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Deflecting suicide and mental health calls from law enforcement with an embedded crisis line specialist at a 911 center: A synthetic control analysis

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Abstract

Law enforcement are the default responders to mental health- and suicide-related calls, and law enforcement can escalate mental health crises to hospitalizations, uses of force, and deaths. Mental health crisis lines, such as 988, are an alternative underutilized mental health crisis resource compared to estimated annual mental health-related 911 calls. This study assesses whether embedding a counselor at a 911 center could reduce mental health- and suicide-related police responses by transferring 911 calls to a mental health crisis line. A quasi-experimental synthetic control analysis assessed police response rates after embedding a crisis line counselor at a 911 emergency communications center in Mesa, AZ in 2021. Authors used publicly available 911 data from 27 cities to create donor pools for synthetic control analyses of police responses to suicide and mental health calls. Embedding a 911 crisis line counselor was associated with 22.27–47.96 fewer police responses to suicide calls per quarter per 100,000 people, relative to a synthetic control unit. The lower suicide call rate translated to an estimated 228.1–490.6 police hours reduced per quarter in Mesa. There was no evidence to suggest that Mesa's police response rate to mental health calls decreased. The embedded presence of a crisis line counselor at a 911 center may facilitate interdisciplinary trust that enables call routing to crisis lines. Emergency communication centers should consider embedding crisis line staff to divert calls from police, limiting the expansion of the police footprint.

Introduction

Law enforcement officers are the predominant responders to suicide and mental health crises (M. E. Balfour et al., 2022; Borum et al., 1997; Gasior, 2020; Koziarski et al., 2022). Officers can struggle with suicide and mental health crisis responses (Compton et al., 2014), as their presence can incite fears that escalate to arrests and use of force, or hospitalization (Cojean et al., 2020; Fuller et al., 2015; Morabito et al., 2017). Law enforcement trainings to increase officer awareness of mental health issues, self-efficacy, and de-escalation skills have proliferated (Watson et al., 2017). Trainings, such as the 40-hour training in the Crisis Intervention Team model, can increase officer referrals to mental health crisis resources (Comartin et al., 2019), but system discontinuities prevent transfers from traditional 911 pathways to the mental health crisis response continuum (M. E. Balfour et al., 2022). Law enforcement predominately transport people in mental health crises to emergency departments (Bakko et al., 2025), which can be time consuming, frustrating and ineffective (Harada et al., 2021; Hickey et al., 2020). Emergency departments can be traumatic: mental health crisis patients sometimes wait weeks for placement at psychiatric hospitals in a process often referred to as 'ED-boarding' (K. Nordstrom et al., 2019). After immediate care, emergency departments struggle with connecting people to post-crisis mental health treatment (Currier et al., 2010; Vakkalanka et al., 2021). The traditional public mental health crisis response system needs reform.

The Black Lives Matter protests in 2020 spurred momentum for alternative response models that decrease the role and presence of law enforcement in mental health crises. Some mental health crisis models can handle calls that would otherwise be handled by police, decreasing the total incidents that could escalate to law enforcement use of force or arrest (M. E. Balfour et al., 2022; Compton et al., 2024). In-person community response teams are one example of a model that can address 911 calls involving social and mental health needs, suggesting that 911 mental health crisis calls can indeed be safely resolved by civilians (Davis et al., 2025; Dee & Pyne, 2022; Waters, 2021). Crises resolved upstream (e.g. mental health crisis lines, mobile crisis teams) could prevent the utilization of downstream acute crisis services (e.g. emergency departments, psychiatric hospitalization, arrests) that can be traumatic, expensive, and often in high demand (Munetz & Griffin, 2006; Swanson et al., 2022; Ward-Ciesielski & Rizvi, 2021).

Mental health systems are developing systemic frameworks to standardize and expand crisis response services as alternatives to 911 default law enforcement pathways. The Substance Abuse and Mental Health Services Administration describes crisis system components as a three-part framework: "someone to contact" (e.g., call centers), "someone to respond" (e.g., mobile crisis teams), and "a safe place for help" (e.g., stabilization facilities) (SAMHSA, 2025). In July, 2022, the nationwide three-digit 988 crisis hotline launched as a toll-free number for around-the-clock suicidal crisis counseling, e.g., "someone to contact" (*988 Lifeline*, 2022; M. Balfour & Minkoff, 2022). The 988 hotline allowed people to reach the National Suicide Prevention Lifeline (NSPL) with an easy-to-remember three-digit number. When someone contacts a mental health crisis line, call takers answer, listen, provide support, empathize, and connect the caller with local resources. Crisis line callers describe 988 as helpful, even life-saving (Gould et al., 2025). When NSPLs make follow-up calls to callers, clients report that the intervention prevents them from killing themselves and keeps them safe (Gould et al., 2018). Rather than a single call center, there are 200 distinct 988 call centers spread across the country; the decentralization is meant to encourage call center familiarity with and referral to local resources (*988 Lifeline*, 2022). Crisis line staff determine whether a call presents an imminent risk, which is when a person expresses both immediate intent and capability of suicide (Gould et al., 2016). Crisis line calls that present imminent risk can be routed to emergency services (e.g. law enforcement, emergency medical services). Less than 2% of 988 calls require emergency assistance and are routed to 911 emergency services (SAMHSA, 2023). About one in four crisis line calls involving imminent risk are routed to emergency services without collaboration with the caller (Gould et al., 2016). Goldman and colleagues (2025) assessed the characteristics of calls routed from 988 to 911: people who are Black, male, or at imminent risk of harm were more likely to be rerouted from 988 to 911 for active rescue. However, only a third of 988 callers with serious distress indicated they would call 988 again (Purtle et al., 2023).

