Cost-benefit analysis of specialist police rape teams.

Phase three report

February 2015

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1. Introduction

This is the third phase of our research into police specialist rape teams. In our phase one report we outlined existing work on rape and more widely on violence against women that had taken a cost-benefit analysis (CBA) approach. We noted in our phase one report that there are two major types of CBA:

- Ex ante which is conducted prior to an intervention and assists in the choice of an appropriate intervention or programme;
- Post ante which is calculated after the intervention to review the net benefit of a particular programme.

This CBA is post ante for forces with existing specialist teams in place, but ex ante for other forces who are in the process of deciding whether to go down the specialist team model route. We are aware that there are still a number of areas considering this and awaiting the findings of this report to assist with their decision-making process.

The second phase consisted of a national audit of existing practice. It identified which forces had a specialist team in place, provided a standardised definition of a specialist team, and outlined a list of benefits. We are aware that some forces (including one of our case study areas – Cheshire) have used this list of benefits as a framework to assess their on-going practice against, and this is something we welcome.

When we began our phase two research, we found that nearly half the forces (44%, n=19) had a specialist team[1] according to the definition below:

> A specialist rape team has dedicated, trained staff working together in an integrated way to provide the highest quality victim care and investigative standards. It investigates rape and other serious sexual offences and may also take investigative oversight of other sexual offences. It should have access to an analyst and also play a role in

[1] Numbers are likely to have changed slightly during that time, with some forces opening specialist teams and others closing or merging them with domestic violence or child or adult protection teams.

> education and prevention. Close partnership working with the Crown Prosecution Service, Sexual Assault Referral Centres, Independent Sexual Violence Advisors, Rape Crisis and other voluntary sector organisations is vital. The team should have strong leadership and coordination. It is not necessary for the team to be centrally located. (Westmarland et al., 2012, pg. 5)

The benefits identified were improved victim care, improved investigations, improved criminal justice outcomes, improved strategic and operational partnerships (multi-agency working), and improved trust in the police.

2. Research methods

Two case study areas were chosen to be examined in more detail for phase three - both of which had specialist rape teams in place. Although we did not choose a - force area without a specialist team to contrast our findings against, we used Rape Monitoring Group data to develop a proxy baseline measure for all forces without specialist teams in place. One of the reasons for doing this is because having a specialist team does not act as some kind of 'magic wand' that suddenly improves practice, just as not having a specialist team in place does not by default mean that outcomes will be poor. We are aware that some forces that do not have a specialist team in place are doing good work, though this was not always the case, and we did find some examples of below-standard work in some areas during phase two. Therefore, we did not want to pick just one force area to contrast against.

The two case study areas were selected through an iterative process which included consultation with ACPO's Rape Working Group, the results of the phase two analysis, discussions with potential case study teams, team reputations nationwide and, importantly, their willingness and ability to be part of the evaluation and provide their financial information (the latter requirement meant one additional police force withdrew from the research).

Avon and Somerset's Operation Bluestone, covering the Bristol area, was the first of the case study areas. This was chosen because of: a) enthusiasm in phase two about the benefits of their team, b) an external reputation within other forces of their team being an example of good practice, and c)

willingness to share financial data and allow staff time to support the research (e.g. through attending interviews). A more in-depth description of Operation Bluestone can be found in Section 3.

Cheshire Dedicated Rape Unit was the second of the case study areas. This was chosen because of: a) high level support for the unit (Cheshire's Chief Constable, Dave Whatton, was the ACPO lead who originally commissioned this piece of work), b) willingness to share financial data and staff time to support the research and c) because they had been relatively recently established (in 2011). A more in-depth description of the Cheshire Dedicated Rape Unit can be found in Section 4.

The data we used to prepare this report consisted of:

- Interviews with police and relevant partners
- Good practice case examples
- Financial information made available to us (this was fairly limited)
- Conviction statistics
- Rape Monitoring Group data (HMIC/HMCPSI)
- Existing literature on costs of crime

Ethical approval was gained from the Durham University School of Applied Social Sciences Ethics committee.

2.1 Counting and costing costs

The existing literature on costs of crime was reviewed to develop estimated costs per victim. Developing costs such as these rely on quite broad assumptions, including in some areas where an element of guess-work is needed because of substantial gaps in knowledge. Therefore, the fiscal costs and the benefit contained within this report should be classed as broad estimates based on the assumptions we outline in Appendix One. The fiscal costs from these assumptions and estimates are shown below in Table 1.

