

‘Understanding Changing Demand for Police during the Coronavirus Pandemic’

N8 Policing Research Partnership

SUMMARY

Covid-19 has created unprecedented challenges for policing in the UK and globally, both by creating new tasks (e.g. enforcing government restrictions or shielding vulnerable staff), and by shifting patterns in demand resulting from changes in people’s routine activities. There has been some work both in-house and academic, looking at some of these shifts, however these either focus only on crimes, and/or calculate changes by comparing the time period in question to the same time last year, a technique which can provide incorrect and misleading results. In this project we use a mixed-method approach of robust time-series analysis and qualitative interviews with force call centre staff in a UK police force to explore changes in police demand during the different stages of lockdown.

KEY FINDINGS

1. **Fewer Calls, Faster Response, Less Time on Scene:** Overall during the pandemic, Cheshire Constabulary received fewer calls for service than would be expected in the absence of the pandemic. As demand decreased, a higher proportion of calls were attended, and response time also decreased. This was more marked for Grade 2 and Grade 3 category calls than Grade 1, which were already well attended and responded to ASAP. Finally, again for Grade 2 and 3 category calls, the time officers spent on scene was reduced.
2. **Quiet Roads:** During the pandemic and associated lockdown there were fewer people on the street and on the roads. This shows in a drop in Highway Disruption, Road Related Traffic Offences and Traffic Collisions.
3. **Expressions of concern:** Calls about breaches of the Covid-19 regulations were the main source of demand – this is shown in the increase in “ASB” calls, which were not the regular ASB, but rather Covid breach calls coded as ASB. Calls relating to Drugs is also a result of neighbours staying in the home, acting as capable guardians of their areas.
4. **Presence Of Guardians, Absence of Suitable Targets:** Increased guardianship of residences by people staying home shows a drop in residential burglaries, and closing of shops removed suitable targets for shoplifting and theft from motor vehicles
5. **No Visible Change in Domestic Incidents (But Possible Change in Nature):** Despite many concerns, calls data does not show any significant increase in calls about domestic incidents, however interviews reveal a shift towards more child to parent conflicts.

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BACKGROUND

COVID-19 has created unprecedented challenges for policing in the UK and globally, both by creating new tasks (e.g. enforcing government restrictions or shielding vulnerable staff), and by shifting patterns in demand resulting from changes in people's routine activities. There has been some work both in-house by various forces (e.g. and academic, looking at some of these shifts, however these either focus only on crimes, and/or calculate changes by comparing the time period in question to the same time last year, a technique which can provide incorrect and misleading results (Ratcliffe, 2017; Ashby 2020).

To improve on the problems of year-to-date comparisons we use seasonal autoregressive integrated moving average (SARIMA) models to make predictions from historic data on what would have happened in the absence of the pandemic while accounting for overall trends, noise, and other patterns (Ashby 2020a). Specifically, we used data from 01/01/2015 up until 31/01/2020 to build our forecasting model. The model incorporated seasonal trends, public holidays, and any system changes. These SARIMA models were used to forecast what would be expected to occur in the absence of the pandemic, providing a counterfactual against which to compare the actual observed data (calls). Observed data outside the 99% confidence interval around the forecast are considered to be significantly different to expected. Once we had the results, we then interviewed call centre staff about their experience and perceptions of changes during the pandemic. We followed up by showing participants the results from the forecast model, asking them to comment using their experience. With this mixed-methods approach we answer the following research questions:

- How has demand changed?
- How has the nature of calls and how they were addressed changed?
- What is the context around these changes?

FINDINGS

We grouped our findings into five key themes:

Overall calls, attendance, and response

Overall the volume of calls during the first lockdown, the period in-between, and the second lockdown were lower than forecast for 2020 (Fig. 1). The attendance rate (the percentage of calls attended per week) increased more markedly during the first lockdown, and stayed higher overall (Fig. 2). This may be due to the denominator (number of calls) decreasing, as well as to increased time because of lowered demand.

Response times also decreased during the first lockdown, meaning that the time between the call and the first deployed officer became shorter (Fig. 3). These differences were more marked for Grade 2 and Grade 3 category calls. Grade 1 calls were always attended with lights and sirens pre-pandemic, so the slightly lower response time is simply due to quiet roads (see next section). However, with more time, more of the lower grade calls could be attended (Fig. 4), and done so faster (Fig. 5). We also found that time spent on scene was reduced, again especially for grade 2 and grade 3 calls (Fig. 6).

Quiet roads

Another theme to emerge from the research was that roads were quiet, mostly due to people staying at home. Highway Disruption (Fig. 7), Road Related Traffic Offence (Fig. 8) and Traffic Collision (Fig. 9) calls all dropped in the first lockdown, but with a gradual regression to within the forecast boundaries by the end of 2020.

Expressions of concern

During the lockdown members of the public were asked to stay at home, with some working remotely, while others on furlough. This caused conflict between neighbours, which resulted in a large volume of people reporting their neighbours for breaches of the Covid regulations. These “Covid calls” were recorded in the category of antisocial behaviour (ASB). As such, we see an increase in ASB calls, but these represent Covid-related calls, rather than the “regular” ASB usually recorded pre-pandemic (Fig. 10). Similarly, calls from people reporting their neighbours smoking cannabis, or many cars coming and going frequently from the property, or other signs of drug dealing and drug use increased (Fig. 10). Interviews with call handlers suggested that the “regular” types of ASB calls were fewer in the pandemic, and this is also supported by looking at calls for criminal damage (Fig. 11) which is usually associated with ASB.

