

# Tracking the Characteristics of Lethal & Potentially Lethal Intimate Partner Violence

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# A Bit About Me & the Origins of the Study

I am a Senior Investigating Officer (SIO) and up until recently lead one of the two Major Incident Rooms as part of the Force's Major Crime Department (MCD).

Amongst other major incidents the department manages the investigation of homicides. My primary function is to lead such investigations.

In the vast majority of intimate partner homicides (IPHs) that I was involved in there had either been minimal or no historic police contact prior to the killing. In policing terms this means the report of a domestic abuse incident and the completion of the Domestic Abuse Stalking & Harassment (DASH) risk assessment.

I attended many Domestic Homicide Reviews (DHRs). Without exception they always pointed retrospectively to partner-agency information that wasn't shared, which may have been a potential trigger to intervention and possibly prevention.

# The 'Case' that started it

Following one such murder and subsequent DHR where a 14 year old girl had lost both her parents; her mother murdered and her father sent to prison for life, it transpired there had been many potential pre-cursor signals; amongst them,

- A child protection referral had been made by the school following the discovery that the child had been self harming.
- The victim had been suffering from depression and had discussed the cause (her marriage/coercive and controlling behaviour) with her GP and had been referred for counselling.
- The offender had been to A&E on a number of occasions with reported respiratory problems, which were deemed to be symptomatic with anxiety/mental health issues. He was discharged on each occasion without any further treatment.
- There had been two 'low level' domestic abuse incidents attended by the police. The Domestic Abuse Stalking & Harassment (DASH) risk assessment was assessed as 'standard' (low risk) on both occasions.
- On a third occasion he was arrested and placed before the court for a remand application. The court released him. The following day he murdered the victim.

Very few  
previous  
Police/Health  
collaborative  
studies. (None  
exclusively  
Domestic  
Abuse)

1. Shepherd et.al. (1987)- the first cross-tracking of violent crime counts in the UK, found that only 11 % of victims recorded by the police attended hospital and only 23% of victims assaulted within the boundaries of the Police division and who had attended the hospital were recorded by the police.
2. Sutherland et. al. (2002)- a 6mth study comprising of 1513 cases: 65.6% of offences were recorded exclusively by the Accident and Emergency, (A&E) department and 23.6% were recorded exclusively by police, with only 10.8% recorded by both emergency departments and police. Police data revealed less than a third of the offences, therefore any analysis of the problem would and could not identify the full picture.
3. In Denmark, Færgemann et. al. (2006) identified that 74% of men and 69% of women victims of deliberate interpersonal violence attending A&E departments had not reported to police. The other notable finding was albeit Police recorded a steady increase in the frequency of deliberate interpersonal violence during the study period, this was not the case regarding the frequency of A&E attendance. This identifying a consistent pattern of interpersonal violence as far as the health authority was concerned but a changing pattern from police data, perhaps leading to a false analysis of the data in real terms from a policing perspective.

Understanding that single agency data (police) whilst useful is a limited contributor to an explanation of the pattern of serious and lethal IPV.....



## How Hard Could it be?

There must be data in Health that may identify pre-cursor signals not known to police due to underreporting prior to a lethal or near lethal domestic abuse event. I naively considered;

‘How hard can it be to look at and share data with our partners, pre-event rather than post event at a DHR? Surely we are collectively shutting the stable door after the horse has bolted? If we could identify collective pre-cursor ‘signals’ and knew about it we may be able to save lives and reduce harm’

Well, the answer transpired to be;

‘very hard indeed!’

# Dipping my size 9's in the world of academia

A review of the literature in broad terms identified

- Conflicting academic opinion regarding, escalation, repetition, relationship context, and roles within the relationship culminating in DA.
- The systematic study of 'whole family' characteristics, across agencies, where lethal and near lethal IPV occurs, appeared absent.
- The evidence base behind DASH is essentially fragile. Its weakest point is the absence of a large control sample.
- Without a control sample, the scale of false positive risk assessment errors cannot be calculated.
- The DASH assessment uses a single grade on a linear scale to describe multi-faceted threats.
- DASH's evidence base consists exclusively of case studies involving abuse of a female intimate partner victim by a male offender.
- Thornton in Thames Valley, (2011) and Chalkey in Dorset, (2015) respectively, found false negative prediction rates of 80% and 67%, meaning that a DASH 'high risk' prediction had not been made in the majority of serious or fatal, (Acute) IPV cases. Conversely, both found false positive rates of over 99%, (a 'high risk' assessment made and either a low risk or no further offences occur).
- Scholars are consistent in their view regarding the importance of health data analysis in determining potential preliminary risk factors to IPV.

# A Case/Control Study

With help from colleagues at Cambridge University I embarked on a two year journey.

To cut a very long story short, despite unwavering support from some colleagues within Public Health and the NHS, the retrospective data from health was not forthcoming, due mainly to differing interpretations of GDPR/DPA 2018, across the trusts from IG leads (some agreed/some didn't).

So initially, I was forced to utilise police data in isolation.