Table 1. Total Costs per Victim

Cost Type	Social/Personal Cost /£	Healthcare Cost / £	Total Cost / £
GP Visits	-	301.02	301.02
GU / Gynaecology	21,584.48	224.49	21,808.97
Depression	33,436.18	607.43	67,479.61
Anxiety	16,118.96	151.86	16,270.82
PTSD	37,595.59	-	37,595.59
Alcohol Usage	26.390.19	34.60	26,424.79
Drug Usage	13,855.57	83.99	13,939.56
Suicide	-	-	-
Employment	16,707.60	-	16,707.60
Criminal Justice System	17,508.00	-	17,508.00
Total	216,632.57	1,403.39	**218,035.96**

2.2 Counting and costing benefits

With respect to output benefits, we have costed the benefits to the police, the wider criminal justice system and society at large using the change in convictions as the measure. Conviction rates are clearly not the only way in which the health, social, employment and personal costs of sexual violence can be reduced by more effective policing. For example, prevention work such as workshops in schools run by Bluestone in Bristol have the potential to have a significant impact on reporting rates, future levels of sexual offending, and wider societal attitudes. However, given the lack of longitudinal data on the effectiveness of prevention measures, this is impossible to cost. We can however assume that its impact would be significant.

Furthermore, increased victim support measures, which have been listed as benefits by both the Cheshire and Bristol teams, are also likely to reduce health, employment and social costs to victim-survivors even after the perpetration of a sexual offence. Further research into the impact of these

support measures could allow these benefits to be costed, however this was outside of the scope of this research.

Given the difficulty in costing incremental benefits to victim well-being such as increased 'victim satisfaction' measures or increased Independent Sexual Violence Advisor (ISVA) provision, we have focussed this benefit estimate on the benefits accrued by convicting perpetrators and preventing reoffending. As such, it is likely to be a significant underestimate, but in the absence of longitudinal data on the impact of greater support through the CJS and the impact of prevention programmes, it provides a starting point. In light of other research demonstrating the impact of voluntary sector support services on health and well-being outcomes for victim-survivors, it is likely that the estimate would increase significantly if it could be costed, as the benefits to those who have already experienced sexual violence as well as those who might be at risk could be included.

There are two key elements through which a specialist rape team can be seen to increase the number of convictions in a given force area. The first is through the development of expertise in evidence gathering for these types of crimes, and the second is through an increase in reporting due to the perception that the force takes sexual offending very seriously. Our interviews with the two forces in this study supported the first assertion, while documented increases in reporting rates following the introduction of a specialist rape team support the second.

3. Case study one – Operation Bluestone – Avon and Somerset Constabulary

Operation Bluestone was set up in September 2009 to deal with sexual offences where the victim is aged 16 or over (although there is flexibility about whether cases involving victims aged 14-16 go to Bluestone rather than the specialist Child Abuse Unit) and where there is no domestic violence context. The unit's remit at the time we conducted our research was for the Bristol area only, but this has since been extended by Avon and Somerset Police force-wide. At the time, the unit had nine police constables attached,

as well as twelve detective constables[2], three detective sergeants and one detective inspector dedicated to it. In addition, an intelligence researcher worked half-time for the unit, although the intention was to increase the funding to allow full time commitments.

Bluestone's starting mission statement, prepared by D/Supt Sarah Crew, focused on developing greater public awareness, increasing trust and confidence in police responses to rape, providing victim-centred care and support, having dedicated specialist officers, and ensuring that trials involve a more supportive approach to victims.

Professor Westmarland visited the force in 2013 with a research assistant (Dr Olivia Smith) and interviewed six people and visited the SARC.

3.1 Costs

Staff costs for 2012/13 were £820,035.50 per year, including overtime but not including the nine attached police constables. Building and overhead costs are estimated at £65,000 per year.