Some mental health crisis lines have the capability of dispatching a mobile crisis team, offering an alternative in-person response to law enforcement. There is a thin but growing body of research on the mobile crisis model. Behavioral health practitioners have been responding to mental health crises in community settings since the 1960s (Center for Police Research and Policy, 2021). Attending to crises outside of the hospital or healthcare setting is the key distinction that separates mobile crisis from other crisis services provided by behavioral health service agencies (Alexander & Zealberg, 1999; Geller et al., 1995; Gillig et al., 1990; Guo et al., 2001). Mobile crisis teams generally attempt to de-escalate crises, screen clients to determine eligibility for psychiatric hospitalization, provide safety plans, and link people to post-crisis mental health care (Center for Police Research and Policy, 2021; Dyches et al., 2002; Watson et al., 2019). Compared to emergency department-based crisis services, mobile crisis teams are effective in diverting people from hospitalizations (Guo et al., 2001; Hugo et al., 2002; Vakkalanka et al., 2021) and connecting people to mental health services after a crisis incident (Currier et al., 2010; Dyches et al., 2002; Kim & Kim, 2017). Compared to law enforcement responses, mobile crisis teams may also prevent future arrests (Swanson et al., 2025).

Despite crisis lines' ability to de-escalate mental health crises and connect people to mental health services, there are reasons to suspect that people call 911 for mental health crises instead. The most utilized public resource is 911 (Transform 911, 2022); an estimated 240 million 911 calls occur every day (National Emergency Number Association, 2021). Several 911 calls do not fit the original scope of law enforcement response (Transform 911, 2022). A recent historical analysis discusses how the 911 call for service system has shaped and expanded the role of law enforcement to attend to caller needs beyond those relating to crime (Gillooly & Thacher, 2024). Mental health-related 911 calls are a prime example of the expanded police footprint, as its utilization as a public resource has grown to include specialized emergencies beyond the capabilities of the responders (Gillooly & Thacher, 2024). There are no uniform metrics to determine the proportion of 911 calls that are mental health-related, let alone those that flag suitability to route to mental health crisis lines. Some analyses estimate 20% of 911 calls are mental health-related (Center for American Progress, 2020). However, even a conservative estimate of 10% of the annual U.S. 911 calls (24 million) would far outnumber the annual calls to 988 (6 million) (Saunders, 2025). It is possible that several mental health-related 911 calls are escalated with active weapons or threats where law enforcement presence is necessary and would not appropriate for a mental health crisis line. People who call 911 may provoke police action by presenting situations that involve weapons, barricades, or otherwise aggressive behavior that warrants in-person police responses (Patton & Fremouw, 2016). However, it is unlikely that all of the estimated 24 million mental health-related 911 calls are escalated to levels where police response is necessary, and several may be suitable to deflect to mental health service responses.

One reason behind the utilization differences between 911 and mental health crisis lines is the lack of awareness of mental health crisis lines. A recent survey suggests that only about one in five Americans were aware of 988, whereas over half of respondents said they would call 911 (Ueda et al., 2026). After receiving information about 988, respondents expressed a willingness to use it (Ueda et al., 2026). Other reasons for lack of 988 utilization include law enforcement involvement, forced hospitalization, and service fees (Ueda et al., 2026), though these reasons would not be applicable to 911 callers, since people who call 911 often expect police responses. It is likely that people call 911 for mental health crises because they do not know who else to call, and such callers would benefit from an intervention that transfers 911 calls to mental health crisis resources.

To our knowledge, interventions that route 911 calls to mental health crisis lines have not been empirically tested. Over-the-phone crisis resolutions are upstream interventions that could deflect calls from legal entanglement (Beck et al., 2020; Munetz & Griffin, 2006). Emergency Communications Centers (ECCs), often also referred to as public safety answering points, could be key to diverting calls from law enforcement (Gillooly & Thacher, 2024), but most ECCs do not have standard protocols for routing 911 calls to crisis resources (Pew, 2021). There are an estimated 240 million 911 calls answered by 10,000 ECCs in the U.S. annually (Federal Communications Commission, 2024; NENA, 2021), each with their own governance and routing protocols (Choi et al., 2024). 911 professionals often default to law enforcement responses, expressing concern about legal liability and lack of trust with engaging alternative crisis resources (Hedden-Clayton et al., 2025; Pew, 2021). Some communities deescalate 911 crisis calls over the phone, though their approaches vary (Beck et al., 2020). Mental health crisis service models based at ECCs include: training 911 professionals about mental health calls (*CIT International - CIT Support Training for 911*, n.d.), embedding crisis professionals in 911 centers to answer calls directly (Aldridge, 2025), advising transfer of 911 calls to other crisis resources (Beck et al., 2020), or a combination of these strategies.