Six years worth of data (1/01/2012- 31/12/2017) comprising of 70 families identified as having suffered lethal/near lethal abuse and a randomly selected control group (n=140) who had suffered lesser domestic abuse. In total 656 individuals derived from three 'Family Unit' types; 'Nuclear Family', 'Childless Family' & 'Other Family'

I continued to pester NHS into releasing, at the very least, A&E data for the study period on a 'one off' data sharing agreement, under the Kent & Medway Information Partnership (KMIP) and completed Data Protection Impact Assessment (DPIA)



# Police Study- Research Questions

- Does exploratory analysis of Police data, in terms of the family as a unit of analysis, identify characteristics within families affected by lethal/near lethal IPV that are more prevalent than in families affected by less harmful domestic abuse?
- How does Police family unit data compare to characteristics identified by current focus on offender/victim through DASH?

# Included Police Variables

Variables in terms of Police data were selected based upon IPV theory and previous longitudinal studies spanning sociodemographic, previous criminal history, ethnicity, psychological characteristics, developmental and relationship characteristics.

The variables were family and family member focused as opposed to exclusively victim/offender. Additionally, variables defining family structure and type were included

Sociodemographic Variables	
Index of Multiple Deprivation, (IMD)	% more than in other Lower Super Output Area, (LSOA)
IMD Deprivation	% less than in other LSOA
Victim Variables	
Victim	Age at date of offence
Victim	Gender
Victim	In paid employment
Victim	Not in paid employment
Offender Variables	
Offender	Age at date of offence
Offender	Gender
Offender	In paid employment
Offender	Not in paid employment
Victim/Offender Variables	
Victim/Offender	Intimate partners
Victim/Offender	Age gap
Victim/Offender	Number of children
Children Variables	
Children	Age of oldest child at time of offence
Children	Age of youngest child at time of offence
Children	Mean age of children at time of offence
Children	Number of male children
Children	Number of female children
Children	Mixed sex children
Family Variables	
Family	Biological Father
Family	Biological Mother
Family	Not Biological Father
Family	Not Biological Mother
Family	Family mean age
Family	Prior DASH report
Family	Prior DASH score
Family	Type – Nuclear Family, (NF)
Family	Type – Childless Family, (CF)
Family	Type – Other Family, (OF)
Family	Number in household, (HH)
Family	Number in HH & elsewhere
Family	Living elsewhere
Family	Unknown where living
Family	Number white North European, (NE)
Family	Number other than white NE
Family	Number mixed ethnicity
Pre-event Offending Variables	
Victim	Any violence
Victim	Other Crime
Offender	Any Violence
Offender	Other crime
Victim/Offender	Domestic abuse between
Family	Cumulative violence
Family	Domestic abuse related
Physiological Variables	
Family	Suicide/suicidal markers
Family	Mental health markers
Referral Variables	
Family	Adult protection
Family	Child protection

# Insights from the Police Data

- Female victims represented 84% of victims in lethal/near lethal, (Acute) cases
- 76 % of offences in the Acute cases were committed in areas where deprivation, (IMD) was higher than other areas in England & Wales, (LSOA)
- 57% of the Acute case families had not had any previous risk assessment (RA) regarding DA- a reliance on DASH RA to focus on prior contact missed over half of the Acute cases.
- In 4% of contact cases, a DASH RA was not completed/missing.
- **87%** of murders were missed due to no prior police contact & therefore no DASH RA
- Where DASH RA was completed only 33% of the acute cases were previously determined as 'High Risk' – A 67% false negative rate
- Conversely across the 'whole' population where DASH RA was completed at 'High Risk' (n=13,178), only 10 of those assessed as such resulted in an acute case – a 99.92% false positive rate
- The above reflecting previous studies in three other policing areas

<b>Force</b>	<b>Study Date</b>	<b>No prior RA rate</b>	<b>False Negative Rate</b>
<b>Kent</b>	<b>2018</b>	<b>57%</b>	<b>67%</b>
<b>Dorset</b>	<b>2015</b>	<b>37%</b>	<b>67%</b>
<b>TVP</b>	<b>2011</b>	<b>55%</b>	<b>80%</b>
<b>Hampshire</b>	<b>2011</b>	<b>48%</b>	<b>80%</b>

# Potential Predictive Characteristics through the 'Family Lens' Case/Control comparison

Significant Results: t-tests

Variable	Case Group Mean	Case Group Standard Deviation (SD)	Control Group Mean	Control Group SD	P Value	Cohen's d Effect Size
Other Crime Victim (non-violent)	0.64	1.143	0.24	1.240	<0.025	0.3
Previous Violence Offender	0.74	1.059	0.27	0.687	<0.001	0.5
Prior Incidence of DA-Victim/Offender	0.19	0.392	0.05	0.277	<0.004	0.4
Biological Father	0.71	0.998	1.09	1.054	<0.027	-0.3
Cumulative Family Violence	0.63	1.066	0.05	0.277	<0.001	0.5

Significant Results: chi square tests

Variable	Case Group No. (%)	Control Group No. (%)	P Value	Odds Ratio (OR)
Childless Families	25 (35.7)	14 (10)	<0.001	4.8
Other Families	7 (10)	52 (37.1)	<0.001	0.19
Suicide/Suicidal ideation	11 (15.7)	6 (4.3)	<0.004	4.16
Mental Health	14 (20)	8 (5.7)	<0.001	5.5
Child Protection	20 (28.6)	6 (4.3)	<0.001	8.93