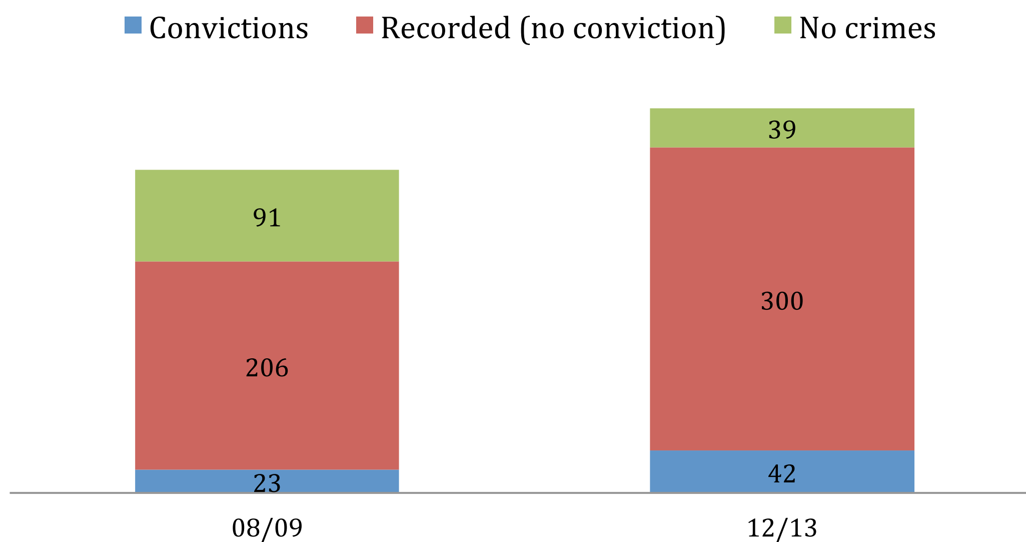
The overall estimated expenditure for Bluestone in 2012/2013 was £900,142.15 plus forensic costs. Forensic costs are estimated at £1,550.11 per case, and given the proportion of reports made within a 30 day time-frame for forensic investigation at 51.8%, this gives an average cost per case of £802.96. For 381 reported cases in 2012-13, this gives a total cost for forensics at £305,926.61, and a total cost for the unit overall at £1,206,068.76.

3.2 Benefits

We used HMIC published report and conviction data for Avon and Somerset from the year before Bluestone was launched (2008/9) and compared that with data four years afterwards (2012/2013).

The analysis showed positive results - that no criming had decreased while recorded offences and convictions had increased over time. Graph one (below) shows that:

- ***no criming decreased***, from 91/320 (28%) to 39/381 (10%).
- ***recorded offences increased***, from 206/320 (64%) to 300/381 (79%).
- ***convictions increased***, from 23/320 (7%) to 42/381 (11%).



For the purposes of the next analysis we merge the no crimed and recorded offences to give a 'reporting rate'. It is in theory possible for conviction numbers to go up simply because of an increase in reported cases, regardless of the work of a specialist team. By looking at the proportion of reported cases to convictions in 2012/13 and applying it to the rates in 2008/9, it is possible to estimate the number of convictions that are attributable to the specialist team. In this sense, it is a comparison of proportions that is important.

Applying the 2012/13 reporting to conviction proportion to 2008/9 reporting rates suggests that we can attribute five of the additional convictions to increased reporting rates (i.e. probably would have happened anyway), and 14 to improved practice. ***Therefore, we are able to say with some***

confidence that the work of Operation Bluestone has increased rape convictions over a four-year period.

Using our phase two analysis of which force areas did and did not have a specialist team in operation, we were able to collate the data for these non-specialist forces to calculate the expected increased reporting and conviction rates across these areas. For reporting, this figure was 18%, and for convictions this figure was 7%.

If we compare these increases to those seen in Bristol, we would have expected with no team in place for reports to be 376 and convictions to be 25. ***Therefore, we are not able to say with confidence that Operation Bluestone has increased rape reports over a four-year period.*** In other words, although there was an increase, this may have happened anyway and cannot be directly attributed to Bluestone through our analysis. However, we repeat our assertion above that convictions have increased through Bluestone – only 2 of the 14 are likely to have happened anyway in a non-specialist team – so 12 of the 14 (85%) are attributable.