This study examines whether embedding a crisis line counselor in Mesa, Arizona's 911 ECC diverted law enforcement from mental health and suicidal crises by transferring calls to a local mental health crisis line. A synthetic control analysis compares Mesa's trends of police response rates to mental health and suicide calls after the embedded crisis line counselor intervention. Research questions were: when compared to synthetic control groups, did embedding a crisis line counselor at a 911 ECC decrease police responses to A) suicide calls or B) mental health calls? We hypothesized that embedding a crisis line counselor in an ECC would significantly reduce police responses to both call types.

Materials and Methods

Study Setting

The study setting is Mesa, Arizona, a metropolitan city in the United States with 510,680 people, or 3,635 people per square mile. Mesa's median household income is $73,766, and 10.5% of households live under the federal poverty line (U.S. Census Bureau, 2023). Mesa is 61% white, has 27% people of two or more races, 91% of adults have graduated high school, and 31.5% have a Bachelor's degree or higher according to the U.S. Census (U.S. Census Bureau, 2023). Areas with higher proportions of non-white people, private health insurance, and lower levels of education have shown lower 911 suicidal call rates (O'Connell et al., 2022). The Mesa Police Department (MPD) operates the ECC, receiving around 1.4 million calls per year, and assumes responsibility for dispatching police, fire, and medical calls. Mesa dispatches police to ~245,000 911 calls per year (48 calls per 100 people per year) (City of Mesa, 2024a). Solari is a crisis line that takes 988 calls for the state of Arizona. Solari launched in 2007 as a 24/7 crisis line and has since expanded to serious mental illness determinations, peer warmlines, and 211 resource navigation responses. Solari GPS-tracks and dispatches mobile crisis teams in central Arizona, receiving over 35,000 Arizona crisis calls per month (Solari, 2025).

Call diversion programs in Mesa

Solari and the Mesa Police Department worked together to identify mental health and suicide 911 calls that could be routed to a Solari's crisis line. First, the two agencies targeted suicide calls. The Mesa Police Department drafted a policy that permitted routing of suicidal threats without plans or means, effective on October 16, 2019. In the month before the policy was enacted, the 911 professionals at the Mesa Police department received one hour of training that described the updated policy language, what the Solari crisis line did, how to identify suicidal and mental health behavior appropriate for call routing, how to categorize the calls, and how to transfer the calls to Solari. The training was jointly facilitated by Solari and the Mesa Police Department. 911 professionals would identify and code the calls before recommending the option to the caller, who would consent before their call would be transferred (Mesa Police Department, 2019). On August 17, 2020, the Mesa Police Department enacted a similar policy and training that enabled routing of mental health-related calls. The logistics of routing mental health calls resembled those of the suicide call policy change: for a mental health call to be eligible for transfer, there could not be apparent danger to self or others, and the caller had to consent to the transfer (Mesa Police Department, 2020).

On June 5, 2021, Solari embedded a licensed professional counselor at the ECC to help with the identification of additional transferable calls. The crisis line counselor learned the ECC procedures, norms, and coding practices. The crisis line specialist did not assume call taking responsibilities but rather advised in routing and dispatch decisions made by the 911 professionals. Specifically, he listened for the types and severity of calls that the Solari crisis line would be able to handle. The crisis line counselor was involved in coaching and direct training of the 911 professionals during shifts. Making decisions on specific calls in a real-world environment gave clearer, concrete examples of appropriate calls for routing to the mental health crisis line.

Data and Measures

This study seeks to quantify the impact of the embedded counselor on the frequency of law enforcement responses to suicide and mental health calls using publicly available call for service data. The Mesa, AZ data came from the city's open data portal (City of Mesa, 2024b). The data contained all calls for service dispatched to MPD officers through its Computer Aided Dispatch system. The data included a unique event number, call date, time, duration, priority level, case type, and call source. Officer-initiated call sources (responses to something an officer saw in the field) were filtered out, as they could not have been impacted by the embedded crisis line counselor.

Mesa's data were compared to a synthetic control unit, which drew from several donor sites that were reasonably comparable to the test site (Abadie et al., 2015). Researchers searched for donor site data that consisted of police responses to mental health incidents initiated by a 911 call, had publicly available 911 data, and contained at least one call type relating to suicide or mental health. We identified donor sites by searching public websites from every city in the United States whose population was greater than 100,000 people (n=369) to mimic Mesa's urban environment. We performed Google searches using "[city name] open data" and "[city name] calls for service" from October 2024 – March 2025. We used "Computer Aided Dispatch", "call for service", or "police incident" data; "police stop" or "crime" data were excluded, since they did not contain 911-initiated mental health calls. Donor sites also could not have implemented a 911 embedded counselor program during the study period. To check for treatment contamination, we asked ChatGPT-5 to search for press releases that described embedded clinician programs at 911 centers at each of the cities; we verified its findings with manual Google searches. Table 1 lists donor sites (n=26), their states, populations, and rates of 911 calls for suicide, mental health, and all calls per quarter per 100,000 people.