# So What?

- Findings centered on single agency data will continue to frustrate the identification of a more complete assessment of the IPV/DA paradigm in Kent.
- The external validity of these results cannot be ignored as they span diverse and separate social, economic, demographic and geographic areas. The importance of Health data as a key contributor to such forecasting technology cannot be understated when considered against the prevalence of underreporting to Police. This study - 57% of families no prior DA report/RA before a lethal or near lethal offence of IPV. Nationally the ONS (2017) report that only 1:5 IPV offences are reported to Police.
- Can police and partner agencies continue to jointly participate with ever increasing referrals of 'high risk' cases in what appears from a growing evidence base to be a flawed practice? Perhaps a taxonomy of classification across different categories with tailored preventative strategies dependent upon the abuse type requires serious consideration.
- Police can only gauge levels of frequency and escalation based upon what is reported to them, perhaps only 20% of IPV offences, (ONS, 2017).
- 83% of DHR reviews included in this research identified a background of mental health, suicidal ideation, previous offender violence and adult or child protection referrals, often not shared between agencies or known to police before the fatal event.

# The Joys of GDPR/DPA 2018

On behalf of Kent Police the advance to National Health Information Governance (IG) leads across the four Acute Health Trusts concerned was that,

- Kent Police have adequate powers to sponsor the research under the 'law enforcement' purpose of prevention in accordance with section 31 DPA (2018).
- The processing will be necessary for the performance of a task carried out in the public interest in accordance with Article 6 (paragraph 1e GDPR).
- The processing of personal data for law enforcement purposes is lawful if the processing is necessary for the performance of a task carried out for that purpose by a competent authority in accordance with Part 3 Chapter 2 (s.35(1) & (2)(b), DPA 2018).

And....

# The 'Joys' continued...

In terms of sensitive processing (Pt.3 Ch.2 s.35(3) DPA 2018)

- The intended processing is strictly necessary for the law enforcement purpose, and meets one of the conditions in Schedule 8 (DPA 2018)
- Kent Police has an appropriate policy document in place (Pt.3 Ch.2 s.35(5)(a-b), DPA 2018).
- The processing of special category data (health) is necessary for reasons of substantial public interest, Article 9 (paragraph 2g, GDPR, DPA 2018) namely, prevention and detection of crime, and protecting the public from the effects of crime.
- The processing is necessary for scientific research in accordance with Article 89(1) (GDPR, DPA 2018) which states that it shall be proportionate to the aim pursued with respect for the fundamental rights and interests of the data subject in accordance with Article 9 (para 2j GDPR, DPA 2018).

# Simply put..

The argument proffered by Kent Police to conduct the research was

- That the public interest task (Article 6, GDPR) derived from the prevention of lethal/near lethal intimate partner violence (IPV).
- The substantial public interest (Article 9, GDPR) to allow for the processing of special category data (health) was the potential to invoke police/partner intervention (as a subsequence of processing and analysis of the data), prior to a lethal/near lethal IPV event occurring in the future.
- It was deemed proportionate in terms of the historical, statistical scientific research purposes (Article 89(1)), as the ultimate aim is to save lives and prevent serious harm (Article 9, GDPR).
- In terms of research purposes, where the processing of personal data is complicit with scientific, historical or statistical purposes the right to object is more restricted. Article 21(4) (GDPR, DPA 2018)

# The Sticking Points & Final Outcome

- The interpretation of data protection law and guidance is subjective; there is rarely only one way to interpret it.
- Discord and disagreement not only in terms of the interpretation of the legal basis to share data but also in terms of the status of the research- 'Medical Research' or 'Scientific Research'. (Police view; the sponsor (Kent Police) is not performing 'medical research' in terms of any clinical intervention but 'scientific research' in pursuit of a law enforcement / prevention purpose).
- Differing interpretation of terms 'necessary' and 'substantial public interest' as determined by Schedule 1, Part 2 section 10 DPA (2018). The ICO was unable to help with any examples of judicial interpretation of 'necessary' or 'substantial public interest'.
- Following over two years of negotiation culminating in presentation and endorsement from the Kent Database Ethics Committee, East Kent Trust Caldicott Guardian and Senior Information Risk Officer (SIRO), the proposal was presented to the East Kent Trust Executive Management Team to resolve the disagreement within the organisation. The Executive Management Team subsequently approved the research at East Kent. Two of the other three Trusts subsequently came on board.