3.3 Costed benefits

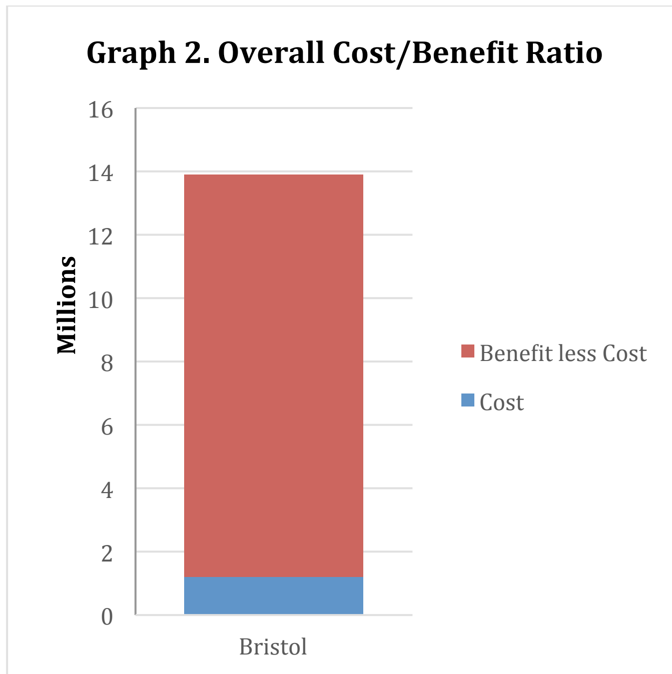
The next step in our analysis is to look at the costable benefit of the increase in convictions attributable to Bluestone. The costs we take into consideration here are the costs of operating Bluestone (outlined in section 3.1) and the cost of incarcerating an offender post-conviction versus the costs of rape – to the criminal justice system and to the victim (outlined in section 2 and expanded upon in appendix 1).

Although it is likely that the existence of Bluestone (e.g. through its prevention work), being arrested by Bluestone but not convicted, and situational deterrents (e.g. additional monitoring at premises where perpetrators were known to target particularly vulnerable people) is likely to have deter some offenders, we cannot evidence this and so do not include it in our analysis. Much more research into rape generally is needed before these potential benefits can be costed. Instead, we use the minimal measure of 'diverted offending while incarcerated' (although this does assume that

they were not committing acts of male rape while incarcerated) to cost the benefits accruing from these additional convictions.

Research on undetected perpetrators of sexual violence is extremely limited. Lisak (2003) suggests that an average offender of 26.5 years has perpetrated four separate rapes and three other sexual offences (sexual assault and sexual abuse of children included). Presuming that these offences took place in adulthood would suggest a mean level of offending at 7 incidents per ten years. Applying these figures to the mean incarceration time for a UK sample (8.575 years) would give an average of 6 offences which could be prevented per offender incarcerated. Information about undetected offences committed by incarcerated perpetrators is not available for the Bristol area. However, we do know that for 2013-14, there were 124 offenders recorded as suspects for rape offences who already had a crime record for rape within the last 12 months, 7 who already had 3, and 3 with 3 previous crime records for rape. Given the very low reporting rates for this type of offence, this high a number having previous reports within the last 12 months suggests that our estimates above are not unrealistic and are (intentionally) an under rather than over-estimate.

Applying these figures to the increase in conviction rates for the Bristol force area attributable to Bluestone and the health, CJS and social/personal cost per victim as above gives a total attributable saving of £15,698,589.12 (£15.6 million). Subtracting the cost of incarceration for these 12 convictions gives a total benefit of £13,900,789.20 (£13.9 million), which is shown in relation to the cost of Bluestone below, giving a total ratio of more than 1:11.



3.4 Costed investigative examples

The previous section used some broad assumptions, although where possible we have done our calculations on minimal rather than maximum estimates. This next section presents what this analysis looks like when specific cases are looked at individually. This is also useful in demonstrating in more detail the specific investigative approaches taken by Bluestone.

Example 1 – preventing further high volume sex offending

S & M had no convictions for sexual offending, although M had several non-sexual offence convictions. Despite this, they were well known to the police and other agencies, with approximately 200 intelligence reports on them over ten years. S & M's names were flagged in the fortnightly risk assessment team meetings (IRIS), and were subsequently discussed in the sexual violence MARAC.

When two women reported separate rapes in 2011, officers returned to another complainant who had made a report about S & M in 2009. Working alongside an ISVA, officers from Bluestone built the confidence of the complainants to support them in continuing with the case through to trial.

In 2012, S & M were found guilty of two rapes and pleaded guilty to grooming a 15 year old female. They were sentenced to 16 years in prison, with minimum of 8 years. Police rated the seriousness and extent of their offending as amongst the highest they have seen and are confident that they would have continued to target vulnerable women, often via social media, had they not been dealt with. Officers felt that without the increased support and expertise built up through Bluestone, they would not have been able to convict either man. For example, they said they would not have had the confidence, skills, or time to have re-contacted the previous complainant.