Presence of guardians, absence of suitable targets

Many of the changes in calls for crimes can be linked with the concept of the need for a motivated offender, a suitable target, and the absence of a capable guardian. For example, people staying home in lockdown acted as guardians of their residences. As a result, residential burglary calls decreased (Fig. 13). Other crimes, such as shoplifting (Fig. 14) and theft from motor vehicle (Fig. 15) dropped since the suitable targets had been eliminated – shops were shut, and people weren’t driving to town centres and shopping malls thereby not leaving their cars there unattended.

No observed change in domestic incidents

Finally, despite there being suggestions of domestic incidents increasing over the lockdown period, we saw no evidence of a sustained significant rise in calls related to domestic incidents (Fig. 16). Interviews did not reveal any calls where the caller may have tried to call but was interrupted by someone in the house, or where the caller mentioned that they had to get away from the person to call. What did emerge from interviews was that domestic incidents related to cases where the parties had been out drinking seemed fewer, and instead they recalled more cases where the incident was between parent and child, possibly associated with the child wanting to leave the home, thereby breaching Covid regulations. This is in line with other research findings (Condry et al., 2020).

CONCLUSION

Overall in 2020, Cheshire Constabulary received fewer calls for service than would be expected in the absence of the pandemic. As demand decreased, a higher proportion of calls were attended, and response time decreased. This was more marked for Grade 2 and Grade 3 category calls than Grade 1, which were already well attended and responded to. For Grade 2 and 3 category calls, the time officers spent on scene was reduced. This may be associated with the quiet roads seen during lockdown, which is shown in a drop in Highway Disruption, Road Related Traffic Offences and Traffic Collisions.

Calls which did increase were expressions of concern about breaches of the Covid-19 regulations; this is captured in “ASB” calls. Calls relating to Drugs is also a result of neighbours providing capable guardianship. Relating to crime calls, we see a drop in residential burglary, related to people staying home acting as capable guardians of their property, and a drop in shoplifting and theft from motor vehicles as a result of the removal of these targets. Finally, despite many concerns, calls data does not show any significant increase in calls about domestic incidents, however interviews reveal a shift towards more child to parent conflicts. We also cannot comment on whether unreported incidents may have increased.

IMPLICATIONS FOR FUTURE RESEARCH

During the research period, the Force Call Centre were affected by staff shortages due to staff needing to self-isolate after being pinged by the NHS test and trace application. Therefore, we had to extend the life of the project. In the end, we successfully conducted 8 interviews, and were able to complete the project aims with the extended deadline. However, only preliminary analysis of interviews informs this report. Further analysis will take place over the coming months. Due to the delays, we have some unanswered questions, which we will answer in the coming months. We will explore spatial patterns in calls, and link with external data sources (e.g.: index of multiple deprivation) to understand whether demand changed in terms of the geodemographics.

Future work could investigate how the reduction of time spent on scene, especially for grade 2 and grade 3 category calls, affected policing outcomes and satisfaction levels. Results would allow better understanding how much time spent on scene affects policing outcomes as well as trust and confidence, and have implications for improving efficiency.

Finally, the findings about domestic incidents should be triangulated with data from charity hotlines and other forms of reporting. We also need to interrogate how the origin of these calls may have changed, and understand any underreporting.

References

- Ashby, M. (2020). Initial evidence on the relationship between the coronavirus pandemic and crime in the United States. *Crime Science*, 9, 1-16.
- Ashby, M. (2020). Changes in police calls for service during the early months of the 2020 coronavirus pandemic. SocArxiv. Available: <https://osf.io/preprints/socarxiv/h4mcu/> Accessed: 22/07/2020
- Ashby, M. (2020). Why you can't identify changes in crime by comparing this month to last month. Social Research Association Blog. Available: <https://the-sra.org.uk/SRA/Blog/whyyoucantidentifychangesincrimebycomparingthismonthtolastmonth.aspx> Accessed: 22/07/2020
- Condry, R., Miles, C., Brunton-Douglas, T., & Oladapo, A. (2020). Experiences of child and adolescent to parent violence in the covid-19 pandemic. University of Oxford: Oxford, UK.
- Ratcliffe, J. (2017). Year-to-date comparisons and why we should stop doing them. Blog entry. Accessed: 01/12/2021 Available: <https://www.jratcliffe.net/post/year-to-date-comparisons-and-why-we-should-stop-doing-them>

APPENDIX: FIGURES 1-17

This project used seasonal autoregressive integrated moving average (SARIMA) models to make predictions from historic data on what would have happened in the absence of the pandemic while accounting for overall trends, seasonality, and noise.

The forecasting model was built using data from 01/01/2015 up until 31/01/2020. The model incorporated controls for public holidays and any system changes. The forecasts made provide a counterfactual against which to compare the actual observed data.