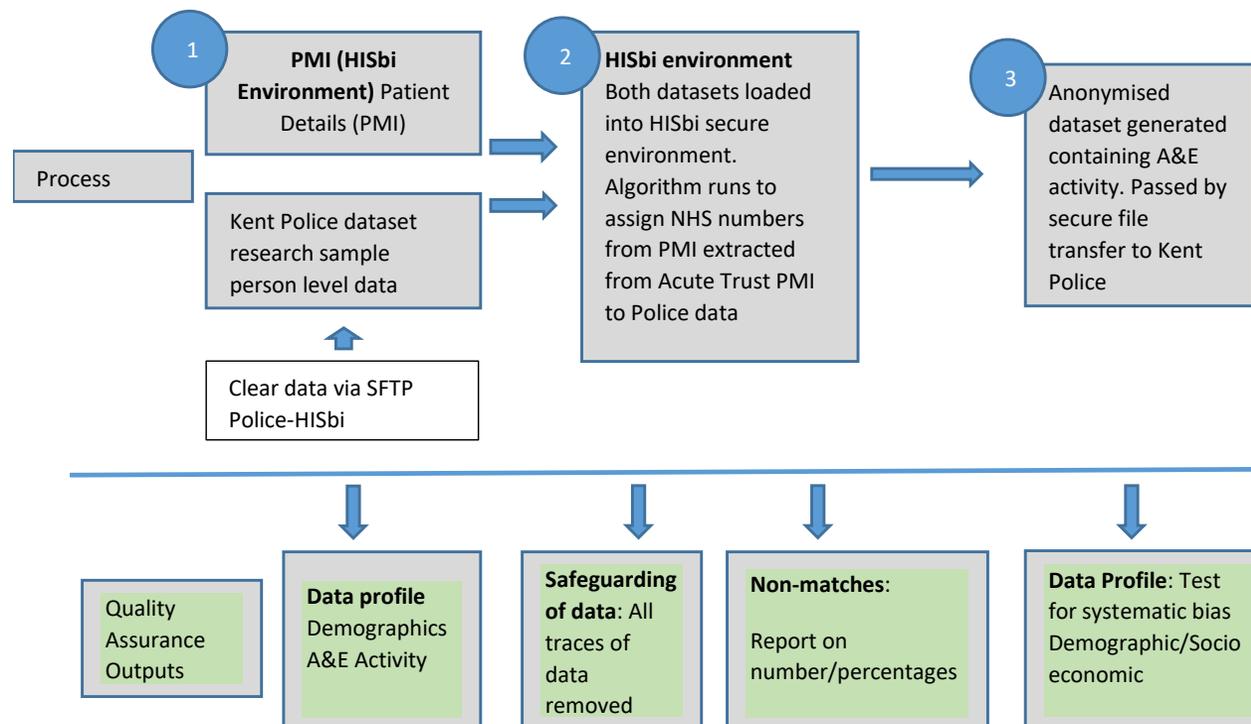
# The 'one off' Exchange Protocol

Following completion of the DPIA (1&2) and confidentiality agreements the data exchange took place.

A limited amount of police data was supplied to each of the three participating National Health Service (NHS) Acute Trusts in Kent and Medway through the regional warehouse team, Health Informatics Service Business Intelligence (HISBi)

This was to facilitate matching and included; forenames, surnames, dates of birth, home postcode from all family members in the 210 cases

The data was matched, anonymised and returned via assigned unique reference numbers (URNs). All identifiable data was destroyed following transfer.



# Included A&E Variables

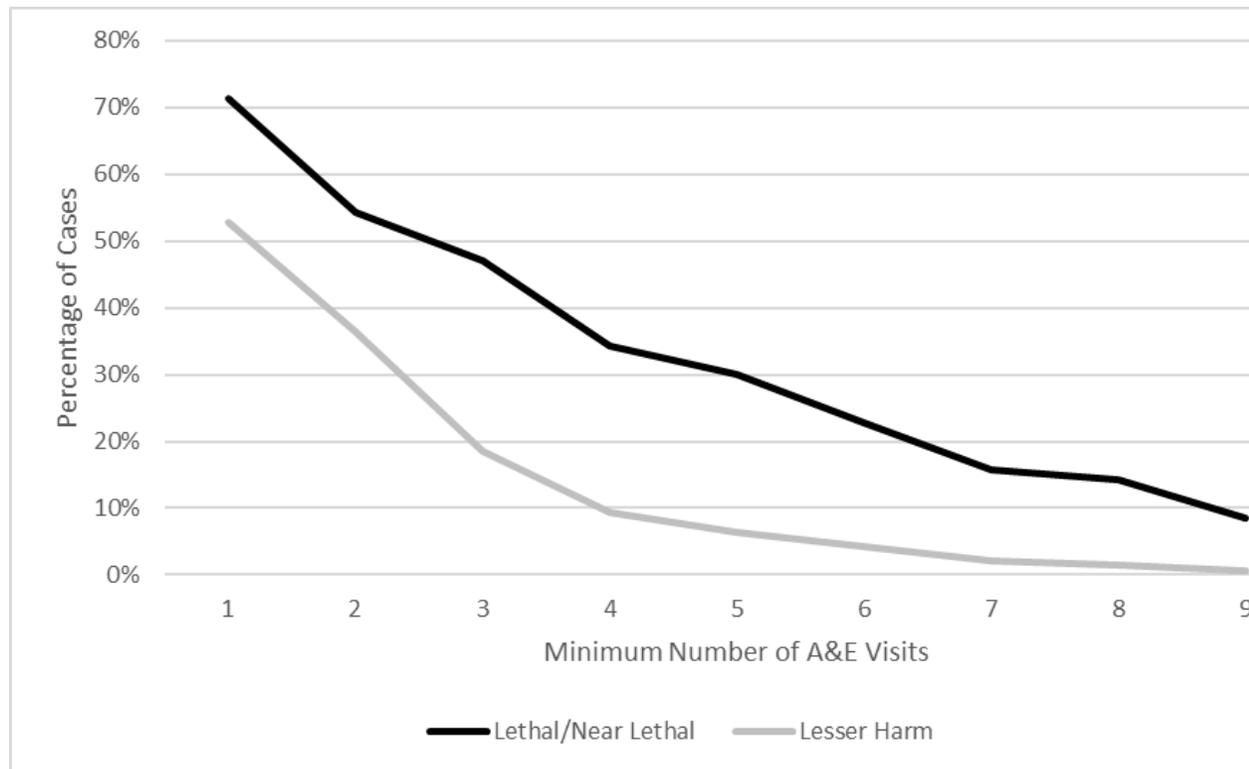
Having matched the police and health datasets comparative descriptive and correlational statistics were performed.

