Protocol for Efficacy Trials- Crim-PORT

The following protocol follows the format recommended by Crim-PORT 1.0: *Criminological Protocol for Operating Randomized Trials* (@ 2009 by Lawrence W. Sherman and Heather Strang). Crim-PORT has been used by the Cambridge Institute of Criminology Registries of Randomized Trials, which is in the process of being transferred to the American Society of Criminology's Division of Experimental Criminology. As of 12th November 2018, this protocol is dually registered at the Jerry Lee Centre of Experimental Criminology at the Institute of Criminology, University of Cambridge, and at the Departments of Psychology and of Anthropology at Aarhus University, Denmark.

1. Name of Experiment

R-TREC
Rapid
Telecommunication
Response
Emergency (or other)
Calls

2. Principal Investigators

Principal Investigator: Stacey Rothwell, Kent Police

1st Co-Principal Investigator: Kent McFadzien, Cambridge Centre for Evidence-Based Policing

2nd Co-Principal Investigator: Dr Heather Strang, Cambridge Centre for Evidence-Based Policing

3. General Hypothesis

Caller satisfaction would be increased and costs reduced by diverting intended visits to immediate phone service by a warranted police officer.

4. Specific Hypotheses

- H1: Relative to current service, R-TREC will increase customer satisfaction.

- H2: Relative to the current service, R-TREC will reduce the time taken and costs incurred to resolve an incident.

5. Organizational Framework

In House : delivery of treatments, data collection and analysis. Operating agency delivers treatments providing random assignment, data collection, analysis, training, tracking feedback and support.

- Name of Operating Agency: Kent Police.

6. Unit of Analysis

Situations : A STORM CAD – The record of the incident (crime/non-crime), created as a result of a caller calling 999/101 for police assistance.

7. Eligibility Criteria

A. Criteria for Inclusion

- An incident graded as High by call takers.
- An incident determined as one of the following call types:- Accosting, animal incident, assault in progress, assault not recent, bad driving, bail incident, bilking, concern for welfare, concern other, criminal damage in progress, criminal damage not recent, dispute, disturbance, dog – dangerous or banned, dog worrying livestock, nuisance other, nuisance telecommunications, nuisance vehicle, nuisance youths, serious incidents at school, operation, other area or agency request, poaching/lamping, prostitution, prowler, robbery in progress, robbery not recent, sexual offence, shoplifter made off, shoplifter not recent, suspicious event, drugs, fight, fire, firearm, fraud in progress, fraud not recent, harassment/stalking, indecent exposure, information, kidnap/product contamination, knife/lethal weapon, theft in progress, theft not recent, threats, vehicle crime not recent, vehicle theft in progress/recent, vehicle theft not recent.
- The caller opts in to the R-TREC service.

B. Criteria for Exclusion

- Incidents graded as Immediate/Diary/Task/RWD (resolved without deployment).
- Domestic Abuse incidents.
- An incident determined as one of the following call types – 999 abandoned, 999 misrouted, 999 telematic, abandoned vehicle, absconder from custody/prison/hospital, aircraft incident, alarm, alarm premises, alarm vehicle, animal straying, ANPR, begging, bomb threat, broken down vehicle, burglary distraction, burglary in progress, burglary not recent, chemical/Hazchem/radiation, complaint/dissatisfaction, compliment, concern no contact, court warning, custody intimation, radiation at ports, death – sudden/suspicious, debris in carriageway, domestic abuse in progress, missing person, most wanted, noise, not listed elsewhere, nuclear emergency, obstruction, payphone incidents, out of Kent prisoner handling, pedestrian on motorway, prevent breach of the peace, property found, property lost, railway incident, rape, recall to prison, road traffic crash – injury, road traffic crash - non-injury, road traffic crash –

fail to stop, s34 anti-social behaviour authority, search request s18 PACE, shoplifter compliant, shoplifter violent, suicide risk, suspect package, tecsos risk (999 mobile phone), drink or drug driving, flood warning, flytipping/litter, found stolen vehicle, industrial accident, tracker/tracking, traffic hazard, traffic offence, UXB/wartime munitions, vagrancy, vehicle failing to stop, water/marine incident, young person's whereabouts, officer emergency.