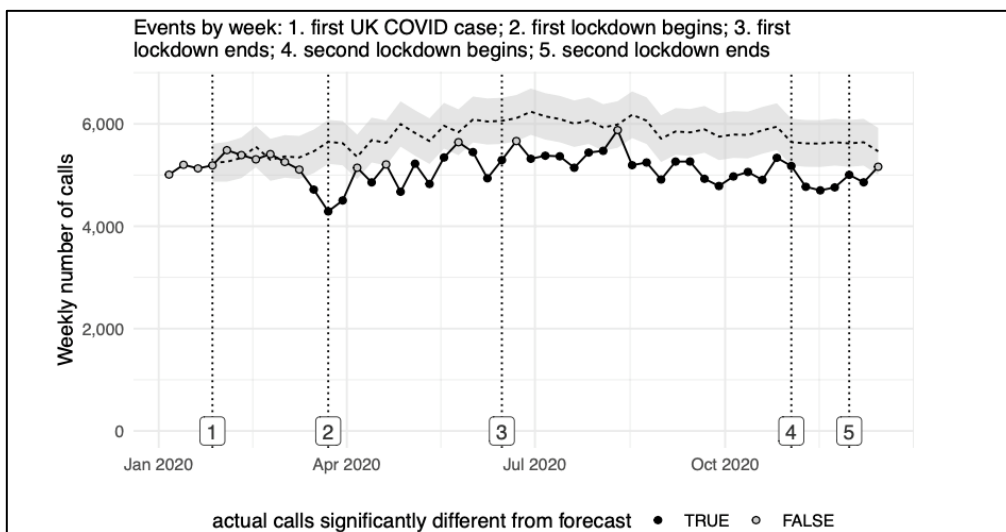


Figure 1: Total volume of calls vs forecast

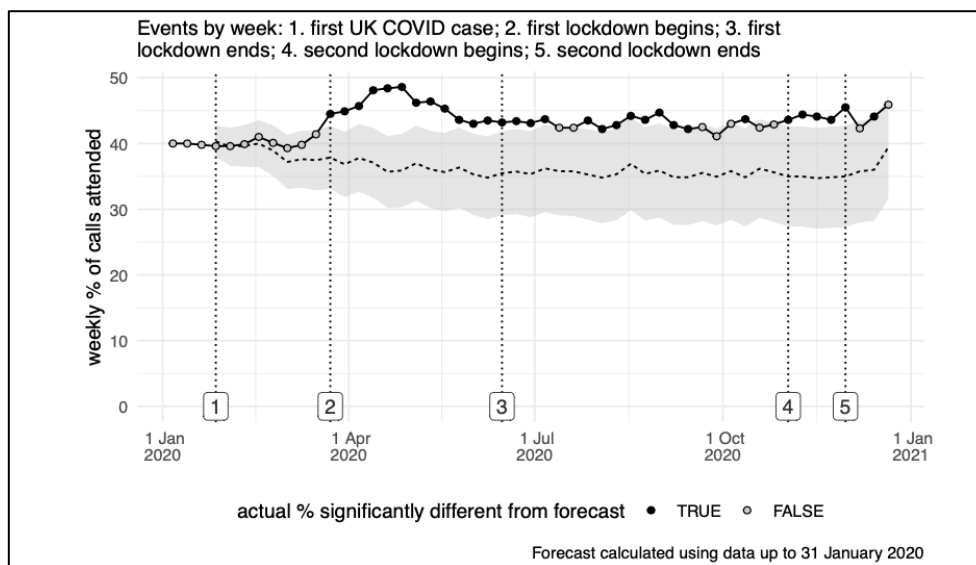


Figure 2: Attendance rate for all calls vs. forecast

APPENDIX: FIGURES 1-17.