[insert table 1 around here]

We counted Mesa's "Suicide" and "Behavioral Health" initial call types as the outcome variables[1]. The trends of Mesa's "Suicide" calls were compared against a synthetic control group of similar call types (e.g. suicidal, suicide attempt, etc.). Mesa's "Behavioral Health" calls were compared with a synthetic control group of similar call types (e.g. mental patient, mentally disturbed person, etc.)[2]. Among the 26 donor sites, 20 included suicide-related categories, and 17 included mental health-related categories. Calls that were resolved over the phone were excluded in all but one site that did not have relevant data filters (Charlotte). The number of law enforcement calls for service for each type were aggregated by quarter per site to capture seasonal variation. It is recommended that there is low volatility in the outcome variable when running

a synthetic control analysis (Wiltshire, 2025), and quarterly rates were less volatile than monthly rates. The suicide call rate in a given city and quarter was captured using this equation: $SuicideCallRate_{qct} = ((SuicideCalls_{qct})/(Pop_{yct}))*(100{,}000)$, with $SuicideCalls_{qct}$ representing the number of calls dispatched to law enforcement in a given quarter and Pop_{yct} indicating the size of a city's population in each year from US census data (United States Census Bureau, 2024). The suicide call rate equaled the total number of suicide calls in each city that were dispatched to law enforcement per 100,000 people each quarter. The same formula was applied to mental health calls: $MentalHealthCallRate_{qct} = ((MentalHealthCalls_{qct})/(Pop_{yct}))*(100{,}000)$.

Analytic Strategy

To examine the effects of the embedded crisis line counselor, we treated Mesa as a quantitative case study and employed quasi-experimental synthetic controls (Abadie et al., 2015; Bartos et al., 2020; Bartos & Kubrin, 2018; Gottlieb, Epperson, et al., 2024; Gottlieb, Harper, et al., 2024). The synthetic control method extends the difference-in-difference framework, which assumes trends across treatment and control groups continue in parallel if not for the intervention. It is often difficult to find a reasonable comparison site with similar pre-period trends (Bartos & Kubrin, 2018). The synthetic control method draws weights from a pool of potential donor sites to mimic the treatment group's pre-period trends (time-invariant, non-negative, and add to one). We used all prior values of the outcome variable as covariates to optimize pretreatment fit between Mesa and its synthetic control (Bartos et al., 2020; Gottlieb, Epperson, et al., 2024), as prior outcome values would be more predictive of future values than any other covariate (Ferman et al., 2020).

The pretreatment periods should begin as early as possible while retaining a sufficient number of donor sites. There is no established minimum of donor sites for a synthetic control analysis, though having too few donor sites risks a type 2 error. For the suicide call rate analysis, 20 donor sites had pretreatment data starting in 2018q1. For the mental health call rate analysis, 17 donor sites had pretreatment data starting in 2018q3, when Mesa began to track mental health-related calls. Both pretreatment periods ended after 2021q2, the last quarter that was majority unaffected by the embedded counselor.

It is often difficult to isolate the effect of one intervention from those of other policy interventions at the study site. The initial crisis line transfer policies in 2019q4 and 2020q3 occurred before the embedded counselor intervention in 2021q2, and their effects would likely have made the most impact before the post-treatment period began in 2021q3. Any outcome values affected by the initial crisis line transfer policies before embedding the crisis line counselor would have been included in the synthetic control weighting. It is possible there were lagged effects of the initial crisis line transfer policies that contaminated the outcome values after the crisis line counselor was embedded. However, a lagged year-and-a-half impact of the initial crisis line transfer policies would be less plausibly responsible for a drop in police responses than the new impact of embedding a crisis line counselor in the 911 center. The posttreatment started in 2021q3 and continued through 2023q2 to capture at least two years of post-intervention data; extending beyond two years of post-intervention data would invite concerns that other confounding influences may affect the police response rates. The post-intervention trends of the treatment group were compared against those of the synthetic controls.

We used Stata 19.5's *synth* command to employ the synthetic control method (Abadie et al., 2015). We first described the pre-intervention goodness of fit using the root mean squared prediction error (RMSPE) term and compared the post- and pre-intervention RMSPEs. If the post-intervention RMSPE was substantially larger, the comparison suggested that the effects of Mesa's embedded counselor was substantively important (Bartos & Kubrin, 2018). To assess magnitude, we compared the call rate differences between Mesa and 'synthetic Mesa' in the pre-intervention period with the differences the post-intervention period. Determining statistical significance when using the synthetic control method is not like traditional regression models (Abadie et al., 2015). To assess whether the observed effects happened by chance, placebo in-space estimates (i.e. creating new synthetic control groups for each of the donor sites) test whether the effect in Mesa was larger than almost all of the other jurisdictions (Abadie et al., 2015; Bartos & Kubrin, 2018; Galiani & Quistorff, 2017). If it was, it is unlikely that the observed effects were due to chance (Abadie et al., 2015; Galiani & Quistorff, 2017). We used Stata 18's synth-runner command, which provided a standardized p-value for each post-intervention quarter (Galiani & Quistorff, 2017).

To estimate the law enforcement hours saved, we calculated the average duration of on-scene time for suicide and mental health calls in Mesa and multiplied it by two officers. We then multiplied the officer hours by the synthetic control coefficients and adjusted the rate per 100,000 to Mesa's population average=510,680.

[1] In late 2020, Mesa showed an unusual change in trends among its mental health and suicide 911 call data. Mental health-related calls peaked for a five-month period, and suicide-related calls dipped in the same five-month period by similar proportions. The change occurred directly after the August, 2020 MPD policy change that expanded the categorization of mental health calls, which may have caused confusion among 911 call takers. To adjust for the suspected data issue, we assumed that the excess mental health call counts were suicide call counts and imputed accordingly. Call trends of the raw data and the authors' imputation strategy are discussed in the supplemental appendix, as are robustness checks that remove the months in question and analyze the raw counts.