Part one looks to understand how much knowledge police had of families that went on to have a future domestic incident and how much health knew via A&E data.

Part two seeks to identify differences in police and health data between the lethal/near lethal group and the lesser harm group to see what criteria may be used to identify higher risk. This remains a work in progress.

Variable	Type
Cohort (case/control group)	Binary
Patient ID	Categorical (matching criteria)
Family unique reference number (URN)	Primary Key
Individual URN	Primary Key
Police Event Date	Date
Age	Age Band
LSOA Code	Categorical
Care Provider	Categorical
Attendance Number	Primary Key
Arrival Date	Date
Arrival Time	Time
Referral Source	Primary Key
Attendance Type (Ambulance/other)	Binary
Attendance Reason	Categorical
Complaint	Categorical
Diagnoses	Categorical
Investigation	Categorical
Treatment	Categorical
Disposal	Ordinal

# Insights (so far- Part 1) from combined Police/Health data



*Comparative Percentage Accident and Emergency visits between Case and Control groups*

The proportion of families where a member attends A&E is not the same ( $X^2 = 6.659, p < 0.01$ ).

Over 70% of Case Group families attended A&E at least once and over a third (34.3%) attended at least 4 times.

Just over half the Control Group families attended at least once (52.9%) and only 9% attended 4 or more times

The maximum number of visits in the 12 months preceding a lethal or near lethal incident by a single family was 21

# Disposal

This fell into three broad categories; hospital admission, referrals and no further action.

Given the frequency of attendance of some families these are not exclusive groups.

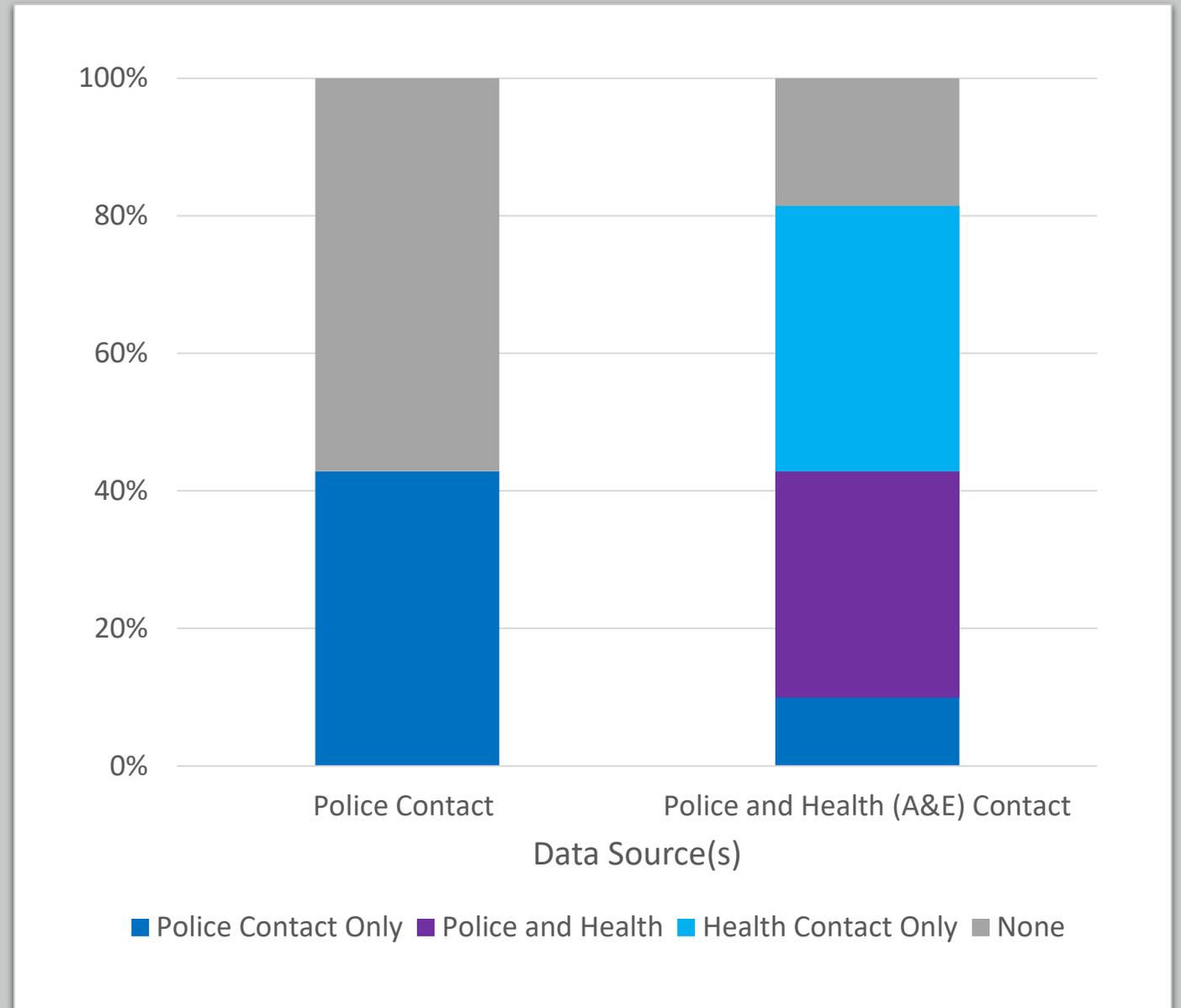
Those in the lethal/near lethal group experienced hospitalisation at over twice the rate of those who later experienced lesser domestic harm.