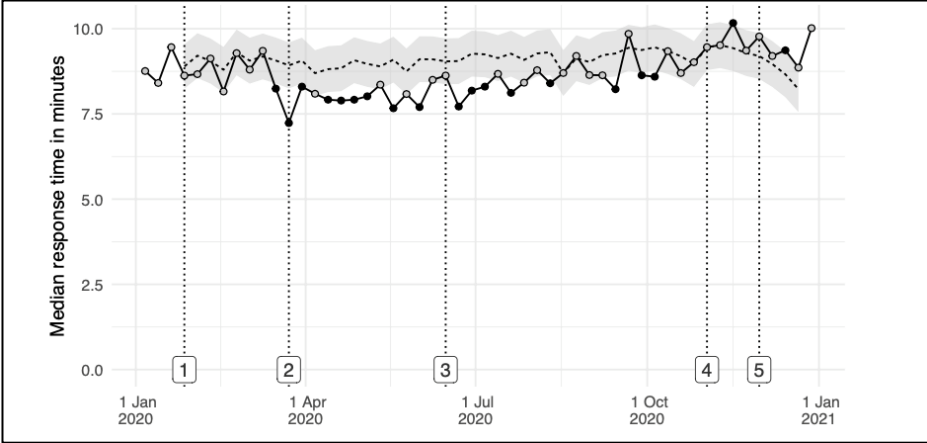


Figure 3: Response rate for all calls vs. forecast

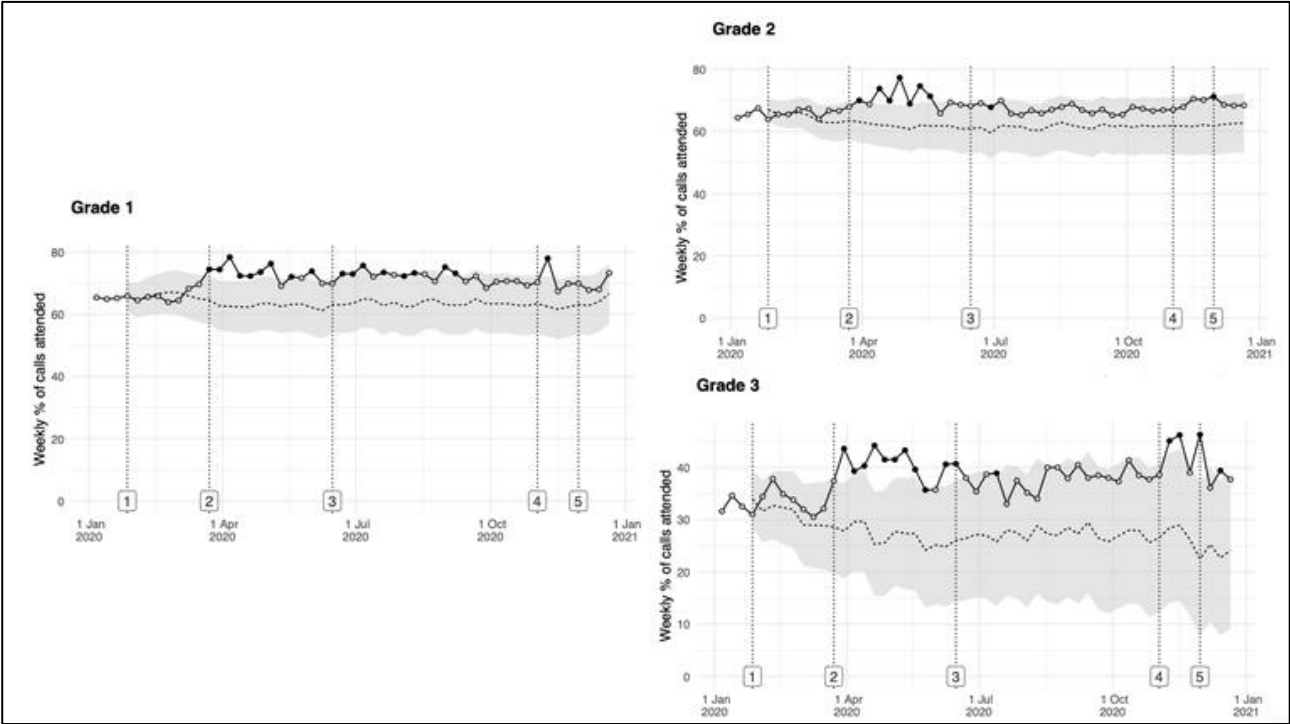


Figure 1: Attendance rate of calls broken down by grade

APPENDIX: FIGURES 1-17.