[2] The term ‘behavioral health’ encompasses issues of both mental health and substance use. Substance use-related 911 calls are often medical emergencies that are often not appropriate for routing to crisis lines. Mesa’s data used the term “behavioral health”. The term ‘mental health’ was more common among the comparison ECC sites and was chosen here for conceptual relevance.

Results

Suicide call rates

First, we report the synthetic control analysis on police responses to suicide calls. The weights that comprised the synthetic control unit were: Everett=.213, New Orleans=.037, Norman=.036, Seattle=.334, Tacoma=.38, where ‘synthetic Mesa’ was drawn from 21.3% of Everett’s suicide call rates, 3.7% of New Orleans’ suicide call rates, etc. Figure 1 shows the suicide call rate trends in Mesa (solid black line) and synthetic Mesa (dashed black line) pre- and post-intervention. Pre-intervention, the absolute value difference between Mesa and synthetic Mesa remained within 18 calls per 100,000 people. We treat post-treatment differences between Mesa and synthetic Mesa as the effect of embedding a counselor at the ECC. If the differences between Mesa and synthetic Mesa were larger than those of nearly all the donor cities, it is unlikely that the differences were due to chance.

[insert figure 1 around here]

Figure 1 shows Mesa’s suicide call rate was visibly lower than synthetic Mesa after the embedded counselor intervention. Mesa’s call rate increased relative to synthetic Mesa in 2021q3 by 13.43 calls, then decreased in 2021q4 to -22.27 calls, decreased in 2022q1 to -35.29 calls, decreased in 2022q2 to -36.58 calls, decreased in 2022q3 to -43.07 calls, decreased in 2022q4 to -47.96 calls, increased in 2023q1 to -44.75 calls, and increased in 2023q2 to -35.07 calls. Table 2 quantifies the synthetic control analysis. Mesa’s difference was greater than all but one of the placebo in-space estimates in 2021q4 (p=.05), all but three placebo estimates in 2022q1 (p=.15) all but two of the placebo estimates in 2022q2 (p=.10), all but one placebo estimate in 2022q3 (p=.05), all placebo estimates in 2022q4 (p<.01), all but two placebo estimates in 2023q1 (p=.10) and all but four placebo estimates in 2023q2 (p=.2).

[insert table 2 around here]

Mental health call rates

Next, we report the synthetic control analysis on police responses to mental health calls. Table 3 shows the composition of the synthetic control unit from cities with mental health call rates most like Mesa in the pre-treatment period. The weights were: Chandler=.178, Chula Vista=.778, New York=.001, Portland=.043. Pretreatment fit was poor. As such, we are less confident in speculating whether post-treatment differences are a result of the embedded crisis line counselor at 911. Figure 2 shows the mental health call rate trends in Mesa (solid black line) and synthetic Mesa (dashed black line) pre- and post-intervention.

[insert figure 2 around here]

Figure 2 shows Mesa’s mental health call rate fluctuated above and below synthetic Mesa’s before and after the embedded counselor intervention. Given the poor pretreatment fit, and the continued fluctuation after the intervention, we cannot say whether the embedded counselor had any effect on the mental health call rate. Table 3 quantifies the results of the synthetic control analysis.

[insert table 3 around here]

Before the embedded crisis counselor at 911, the mental health call rate difference between Mesa and synthetic Mesa ranged between -6.61 to 8.87 calls per 100,000 people. After the intervention, Mesa’s mental health call rate fluctuated between -9.09 calls lower to 4.84 calls higher than synthetic Mesa’s. The post-intervention differences between Mesa and synthetic Mesa remained firmly within the normal distribution of placebo estimates; the standardized p-values never dropped below p=.59. Because of the poor pretreatment fit, we are not confident that the synthetic control analysis represents a meaningful estimate of the causal association. Because there were no obvious changes in the Mesa’s mental health call rate’s trajectory after the embedded counselor intervention, we doubt there was substantial impact.

Police hours saved

We translated the synthetic control results from the suicide rate analysis into approximations of police hours saved. MPD averaged 60.09 minutes of on-scene time for suicide calls from 2021-2024. After embedding a crisis line counselor at its ECC, Mesa’s 22.27–47.96 lower call rate per 100,000 people translated to 228.1–490.6 police hours saved per quarter. We did not estimate police hours saved for mental health call rates because they did not appear to significantly decrease.

Discussion

This study assessed the impact of embedding a crisis line counselor at a 911 center on rates of law enforcement responses to suicide and mental health calls in Mesa, AZ using a synthetic control approach. To our knowledge, this is the first study empirically testing a 911 to crisis line call routing intervention. After embedding a crisis line counselor at 911, Mesa's suicide call rate was lower than synthetic Mesa's by 22.27–47.96 calls per quarter per 100,000 people. Placebo estimates suggested Mesa's difference was greater than all placebo sites in one post-intervention quarter ($p<.01$), all but one placebo site in two post-intervention quarters ($p=.05$), and all but two placebo sites in two post-intervention quarters ($p=.10$). We did not find evidence that the mental health call rate decreased. These results suggest that embedding a crisis line counselor at an ECC can reduce police responses to suicide calls, avoiding potentially problematic incidents of police escalation.