- Incidents which require *immediate* attendance in order to protect life, limb and property, prevent crime or pursue offenders.

8. Pipeline: Recruitment or Extraction of Cases

A. **Where will cases come from?** Potentially eligible cases will come from the following source: Live telephone calls only, from the Force Control Room (FCR) operational floor.

B. **Who will obtain them?** The FCR call takers will be responsible for identifying the eligible cases.

C. **How will they be identified?** The call taker will transfer the call to the R-TREC FCR research team.

D. **How will each case be screened for eligibility?** Once a case has been identified as eligible by the calltaker, it will be transferred through to the FCR research team who will check it for eligibility and consent from the caller will be obtained.

E. **Who will register the case identifiers prior to random assignment?** The FCR research team.

F. **What social relationships must be maintained to keep cases coming?** It is essential that positive and close relations among call takers and the FCR research team and R-TREC officers be maintained. The goal is to build a team that takes shared pride in sustaining the case flow needed to provide an adequate sample size for the experiment.

9. Has a Phase I (no-control, "dry-run") Test of the Pipeline and Treatment Process Been Conducted?

Yes, two dry runs took place (14th February for three hours and 26th February for an 8 hour shift) :

- 14th February – three calls were taken. The results were positive. Technological issues were discovered as well as unpredictability of case flow. The calls were taken initially for the first hour from East division then from the entire county, in order to increase case flow.
- 26th February – 5 calls were received during a 9 hour shift. Case flow continued to remain unpredictable. Call takers were subjectively selecting calls for R-TREC – this needed to be resolved.

10. Timing

Cases come into the experiment by a trickle-flow process, one case at a time.

11. Random Assignment

A.   How is random assignment sequence to be generated? Each random assignment of a case to an R-TREC officer will be generated by the Cambridge Randomiser utilising the website and online randomisation tool – therandomiser.co.uk:

- The assignment will be generated by a random numbers case-treatment generator program in the secure, password-protected system at Cambridge University on a 50% allocation to each treatment and control groups.

B.   Who is entitled to issue random assignments of treatments? The FCR research team and Co-Principal Investigators only.

C.   How will random assignments be recorded in relation to case registration? The Randomiser system will instantaneously record the assigned treatment as soon as it is generated, to be entered by the FCR research team.

12. Treatment and Comparison Elements

A. Experimental or Primary Treatment (R-TREC officer)

1. What elements must happen?

Element A: Each R-TREC assigned case should be immediately transferred through to an R-TREC officer.

Element B: Each R-TREC officer should attempt to resolve the call for service as if they had been in attendance. The R-TREC officer is able to decide what lines of enquiry, safeguarding etc they undertake. Should the R-TREC officer decide that attendance is required, for whatever reason, they are able to liaise with the FCR research team and get the case listed on the "high" dispatch list as per business as usual procedure. This shall be recorded on the R-TREC officer sheet.

Element C: If it is known that a second CAD arises out of the same incident it must be treated as per the first randomisation.

Other Elements: The R-TREC officer will record on the record sheet:

- The length of time taken to resolve the call
- The lines of enquiry undertaken

- Feedback
- Whether attendance is still required

2. What elements must *not* happen?

Element A: The R-TREC officer should:

- not delay, pend or postpone the resolution of the appointment.
- The call must be transferred immediately and their must not be a break in the call, unless it is due to technological reasons.

B. Control Treatment

1. What elements must happen?

Element A: The incident must be listed on the High list as business as usual. The incident must be dealt with/attended as per usual working practices.

- **Element B** : If it is known that a second CAD arises out of the same incident it must be treated as per the first randomisation.