	Hospital Admission	No Further Action	Referral	Total (n)
Lethal/Near Lethal	40.00%	78.00%	58.00%	50
Lesser Harm	17.57%	87.84%	41.89%	74
Total	26.61%	83.87%	48.39%	124

# Combined

A reliance on police pre-event data alone identified only 43% of those that subsequently went on to suffer a lethal or near lethal DA event. Add to that the 67% false negative rate (from the police study) in terms of risk assessment of the less than half that were known. Single agency knowledge and assessment of risk is both poor and fragmented.

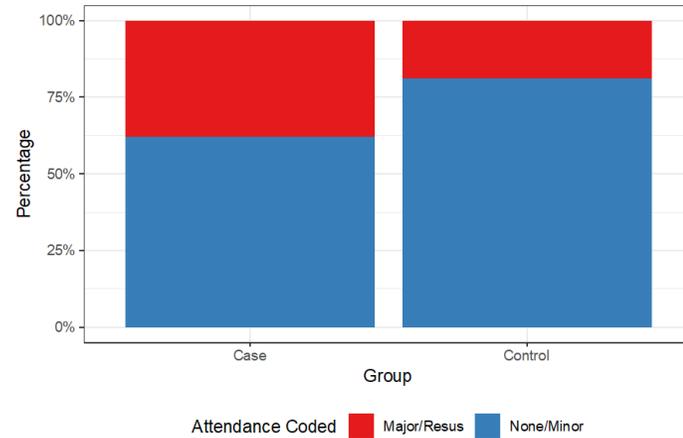
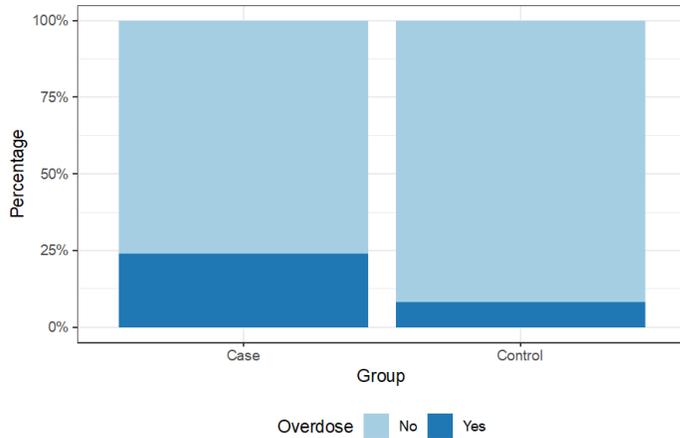
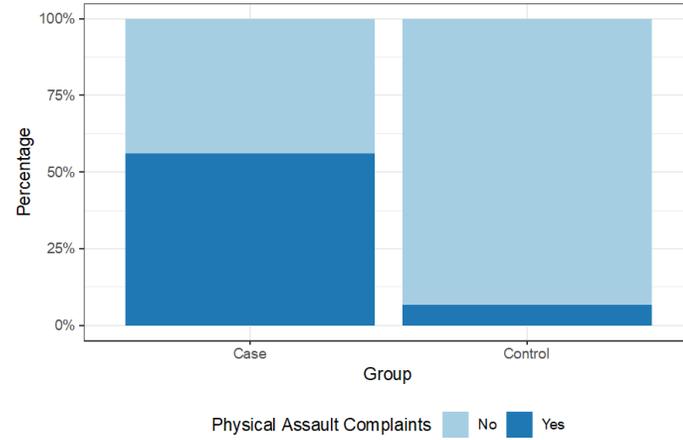
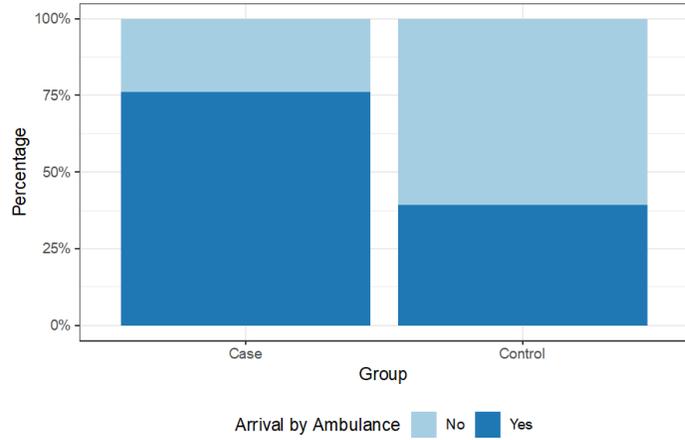
Had A&E data been available, jointly we would have known of 81% of these families. Arguably and dependent upon identified variables of significance, this may have increased the risk threshold applied and therefore the subsequent false negative rate.