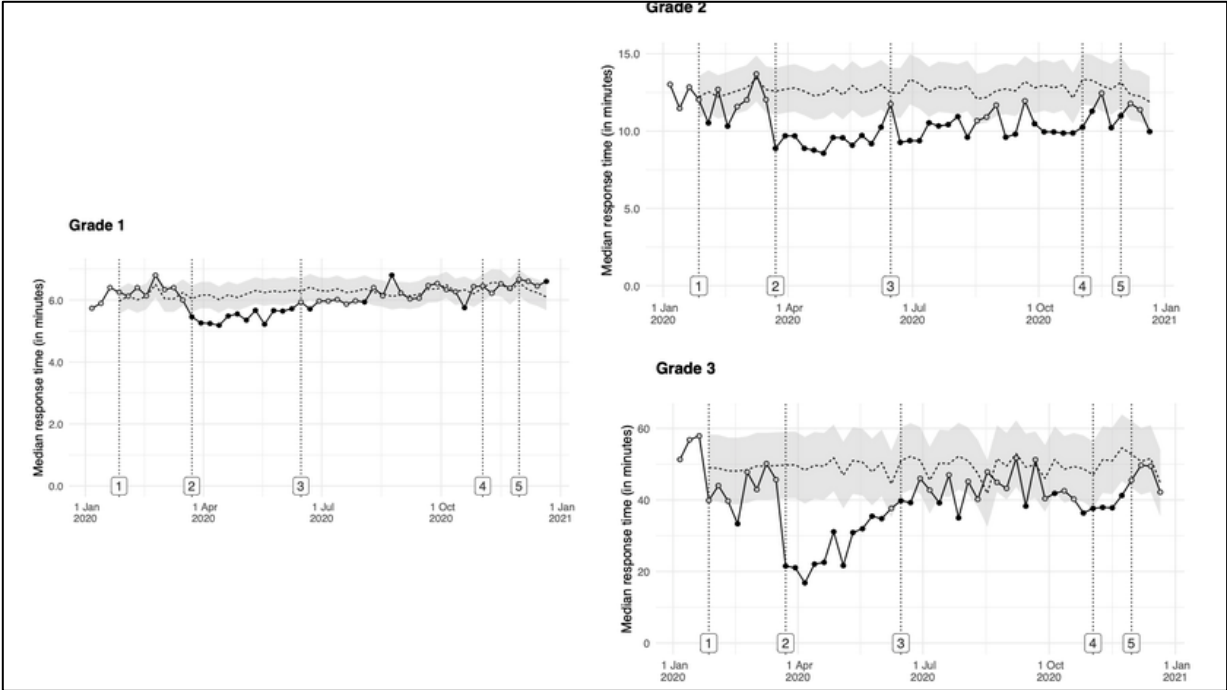


Figure 2: Response time broken down by grade

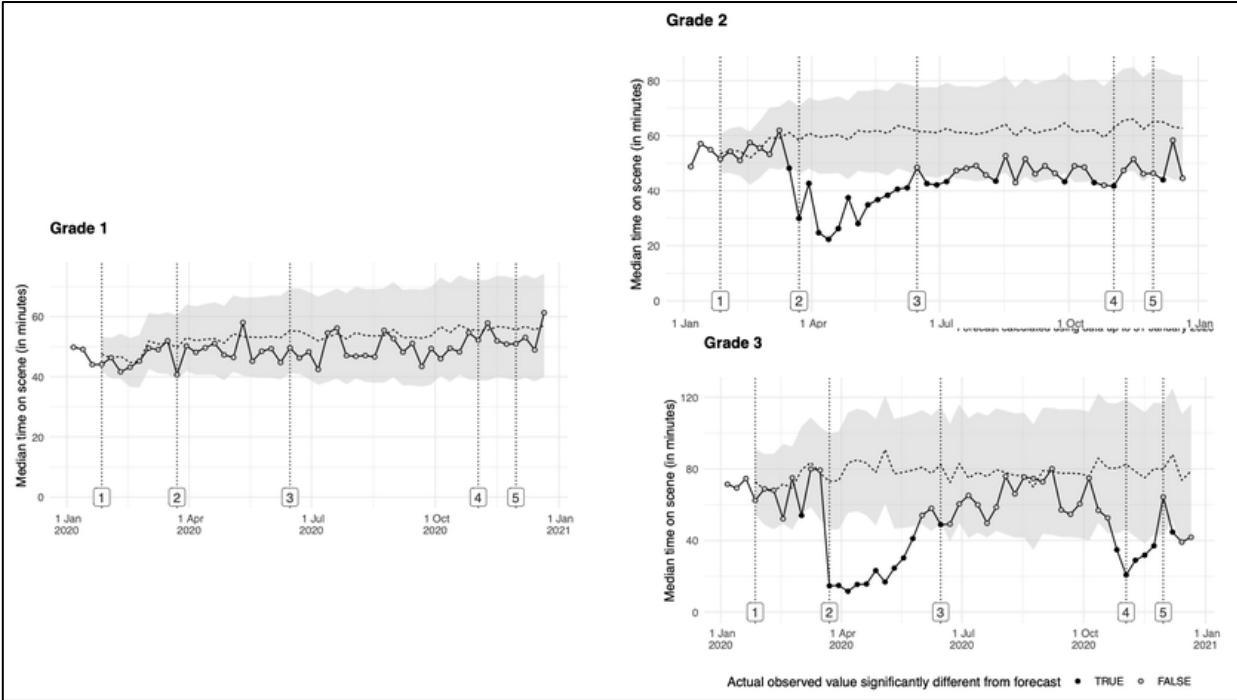


Figure 3: Time on scene broken down by grade

APPENDIX: FIGURES 1-17.

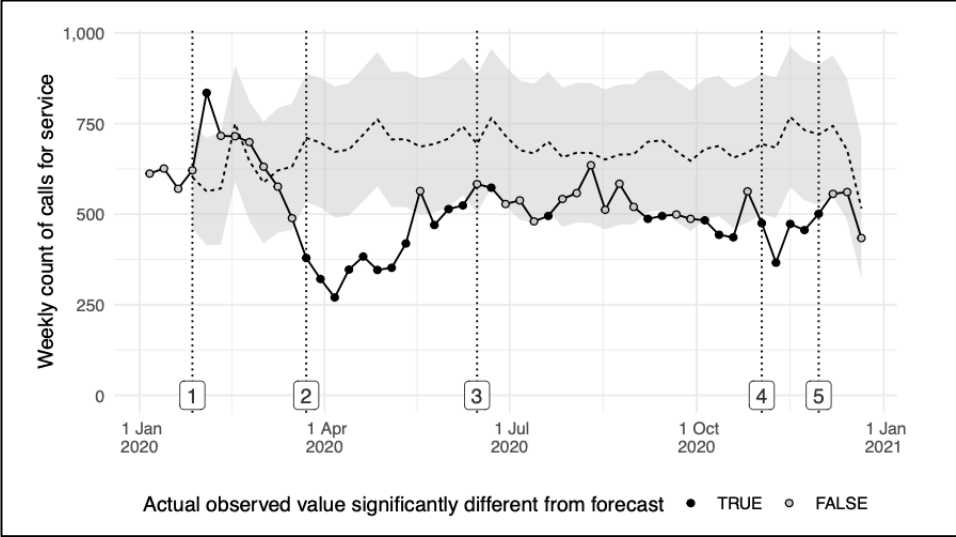


Figure 7: Highway disruption calls compared to forecast

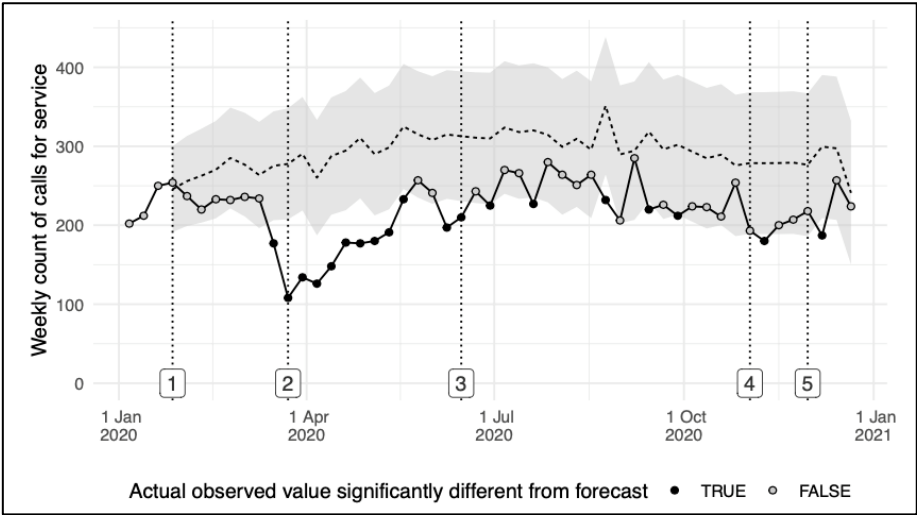


Figure 8: Road Related Traffic Offence calls compared to forecast

APPENDIX: FIGURES 1-17.