Other elements:

- The Research team will analyse attendance times utilising telematics tracking (vehicle) and/or Airwaves tracking (radio) data, and the data recorded on the "Storm" cad. Should all the data be absent then officer recall would be used.

2. What elements must not happen?

N/A

13. Measuring and Managing Treatments

A. Measuring

1. **How will treatments be measured?** Treatment – RTREC Officer record sheets. Control – Telematics and Airwave databases and CAD logs.

2. **Who will measure them?** Principal researcher.

3. **How will data be collected?** Interrogating appropriate record.

4. **How will data be stored?** On the secure server within Kent police's Innovation Task Force.

5. **Will data be audited?** Only if required.

6. **If audited, who will do it?** Co-Principal Investigators.

7. **How will data collection reliability be estimated?** The three records will be compared.

8. **Will data collection vary by treatment type**? Yes.

B. Managing

1. **Who will see the treatment measurement data**? The principal and Co-principal investigators.

2. **How often will treatment measures be circulated to co-principal investigators working at Cambridge University?** Regularly – ideally monthly.

3. **If treatment integrity is challenged, whose responsibility is correction?** Co-principal investigators will meet to determine whether any issue is serious enough to take to the project governance board, or can be handled in less formal ways.

14. Measuring and Monitoring Outcomes

A. Measuring

1. **How will outcomes be measured?**
   - H1: Customer satisfaction survey
   - H2: Telematics (vehicle), Airwaves (Radio) data and Storm Cad data (possibly complimented by officer recall data).

2. **Who will gather the data for these measures?** Principal investigator.

3. **How will data be collected?** The customer satisfaction survey will be administered over the telephone and recorded on an excel spreadsheet. The data will be collected form various internal police systems and stored on a master excel sheet.

4. **How will data be stored?** On a secure police server in Kent Police.

5. **Will data be audited?** If anomalies appear.

6. **If audited, who will do it?** A Co-Principal Investigator may dip sample a number of cases if anomalies appear.

7. **How will data collection reliability be estimated?** Records of the data will be kept and can be interrogated against the data systems at any time.

8. **Will data collection vary by treatment type?** Not for H1 – the customer satisfaction survey will be administered across the treatment and control group. For H2 – the Telematics and Airwaves data will only be required for the control group. However the Storm data will be used for both control and treatment group.

B. **Monitoring**

1. **How often will outcome data be monitored?** For H1 and H2, the ambition will be to capture the customer satisfaction data within two weeks of the survey. For H2, the monitoring of the data will occur at least a fortnight post incident to ensure that the call has been dealt with.

2. **Who will see the outcome monitoring data?** The Principal investigator and Co-Principal Investigator.

3. **When will outcome measures be circulated to key leaders?** Initially weekly, thereafter at incremental stages throughout the trial.

4. **If the experiment finds early significant differences in H1 or H2, what procedure is to be followed?** Any significant difference in key outcomes will be presented to the Chief officers as soon as practicable, however A large enough sample size will need to be obtained due to the variety and complexity of incidents.

15. Analysis Plan

A. **Which measures are primary for each of the three hypotheses?**

1. **Which output measure is considered to be the primary indicator of a difference between the delivery of treatments in the experimental and comparison group (H1)?** A question regarding how satisfied the victim was with the service.

2. **Which outcome measure is considered to be the primary indicator of impact of a difference between the delivery of treatments in the experimental and comparison group (H2)?** A reduction in officer time.

B. **What is the minimum sample size to be used to analyze outcomes?** Fifty cases per group.

C. **Will all analyses employ an intention-to-treat framework?** Yes.

D. **What is the threshold below which the percent Treatment-as-Delivered would be so low as to bar any analysis of outcomes?** 60% of RJCs with "full" delivery as defined above.

E. **Who will do the data analysis?** Principal investigator.

F. What statistic will be used to estimate effect size? Cohen's D

G. What statistic will be used to calculate P values? T tests

What is the magnitude of effect needed for a P = .05.