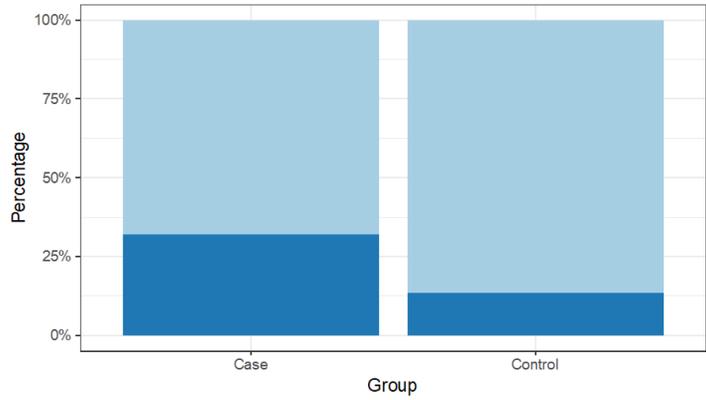


# Preliminary highlights from 'part 2'

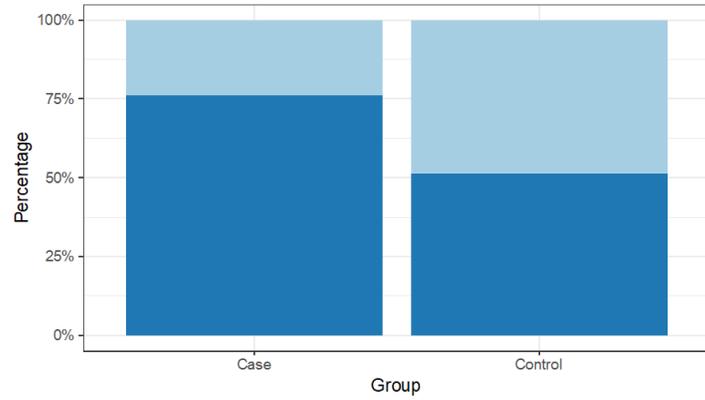
Health trusts were supplied with the details of 210 families that suffered domestic abuse over the 6-year period; 70 lethal or near lethal (LNLV) cases and 140 comparison lower harm violence cases. Three of the four health trusts provided returns which consisted of 124 families; 50 of the 70 LNLV group and 74 of the 140 LHV group. Overall there were 410 visits to A&E that were captured in the data. Eight variables were provided as laid out in the contents below. Each will be explored in this analysis to identify trends that may assist in the targeting of families at risk of future lethal or near lethal domestic abuse.

- Arrival Mode: How the family member arrived at A&E [coded]
- Complaint: What the complaint the family member made [free text-coded by police]
- Attendance Type: How serious the attendance was deemed [coded]
- Investigation: What medical investigations were undertaken [coded]
- Diagnosis: What was diagnosed [coded]
- Treatment: What was administered as treatment [coded]
- Disposal: How A&E resolved the visit [coded]
- Referral Source: Who was the referral source [coded]