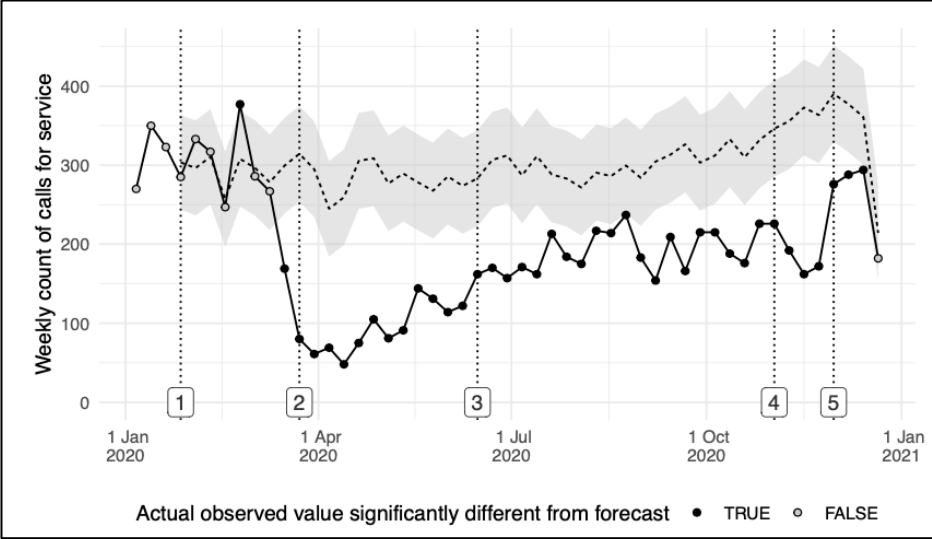


Figure 4: Traffic collision calls compared to forecast

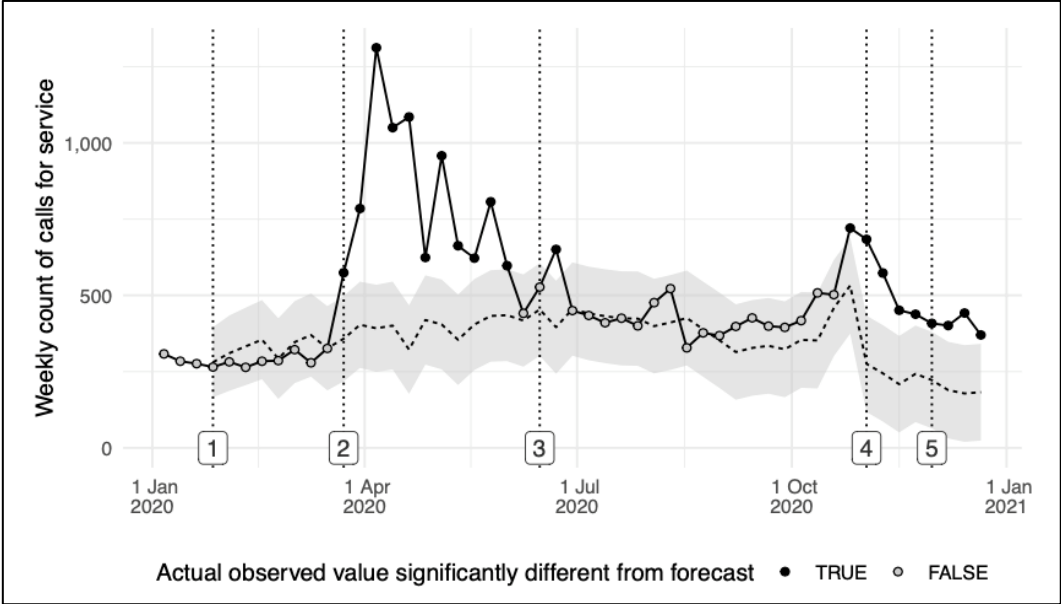


Figure 10: Antisocial behaviour calls compared to forecast

APPENDIX: FIGURES 1-17.