Routing calls 'upstream' could reduce need for other 'downstream' resources such as emergency departments (Bakko et al., 2025), which often present time and financial burdens for consumers, police, and health systems (Harada et al., 2021; Hickey et al., 2020; B. R. Nordstrom, 2011). Emergency department visits are expensive for consumers and can often result in long 'ED boarding' delays while waiting for psychiatric inpatient placement (K. Nordstrom et al., 2019), tying up time and space for other health patients. Crisis lines primarily address low-risk over-the-phone suicidal ideation, but decreasing police presence may also prevent some incidents from dangerous escalations, particularly among people of color (Saleh et al., 2018). People and family members with lived experience of mental health crises prefer models without police, as police presence can escalate the situation (Pope et al., 2023). The reduction of police hours in this study shows a potential benefit for both people in mental health distress (through reduced contact hours with police during a crisis), and for law enforcement agencies (through reduced labor associated with mental health crises). Law enforcement agencies operate a majority of ECCs (Choi et al., 2024), and would likely be involved in the approval of a program involving the deflection of 911 calls to mental health crisis resources. Seeing the quantifiable reduction of police hours could serve as an incentive for law enforcement administrators to explore embedded 911 counselor or similar mental heath deflection programs.

Routing 911 calls to mental health crisis lines could also provide benefits for the person in distress. Mental health crisis lines can de-escalate the caller, activate mobile crisis, and connect people to ongoing mental health resources (Gould et al., 2025), but people may not know about their local crisis line and call 911 instead (M. Balfour & Minkoff, 2022). Enabling transfers from 911 to crisis lines and other mental health resources could improve care continuity and long-term mental health. Future studies could track outcomes of calls routed from 911 to crisis lines to quantify the downstream impact. Transfer policies should be mindful of racial bias among call-takers; if crisis line call-takers are more likely to transfer Black callers back to 911 (Goldman et al., 2025), 911 call-takers may also be less likely to transfer Black callers to mental health crisis lines.

These findings suggest that crisis line specialists provide important assistance with 911 to crisis line call routing. A Solari representative learning the ECC's culture, policies, procedures, practices, and norms likely built personal- and agency-level trust. 911 professionals feel personal liability to callers expressing suicidal ideation (Hedden-Clayton et al., 2025; Pew, 2021), and establishing stronger connections between 911 and 988 professionals can assuage fears that the calls would be mishandled or unanswered. The crisis line specialist assisted with translating ECC call routing policies into actual calls, rather than hypothetical training scenarios, which may be important for sustained routing practices. ECCs should welcome collaboration with crisis lines and arrange protocols for meaningful involvement of interdisciplinary crisis line staff. Future qualitative studies could examine mechanisms key to successful routing interventions.

We did not find a meaningful change in Mesa's mental health-related call rate. It is possible that suicidal calls are often first-person calls, making them more appropriate to route to a crisis line and speak directly to crisis line specialists. Third-party bystanders may not have a relationship with the person in distress and may not wish to get involved themselves, preferring law enforcement come out to address the situation. Additionally, a person in mental health distress may experience anosognosia, or unawareness of their mental health condition. If someone experiences a delusion of intruders, for example, they may not have any interest in talking to a crisis line; they may refuse the transfer and only request a police presence. The broader concept of 'mental health' calls may also make it difficult to articulate appropriate calls to route. Suicidality has clearer, more distinct concepts (i.e. ideation, threats, means), whereas 911 professionals may be less confident in identifying mental health concepts that vary situationally or require clinical judgment (i.e. speaking 'quickly', 'erratic' behaviors, 'disorganized' thought patterns, etc.). 911 professionals often have limited information, and they may not have the benefit of knowing the accuracy of the caller's claims. When faced with uncertainty, 911 professionals often default to dispatching law enforcement (Hedden-Clayton et al., 2025; Pew, 2021). Studies that analyze the content of the suicide and mental health calls could assess the routing potential with more specificity.

Limitations

Limited and inconsistent language across ECCs made it difficult to parse meaningful differences in publicly available data. We used data labeled as "Computer Aided Dispatch" (CAD), "calls for service", and "police incidents". The variance between the terms suggested potential differences in the types of data being compared: "police dispatch events" in Mesa may represent different activities than "calls for service" in New Orleans. ECC call file names were often accompanied by brief descriptions, though not infrequently the terms like "calls for service" and "police incidents" were used interchangeably, making it difficult to parse whether the differences were meaningful or semantic. There was variation in how the

ECCs coded suicide and mental health calls, as mental health calls are often aggregated with larger categories like “check welfare” or “public disturbance”. Suicide calls are a more distinct concept, making the call type more comparable across ECCs.

Further analysis could filter calls by priority level, as calls with high priority levels involving weapons or active violence are not likely to be appropriate for routing to 988. However, priority levels were inconsistently defined across the databases, and applying consistent criteria in filtering out high priority calls was not possible. Moreover, given that Mesa’s interventions involved the re-classification of calls previously deemed to require police responses, some of the routable calls in the donor sites were likely to have been classified as high priority incidents. As such, all suicide- and mental health-related calls were included, regardless of priority level, recognizing some of the targeted call counts still required police responses. Cities with particularly low suicide call rates may instead be tracking suicide attempts, rather than callers with suicidal ideation, and would be inappropriate comparisons to Mesa. Unfortunately, we do not know whether the cities track suicide calls differently or whether the cities had lower rates of 911 suicidal ideation calls. When dropping four sites with low suicide call rates (< 10/100,000 people/quarter), the effect size did not change and remained larger than all placebo sites in one post-treatment quarter ($p<.01$), and larger than all but one placebo in two post-treatment quarters ($p=.0625$). The supplemental appendix describes robustness checks that dropped individual cities to determine outsized influence and examined non-suicidal call trends to assess possible confounders.