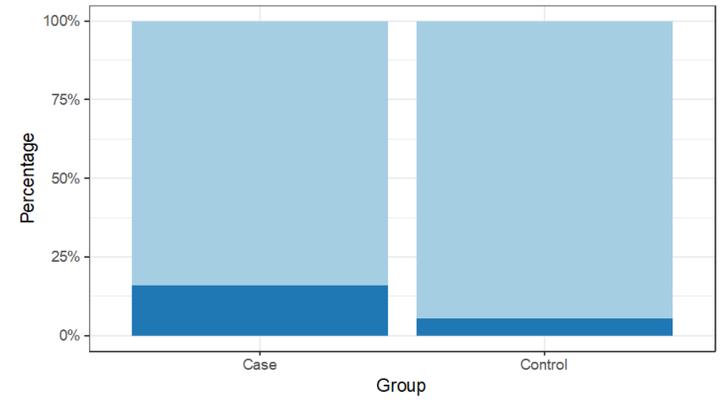




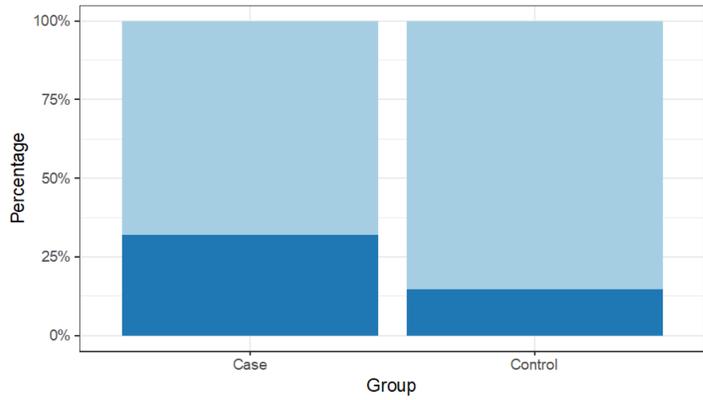
Tomography Investigation No Yes



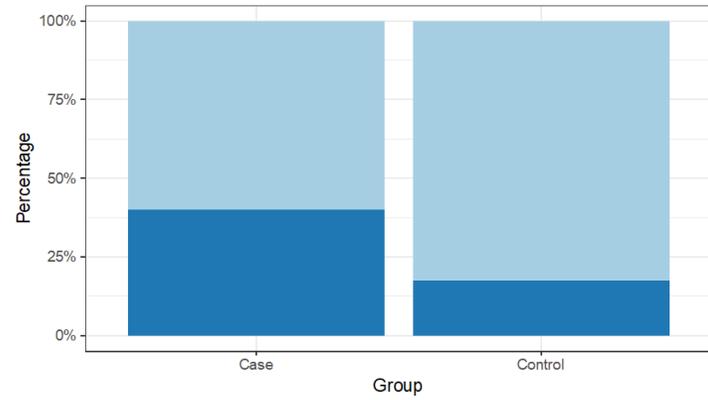
X-Ray Investigation No Yes



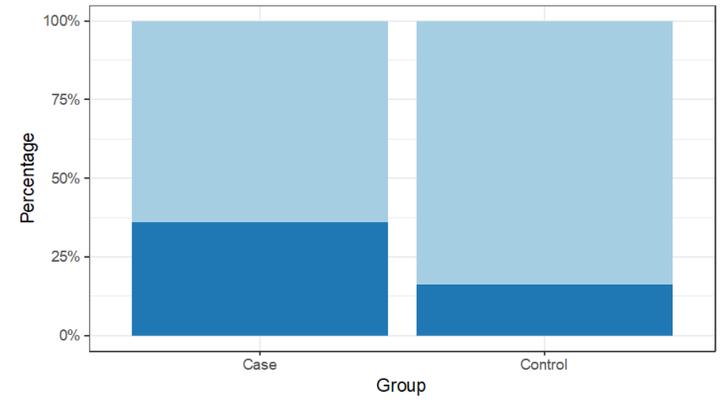
Poisoning or Overdose Diagnosis No Yes



Transferred To Other Health Provider No Yes



Admitted to hospital No Yes



Left Department Before Treatment No Yes

## Next Steps- in the immediacy



Part two of this analysis- identifying how to view '**general A&E attendance**' versus what may be '**relevant A&E attendance**' in terms of a 'triggering' event.



In other words, from which of the substantive A&E variables including, **attendance reason, complaint, diagnosis, investigation, treatment** and **disposal** as well as **number** and **frequency of visits**, do significant differences arise between the case and control groups that may indicate a heightened risk and a 'trigger' for future enhanced safeguarding surveillance and data sharing.



## Next Steps – medium term

Due to the comparatively low base rate of high-harm IPV offending, larger scale research utilising the family as a unit of analysis, across other police and health areas incorporating inter-agency family data could be conducted to clarify the associations found within this small exploratory study.

A broadening of the scope of health data to include other (or all) aspects of primary care to enrich the data base and provide a more accurate picture of the paradigm of domestic abuse in Kent.



## Next steps- long term

Dependent on any success of effective pre-event risk data sharing between agencies, there is the possibility for the development of a more accurate assessment and forecasting tool, using large volumes of data to predict the potential for a high-harm (IPV offence) occurring.

At Kent Police we are already running a trial utilising an algorithmic forecasting tool (Random Forest) from 15 years of retrospective Police data, identifying a taxonomy of perpetrator risk types to establish if such methodology enhances risk prediction in DA cases.

Using Police and Partner Agency data, collectively, it may be possible to make use of 'Random Forest' technology. Any such algorithmic forecasting tool, populated from weighted risk variables from evidence-based research may better proactively protect families from exposure to and harm from, IPV and DA.

# My View- for what its worth.

The National Police Chief's Council (NPCC) Policing Vision for 2025, (NPCC, 2016) sets out the aims for future policing in terms of partnership working,

***'By 2025 local policing will be aligned, and where appropriate integrated, with other local public services to improve outcomes for citizens and protect the vulnerable.'***

They suggest that this will be achieved by,

***'...improving data sharing and integration to establish joint technological solutions and enabling the transfer of learning between agencies and forces so we can work more effectively together to embed evidence based practice. The use of evidence based practice will be embedded and inform day-to-day policing practice.'***

My journey over the last couple of years has evidenced to me that we are a distance away from this vision but it convinces me that its right.



## The 'Question' is...

Perhaps in terms of interpreting data sharing legislation and guidance, the question we should be asking ourselves is,

'Why ***should*** we share this data? (and this is how we ***can*** do it)'

Rather than,

'Why ***shouldn't*** we share this data? (and this is how we ***can't*** do it)'

Perhaps had that been the position in the case that prompted this journey, the outcome for one 14 year old girl and her family may have been very different.