



The value of data analysis in policing serious crime

Chris McGlade – Detective Inspector, Public Protection Investigation Unit

Rosanna Walker – Constable

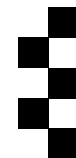
Liviu Andrei Toderas – Research Analyst

Catalyst Conference 26 June 2019 #UoECatalystConf

Catalyst is funded by:



University of Essex Catalyst project working in partnership with:



University of Essex



Data Processing Contracts

The GDPR makes written contracts between controllers and processors a requirement, rather than just a way of demonstrating compliance with the seventh data protection principle (appropriate security measures) under the Data Protection Act 1998.

Controller – Essex Police. Processor – Catalyst Project.

Ensure both understand their obligations, responsibilities and liabilities.



Data Processing Contracts – Rules to Follow

- What do we want to achieve?
- What can we physically do?
- What are we permitted to do/lawfully can do?
- What are we actually going to do?

- Clear communication – early planning
- Ownership
- Iterative Process – first version is NOT the final version



Data processing Contract - Support

- Templates – which can be adapted for a specific project
- Experts – Practitioners, Analysts and Information Managers
- Authorisations – Role Holders already aware of the project



Data Processing Contracts - Content

Things to consider

- The subject matter;
- Duration, nature and purpose of the processing;
- The type of personal data and categories of data subject; and
- The controller's obligations and rights.

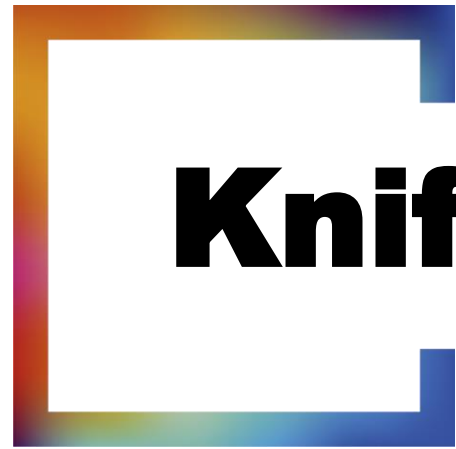
Contracts must also include specific terms or clauses regarding:

- Processing only on the controller's documented instructions;
- The duty of confidence;
- Appropriate security measures;
- Using sub-processors;
- Data subjects' rights;
- Assisting the controller;
- End-of-contract provisions;
- Audits and inspections.
- Publishing



Analysis Overview

- Knife Crime/Serious Sexual Offences
- Data
- What have we found?
- Including additional datasets
- Outcomes
 - Report
 - Platform
- Further Steps



Knife Crime

Overview

The logo for 'Data' features the word 'Data' in a bold, black, sans-serif font. It is enclosed within a square frame that has a multi-colored gradient border, transitioning from orange at the top-left to blue at the bottom-right.

Data

- Two datasets available (victims, victim and suspects)
- Location, time of offence, type of offence and descriptive of victims and suspects
- Provided graphs and descriptive statistics to get a better understanding of knife crime in Colchester
- Predictive analysis