Finally, ECC governance structure would likely affect whether ECCs know about 988 and route calls to it. Police-operated ECCs would be less likely to route calls than independently operated ECCs (Choi et al., 2024). We did not have a large enough subsample of police-operated ECCs to compare Mesa to ECCs with similar police-operated governance structure; in this study, the police-operated Mesa ECC was compared to a mixed group of independent- and police-operated ECCs, and the suicide call rates were still associated with significant relative declines. Police responses may differ across state-level policies or regional-level cultural differences, but only one southwestern city other than Mesa (Chandler) did not have a similar embedded crisis line counselor intervention and availed downloadable law enforcement response data that contained enough information to perform the analyses. We suggest cautious interpretations of the mental health call analysis given its poor pretreatment fit.

Conclusion

This study used synthetic controls to assess the impact of embedding a crisis line counselor at a 911 center on law enforcement responses to mental health and suicide calls. Embedding a crisis line counselor at 911 was associated with 22.27–47.96 fewer police responses to suicide calls per quarter per 100,000 people compared to a synthetic control unit, saving Mesa an estimated 228.1–490.6 police hours per quarter. The mental health call response rate did not decrease. Fewer law enforcement responses to suicide calls could decrease acute service utilization and escalated police incidents. ECCs should consider embedding crisis line staff to assist with identification of suicidal calls for appropriate transfer. Deflecting suicide-related 911 calls to mental health crisis lines could invite the mental health crisis system to assume some of the responsibilities associated with the expanded police footprint.

Declarations

Data availability statement: The authors created a dataset of cities with publicly available 911 data and corresponding URLs, available upon request. Processed data of monthly mental health- and suicide-related 911 call frequencies by city are also available upon request.

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Tables

Table 1. Characteristics of cities in the synthetic control analyses

City				Quarterly average per 100k population		
	State	Population (mean 2018-2022)	ECC governance	All 911 calls	Mental health	Suicide
Boise City	ID	233,662	Police	7,784	1260.7	-
Boston	MA	673,948	Police	3,276	-	2.4
Cary	NC	173,971	Independent	671	-	6.9
Chandler	AZ	271,218	Police	7,150	52.6	71.0
Charlotte	NC	882,538	Police	2,493	-	14.7
Chula Vista	CA	274,343	Police	6,683	0.6	2.8
Cincinnati	OH	306,777	Independent	29,510	625.4	-
College Station	TX	120,333	Police	20,695	-	1.1
Everett	WA	111,229	Independent	22,112	667.7	151.5
Fort Lauderdale	FL	182,509	Police	22,946	252.4	81.0
Hartford	CT	120,869	Independent	43,932	400.9	87.2
Irving	TX	249,326	Police	17,969	-	28.8
Lincoln	NE	290,308	Independent	2,794	-	34.2
Los Angeles	CA	3,901,675	Police	9,940	-	75.3
Mesa (test case)	*AZ*	*510,680*	*Police*	*7,112*	*17.2*	*132.2*
Miami	FL	453,098	Police	16,807	245	11.7
Nashville	TN	677,047	Independent	23,044	29.2	75.9
New Orleans	LA	382,330	Independent	22,107	274.6	94.0
New York	NY	8,453,041	Police	19,712	988.3	-
Norman	OK	127,106	Police	11,572	-	179.6
Portland	OR	647,354	Independent	9,462	200	-
San Diego	CA	1,399,116	Police	10,148	300	-
San Francisco	CA	850,494	Independent	19,328	387.7	108.9
San Jose	CA	1,002,486	Police	6,398	80	-
Seattle	WA	743,473	Independent	4,363	110.1	90.0
St. Petersburg	FL	262,077	Police	18,247	410	119.0
Tacoma*	WA	219,008	Independent	15,641	-	186.5
Mean		*871,112*		*14,144*	*350.1*	*74.0*
Standard Deviation		*1,685,134*		*9,855*	*345.3*	*58.5*

*Tacoma launched an embedded clinician program in June, 2023; its effects would not impact this study period

Table 2. Synthetic control weights, pre-intervention fit, and post-intervention outcomes of suicide 911 call rates per 100,000 people. Weights:

Everett=.213, New Orleans=.037, Norman=.036, Seattle=.334, Tacoma=.38

Quarter	Suicide call rate per 100,000 people			Standardized p-value
	Mesa, AZ	Synthetic Control	Difference	
2018q1	158.48	157.02	1.46	-
2018q2	165.37	160.41	4.96	-
2018q3	163.60	160.46	3.14	-
2018q4	157.89	160.74	-2.85	-
2019q1	144.78	147.45	-2.67	-
2019q2	155.40	158.58	-3.18	-
2019q3	170.46	164.90	5.56	-
2019q4	148.45	149.36	-0.91	-
2020q1	148.25	154.14	-5.89	-
2020q2	134.61	133.57	1.04	-
2020q3	159.32	142.14	17.19	-
2020q4	132.64	139.42	-6.78	-
2021q1	124.10	126.54	-2.45	-
2021q2	125.86	135.24	-9.38	-
2021q3	147.66	134.23	13.43	0.20
2021q4	110.15	132.42	-22.27	0.05
2022q1	93.12	128.40	-35.29	0.15
2022q2	97.41	133.99	-36.58	0.10
2022q3	97.61	140.67	-43.07	0.05
2022q4	84.92	132.88	-47.96	0.00
2023q1	89.91	134.66	-44.75	0.10
2023q2	98.70	133.78	-35.07	0.20