Given a cost per victim of £218,035 - a total time spent incarcerated for each offender of 192 months, and an estimate that for these offenders, given the police estimate of extreme severity of offending, we can estimate the total saving from conviction at £9,593,540 - which entirely recoups the costs of Bluestone for the year.

Example 2 - targeting those targeting the most vulnerable

V was known to the police from 2002 for behaviour that did not require formal investigations. V had a pattern of intentionally targeting young women in care or older women with drug and alcohol dependencies.

Between 2008-11, V was arrested on 5 separate occasions for sexual offences. The case took a long time to reach trial as V repeatedly changed legal representatives and ultimately represented himself. Eventually, V was convicted of one rape and sentenced to 8 years in prison.

Police considered V one of the highest risk offenders in the Bristol area- he was even witnessed targeting a young woman on his way to answering bail outside the police station.

***Given a 96 month sentence, and a high risk profile, the total estimated s aving from conviction is £2,325,707 -
which again entirely recoups Bluestone's annual costs.***

Example 3 - Investigative stamina leading to conviction of serial sex offender.

A was on her way home from a club when she was picked up and raped by a man who she thought was driving a taxi. CCTV analysis showed that the perpetrator was not in a taxi but instead had a silver BMW. DNA was also found on a swab from A, and this partially matched DNA found at another sexual assault crime scene in Bridgewater. A familial link was then established with the Bridgewater suspect, showing that A's rapist [B] was the suspect's brother.

Officers then searched for B's phone number and found that he was selling a car in London via the Gumtree website. Officers then used covert tactics to purchase the car, which they used to check for B's DNA. This tactic was successful and B pleaded guilty to rape. He was sentenced to 4 years and 4 months in prison, due to his early guilty plea, and was deported after his sentence.

Officers noted that the offender believed "it's my right to do this" and was described as "a player with no limits". Without Bluestone, officers argued that they would not have had the resources to dedicate to this investigation (to go through the hours of CCTV once the initial trail of looking for the taxi had been eliminated), or the confidence to go back to talk to previous complainants.

Given that the offender was deported, desistence from offending in the UK can be estimated on a lifetime basis, giving a costable saving of £3,052,490.

4. Case study two – Cheshire Constabulary Dedicated Rape Unit (DRU)

Cheshire's approach has been evolving over the last few years. The force's approach by 2008 was divisionally based with the three BCU commanders

responsible for policy compliance. The Force Crime Registrar became the first point of contact for rape offences subject to no crime and there was a training commitment to ensure that appropriate courses (SOIT/STO) were available. Central to the policy was a stated first priority, namely that the safety and welfare of victims was paramount with an undertaking to increase the quality of service and support to victims and increase public confidence to report serious sexual offences.

The first contact person, if a patrol officer or the help desk, will hand over to a SOIT/STO officer who acts as the main link and assists the SIO and OIC to gather evidence. The OIC will be a substantive detective in most instances and is responsible for identifying relevant lines of enquiry, securing and preserving evidence. A supervising officer, at least a Detective Inspector, ensures the resourcing and overall supervision of the enquiry.

In the view of two DCs currently working on the DRU, a SOIT trained officer was often not available as a first responder. They also made the point that when an allegation of rape is referred to a generalist CID, this would be within a mixed case load with rapes only occurring intermittently so that expertise was not being built up. In addition the point was made that, frequently, complainants were very vulnerable, the issues are emotional and the investigation intense. As one DC said "some people are better at dealing with offences and different types of victim in how to handle them."

Following an inspection by the ACPO Rape Working Group a business case was formulated in 2011 called Operation Crystal, which examined the viability of a dedicated rape investigation team. This was also stimulated by the appointment of the present Chief Constable, who was the ACPO lead for rape. The philosophy behind the setting up of the unit is as a victim centred approach which responds professionally every time to complainants who are believed to be telling the truth and where offenders are brought to justice. They use a 'root cause' approach to investigations. Root cause analysis helps identify what, how and why something happened, thus preventing its re-occurrence. Root causes are reasonably identifiable, can be controlled by management and allow for generation of recommendations. The process involves data collection, cause charting, root cause identification and

recommendation generation and implementation (Quality Progress July 2004).

Professor Brown visited the team and conducted interviews in early 2014.

4.1 Counting the costs

Cheshire DRU has provided us with a headline figure of £1.9 million which includes staff, ancillary and St Mary's SARC costs.