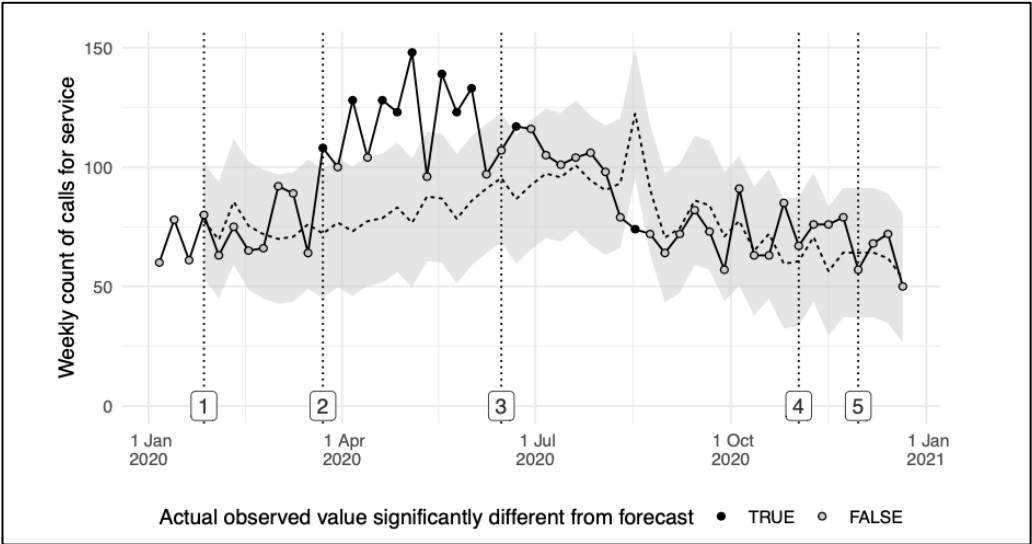


Figure 11: Drugs calls compared to forecast

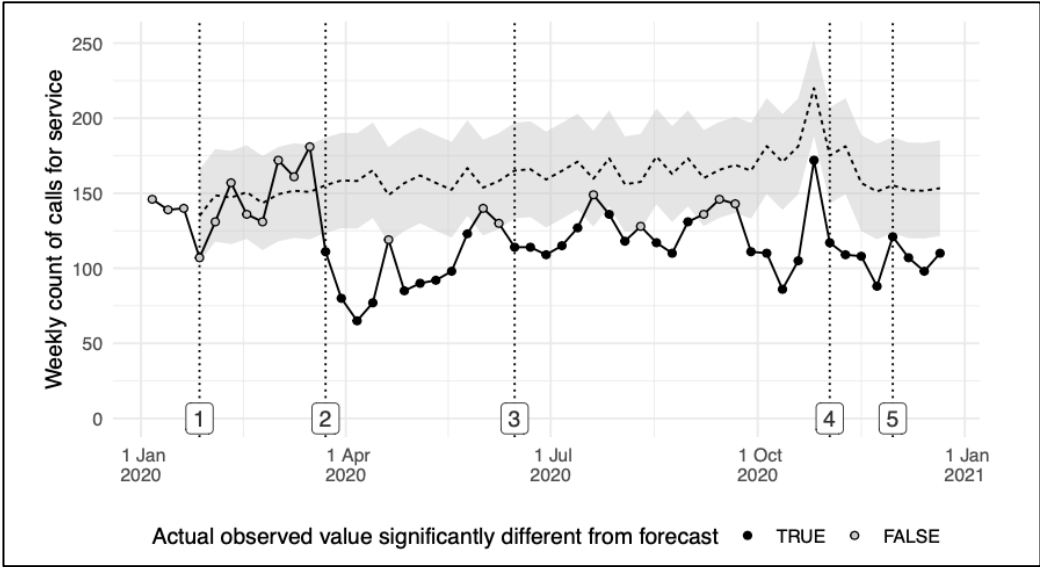


Figure 13: Criminal damage calls compared to forecast

APPENDIX: FIGURES 1-17.

