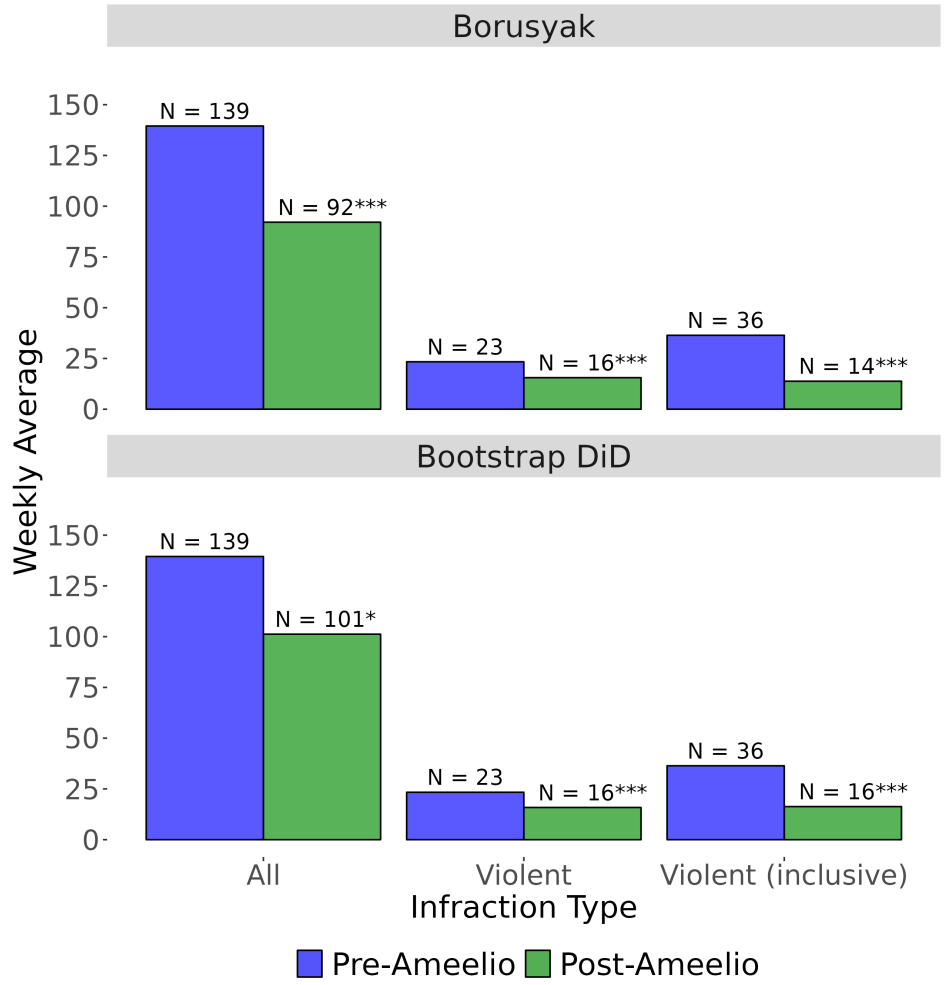
Appendix

Figure A1. Weekly Misconduct Averages across All Iowa Facilities, by Misconduct Category



Note: Blue bars display the pre-Ameelio weekly averages. Green bars displays the effects of Ameelio using weekly misconduct counts and our different estimators (Borusyak vs Convention DiD with bootstrapped standard errors) by the type of infraction.