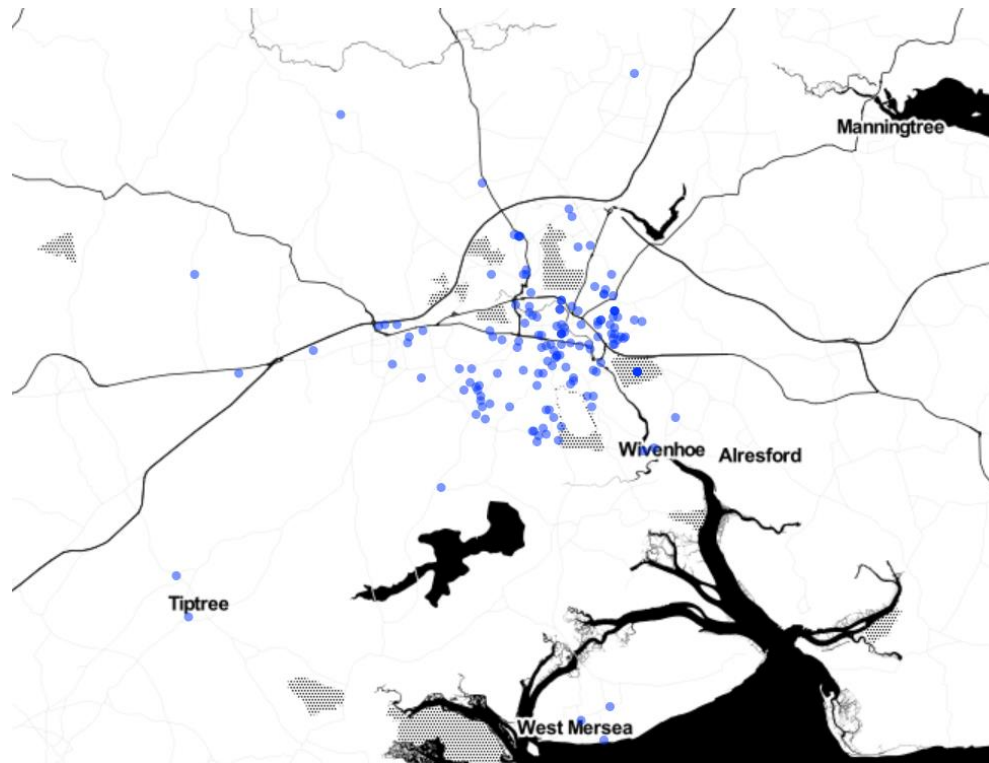


What have we found?

- Predictive model – Using spatial statistical analysis
- We tested the method works on the data provided
- With more data we are confident that the predictability would get better and can become useful
- Paper in draft

Predictive maps

Real knife crime



Predicted knife crime





Serious sexual offences

Overview



- Data available from the police systems between 2015 – 2019
- Location data available, time and date, crime description, description of victim and suspect (age, ethnicity, gender)
- We have created new variables based on the existing data
 - Get a better understanding of victimisation, re-victimisation and prevalence of crimes based on age, gender, time of reporting etc.
- Informed Essex Police on additional data needed to get better results



Additional datasets

- In order to get a better picture of potential factors that can inform us on serious sexual offences and knife crime we added extra data from the ONS:
 - Indices of multiple deprivation (e.g. income, education) (LSOA level)
 - Median age (LSOA level)
 - Population density (LSOA level)
- Presented in maps alongside data received from Essex Police




What have we found?

- We provide numbers to back up experience in the field
- We give a better understanding of populations that are at risk of victimisation and of becoming perpetrators
- Check and challenge existing ideas by looking at gender, age and ethnicity
- Inform on re-victimisation and lack of reporting in the data
- Can inform on areas that are more at risk in order to aid intervention deployment



Outcomes

- We have created reports that summarise and visualise the data provided by the Police
- We have closely worked with the Police to identify patterns trends and hotspots
- We created a platform that can be used in the future with new data in order to have a easy access to statistics




Platform



Further Steps

- We will analyse further data
- Working closely with Essex Police to improve the platform
- Give training to analysts at Essex Police in order for them to be able to use the platform after the Catalyst Project ends
- Try a new experimental method of predicting certain crimes using spatial and temporal data available
- Incorporate the model in the platform if it works
- Publish papers based on the work



Benefits – Policing

- Fact based decision making – not reliant upon anecdotal interpretation
- Expediency of research, problem identification and drill down to detail – continue to be able to add data
- Targeted resourcing/Opportunity to expand to other policing areas
- Ability to overlay multiple data sets to improve understanding of actual picture – Why!
- Support multi-agency working
- Training provision
- Positive publicity



Outcomes

Increased victim satisfaction

Improved public confidence/trust

Decrease in reporting due to less offending taking place

Increase in detection

Encourage innovation in evidence based policing



Questions



Evaluation

Empowering public services to evaluate the impact of their work

Risk Stratification

Using predictive analytics to anticipate those at risk and to better target resources

Essex Volunteering Hub

Providing benefits to local community and students through volunteering

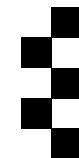
Contact us:

E catalyst@essex.ac.uk

T +44 (0)1206 872057

essex.ac.uk/research-projects/catalyst

 @HEFCE_Catalyst #UoECatalystConf



University of Essex