Table 3. Synthetic control weights, pre-intervention fit, and post-intervention outcomes of mental health call rates

Quarter	Mental health call rate per 100,000 people			Standardized p-value
	Mesa, AZ	Synthetic Control	Difference	
2018q3	21.07	22.36	-1.29	-
2018q4	24.61	22.44	2.17	-
2019q1	28.57	19.70	8.87	-
2019q2	24.71	22.04	2.67	-
2019q3	19.50	20.38	-0.88	-
2019q4	20.66	17.58	3.08	-
2020q1	16.21	17.41	-1.20	-
2020q2	14.83	19.91	-5.08	-
2020q3	18.58	19.94	-1.36	-
2020q4	18.38	15.96	2.43	-
2021q1	11.19	17.80	-6.61	-
2021q2	12.57	18.37	-5.80	-
2021q3	24.74	19.90	4.84	0.65
2021q4	16.30	18.43	-2.13	0.71
2022q1	13.86	16.29	-2.43	0.59
2022q2	12.49	16.56	-4.07	0.71
2022q3	12.10	18.74	-6.64	0.71
2022q4	11.52	16.74	-5.22	0.71
2023q1	9.19	18.28	-9.09	0.71
2023q2	13.49	18.13	-4.65	0.82

Figures



Figure 1

Synthetic control analysis of Mesa's suicide call rate per 100,000 people after embedding a crisis line counselor in a 911 emergency communications center.

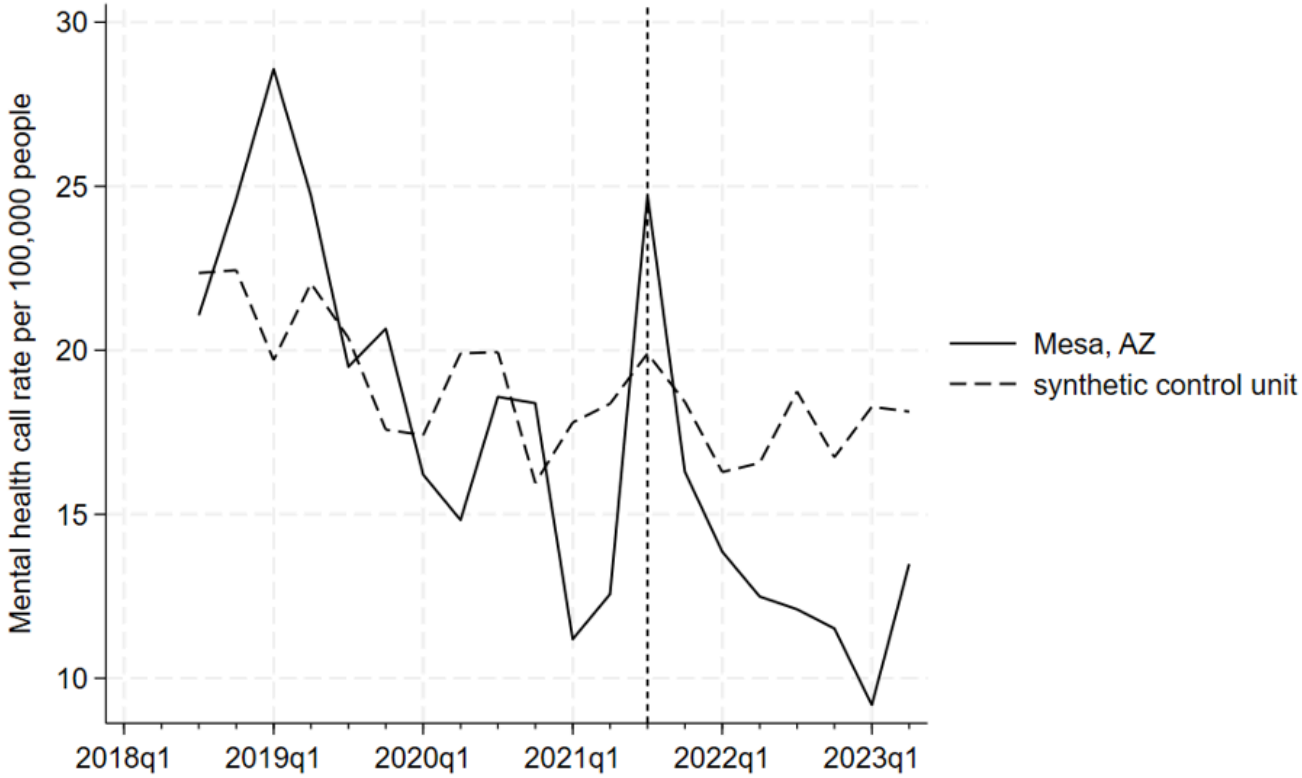

Figure 2

Synthetic control analysis of Mesa's mental health call rate per 100,000 people after embedding a crisis line counselor in a 911 emergency communications center.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- MesasynthmethodsappendixCMHJ032526.docx