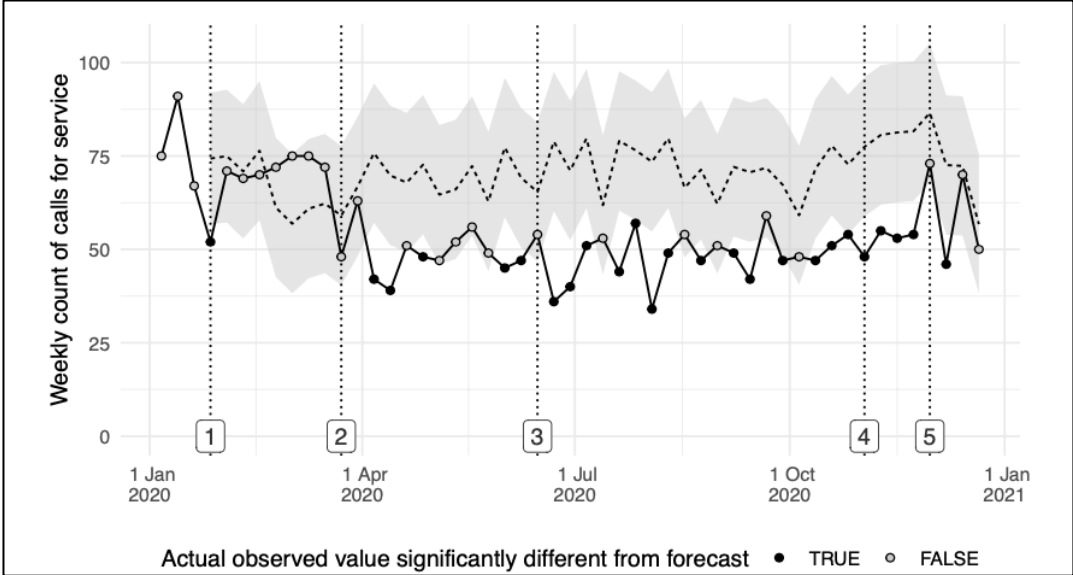


Figure 14: Residential burglary calls compared to forecast

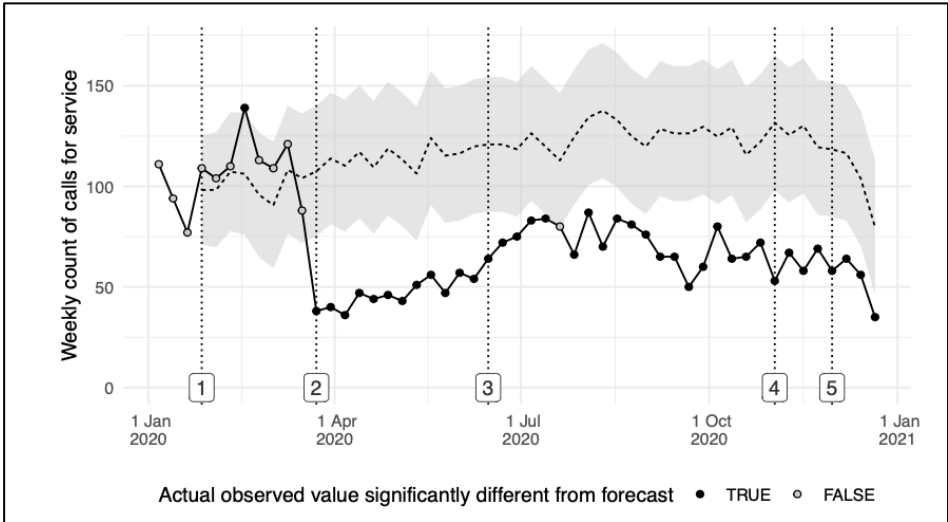


Figure 15: Shoplifting calls compared to forecast

APPENDIX: FIGURES 1-17.

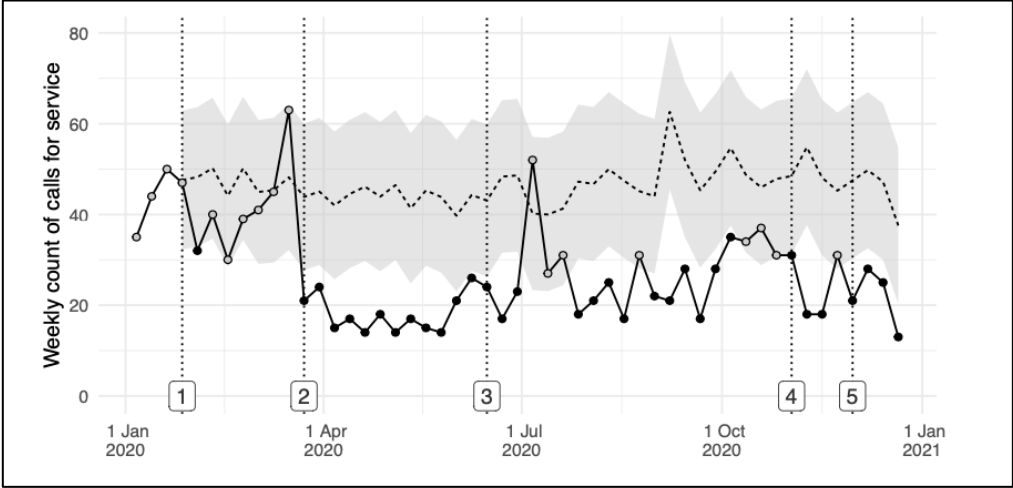


Figure 16: Theft from motor vehicle calls compared to forecast

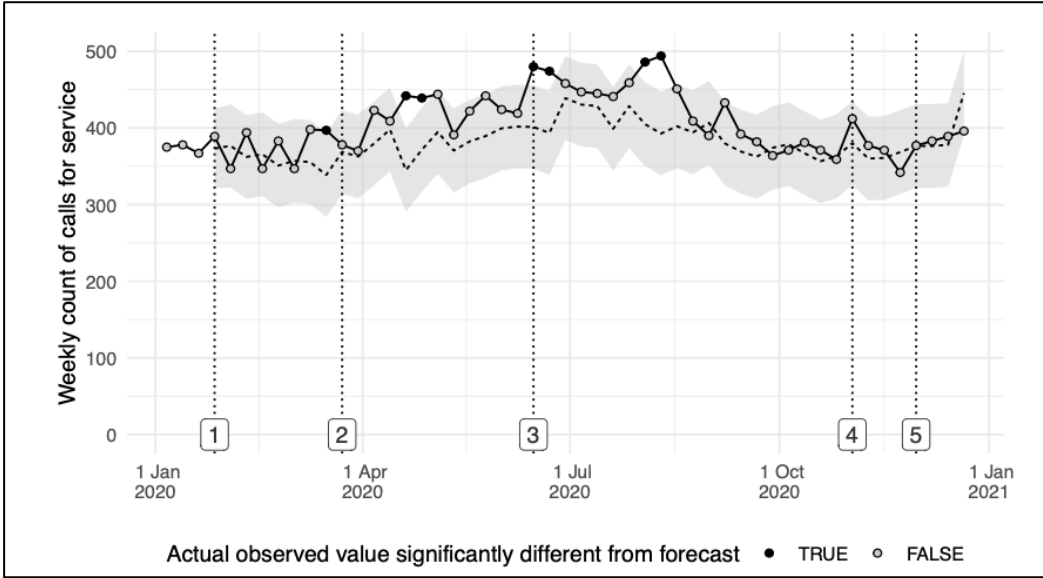


Figure 17: Domestic incident calls compared to forecast