4.2 Costing the benefits

We completed a similar quantitative analysis of Cheshire's detection and conviction statistics to that used for Bluestone. A comparison of the increase in convictions for the DRU compared to an expected value for forces with no DRU over the same period did not demonstrate a statistically significant benefit in terms of convictions. However, this does not mean that the benefits reported during our visits to the Cheshire DRU were not present, as these may have been in respect of victim care not criminal justice outcomes.

4.3 Investigative examples

Example 1. Continuing investigations where limited initial evidence

S is a 22 year old female who suffers from mild cerebral palsy. S attended at her local Police station on a Saturday afternoon stating that she had been out the previous evening, got in a taxi to go home and had 'blacked out'. S was having flashbacks of being in wooded area but couldn't provide any further information however she believed she had been sexually assaulted.

S was taken to St Mary's Sexual Assault Referral Centre (SARC) where she underwent a forensic medical examination and received support from the crisis worker before being referred to an independent sexual violence advisor (ISVA) for further longer-term support.

Officers from the Dedicated Rape Unit (DRU) commenced an investigation into the allegations made and following extensive CCTV enquiries, a local taxi driver was subsequently arrested and charged with rape of S. He later

appeared at Warrington Crown Court where he was found guilty following a trial and sentenced to 8 years imprisonment.

Example 2. Complex investigations and working closely with CPS

K is a 28 year old female who has now moved out of Cheshire. K went to her local Police Station to report historic domestic violence against her ex-partner. A Police Officer was taking details from K when she disclosed a number of vaginal and anal rapes which had taken place in Cheshire and subsequently a referral was made to the Dedicated Rape Unit (DRU).

Although the rapes were historic in nature, K attended St Mary's SARC in order to be checked medically and to receive support from the support worker before being video interviewed by specially trained officers.

Due to complexities in the investigation, a meeting was held prior to the suspect's arrest involving a Senior Crown Prosecutor from the CPS during which it was agreed to try and locate previous partners of the suspect to see if they could offer any evidence to support the investigation or indeed to see if they required any support for any domestic abuse they may have been subjected to. Following on from these enquiries, a second victim was subsequently identified and as a result of support she received from both the DRU and ISVA, she was able to provide evidence regarding further offences. The suspect was arrested and charged with multiple rapes. He was later tried at Chester Crown Court where he was found guilty and sentenced to 13 years imprisonment.

Example 3. Use of root cause analysis as investigative basis

A young homeless woman was placed in local authority mixed accommodation. This was staffed 24/7 but residents could pretty much come and go as they pleased. She reported being raped by a fellow resident. The suspect was interviewed, bailed and located in different accommodation.

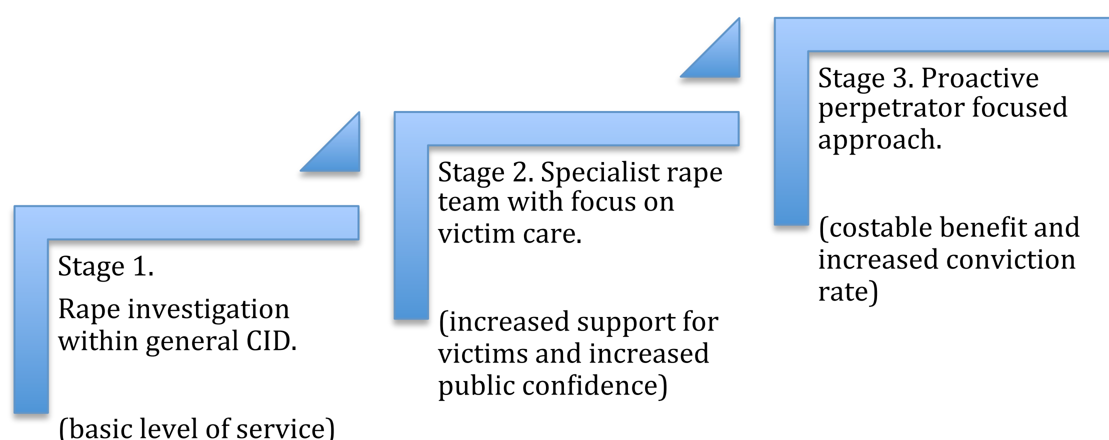
About a month later she complained of another assault, while still living in the original accommodation.

Cheshire DRU decided that safeguarding was a priority. A root cause analysis suggested that the mixed accommodation was an environment in which she was particularly susceptible in that it provided an 'exploitative opportunity'. The option to move her to another staffed hostel was not considered viable, nor was leaving her she was. The DRU in conjunction with Housing Solution, an agency in Cheshire dealing with accommodation problems, were able to offer her own flat to remove her from a potentially risky environment.

It would be less likely that such an intervention would be undertaken if the allegation had come to a mainstream CID office. The case against the two suspects was ongoing at the time of writing.

5. Conclusions

Based on our analysis of the specialist rape teams in Cheshire and Bristol, we have created a layered three-stage model to represent elements of potential improvement to policing which are being implemented in both areas. This also builds on findings from the previous phases of this research.



Stage one represents forces with no specialist unit where rape cases are investigated by a general CID officer – there may be some degree of specialist training but the lack of dedication does not allow expertise to fully accrue.

Stage two is exemplified by the Cheshire DRU – the investigative focus is supplemented by an increased focus on victim care, for example through increased ISVA support. While this doesn't show a costable benefit in terms of convictions, our interviews show clear benefits to this approach for victims, and it is achievable partly through the expertise which is built up in a specialist unit. Also, shifting the focus from merely investigative to a more holistic one shows a commitment to procedural justice for victims, which is broader than just convictions.

The third stage, which is demonstrated by Bluestone, involves an additional proactive perpetrator focus to policing on top of the victim care approach that has already been established within a specialist unit. In our report this has been shown to lead to an attributable increase in convictions, and therefore a cost benefit to the Bristol unit of 1:11 – for every £1 spent, over £11 is saved. While there are many caveats to the fiscal costs and benefits that have been used to get to this figure, we have been very frugal with our estimates.

In our view these three stages lay out a potential map for improved practice within rape investigation, but it is important to emphasise that it is a layered approach, where the improvements achieved in the first two stages are necessary before achieving the costable benefit in the third.

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Appendix One – Cost assumptions

Much of these costings used within this report are drawn from the Home Office Cost of Violent Crime report (Dubourg et al. 2005) and Sylvia Walby's research on the social cost of domestic violence (2004). Our costings use elements of both, as the healthcare service usage costings for sexual violence in Walby consider a range of physical health consequences for sexual violence beyond just sexual health problems and physical injuries, which reflects research on the multiple correlates of sexual violence, for example increases in diagnoses such as chronic fatigue, psychosomatic pain and fibromyalgia etc. However, the Walby (2004) report excludes sexual health consequences, largely on account of using DfT estimates for health costs of 'wounding' to estimate costs for domestic violence related injuries, and using proxies for injury severity to cost sexual violence in the context of domestic violence. This may lead to an underestimate for sexual violence, where sexual health consequences are also present, and as such we have used QALY estimates from Dubourg et al (2005) to estimate costs for this. Furthermore, we have, where data is available, used both QALY loss estimates and medical cost estimates to give us both a healthcare cost and social cost estimate for the consequences of sexual violence. For all of the source costs below, inflation up until September 2014 has been applied. Therefore, fiscal costs will be slightly different than in original source documents.

A QALY is a Quality-Adjusted Life Year, and represents a combined measurement of years of life and the state of health during those years. One QALY is defined as one year in perfect health, whilst 0 represents death. One year of life below perfect health has a QALY value between 0 and 1, depending on the severity of the health impairment (the more severe, the closer it is to 0). In estimating the effect of an illness, the QALY score multiplied by the number of years for which the reduced health state is expected to last, which can be used to give a QALY loss estimate. For example, if an illness has a score of 0.25 and is expected to last for 4 years, the victim-survivor would have 1 QALY during those 4 years, and as such the QALY loss is 3.

GP visits

Numerous studies support the assumption in Sylvia Walby's (2004) research into the costs of domestic violence: that victims of sexual violence will require greater use of general practitioner services in the years following the assault. This could be in relation to referrals for other mental health or medical treatment, for the treatment of injuries following the assault, or for prescriptions, for example for anxiety or sleep related conditions. Our estimates use the figure for rate of GP service usage from the 2004 report, but update the unit costs in line with New Economy Manchester's (2014) unit cost database for health services and the Unit Costs of Health and Social Care report (2006). Given figures of £31.12 per consultation, £43.39 in prescription costs per consultation and £9.91 in lost travel costs for the patient, the total figure for our costings is £253.26.

GU/Gynaecology

We had added this category to the health costs included in Walby (2004) on the assumption that increased service usage in relation to STI screening / treatment and unwanted pregnancies will be a direct consequence of sexual violence. Taking only the pregnancy / gynaecology-related health outcomes from the Home Office Cost of Violent Crime report (2005), the expected QALY loss for rape and sexual assault (weighted by prevalence) is £35,790.06.

The 2003 NHS Costing Manual estimates genitourinary medicine unit costs at £212, and termination of unwanted pregnancy costs at £479. Estimating the proportion of rapes resulting in pregnancy at 5%, proportion of these which the victim-survivor chooses to terminate at 50% (Holmes and Kilpatrick 1996), and weighting the data for the 2013 prevalence ratio of rape and other sexual assault, the total figure for gynaecological health costs would be estimated at £224.49.

Depression

Depression is a frequent correlate of sexual violence, and carries a heavy social and healthcare cost. Dubourg et al (2005) use an estimate of 20% for

rape and 0% (sic) for sexual assault, which seems unrealistic, especially in the latter case given the documented mental health consequences for victims who experience sexual assault which does not involve rape. Westmarland et al (2012) estimate the prevalence of victim-survivors who 'feel depressed' upon accessing services at 73%. In this case, due to the probability of many victim-survivors either not meeting criteria for clinical depression or not accessing support, we have used the 73% figure to cost the QALY loss but the 20% figure to cost healthcare service usage, using figures from the New Economy Manchester unit cost database. This reflects other literature on proportions of survivors meeting criteria for clinical depression at 13 – 51% (Campbell et al 2009), if we assume that the proportion accessing treatment is likely to lie at the lower end of this range. Using these figures, and estimates of three years worth of service usage per victim-survivor, gives respective costings of £55,942.55 and £604.83.

Anxiety

The same costing process is followed here as that for depression above. An average estimated proportion of survivors experiencing anxiety is therefore used in combination with QALY estimates from Dubourg et al (2005) to create a social cost per victim-survivor, and a lower estimate used in combination with the unit cost database to estimate the health costs for those seeking treatment. Using an overall figure of 25% (Campbell et al 2009) and a figure with respect to accessing treatment of 5%, the costs are £4,789.60 and £151.21.

Post-Traumatic Stress Disorder

This health outcome has only been costed in terms of QALYs, given that as recognised in Walby's (2004) costings, there are few estimates available for PTSD treatment in the UK, where mental health provision is more commonly provided as a consequence of conditions such as depression and anxiety, with PTSD being a likely correlate but not having its own distinct treatment pathways. The figures of 49% PTSD prevalence for rape and 22% for sexual assault in the Cost of Violent Crime report reflect much of the literature, around the centre of an estimate of 17 – 65% prevalence for rape (Campbell

et al 2009). Using this estimate and uprating the resultant QALY loss to 2014 prices, the estimated cost per victim is £37,595.59.

Alcohol and Drug Usage

These measures are not included in the Walby report, and are measured in Dubourg et al's (2005) 'Costs of Violent Crime', although the prevalence figures appear low compared with recent research into the health consequences of sexual violence. As such, we have used prevalence figures from Westmarland et al (2012) which suggest a 24% prevalence for alcohol abuse and 9% for non-prescribed drugs. These are both higher than as cited in Dubourg et al (2005), but are drawn from recent data from a sample of Rape Crisis service users, which may provide a broader sample than victim-survivors who use general medical or mental health services. Furthermore, the likelihood of disclosing alcohol or drug abuse in a voluntary, specialist organisation may be higher than within a general health setting, although due to the nature of disclosing illegal drug abuse this estimate may still be low. Using these figures in combination with the QALY estimates for drug and alcohol abuse, the overall cost can be estimated at £13,855.57 for drug abuse and £26,390.19 for alcohol abuse.

New Economy Manchester's unit cost database estimates the cost of one year of healthcare costs for alcohol abuse and drug abuse at £1,800 and £3,419 respectively. However, these estimates are for service provision costs, so it seems more appropriate to use prevalence figures which more accurately estimate the number of victim-survivors accessing services for these issues, not undisclosed usage of drugs and alcohol. As such, estimating approximately one year of duration for each health state, the potential costs are £34.60 and £83.99.

Suicide

As in Walby (2004), costings for suicide and suicidal ideation are difficult to obtain because of the different outcomes in relation to suicidal ideation, active suicidality and suicide attempts. The QALY estimate for suicide in Dubourg et al (2005) is 17.6411 - reinforcing that the social and personal impact of this consequence of sexual violence far outweighs many others.

However, although research exists on the proportion of suicides attributable to domestic violence, data on sexual violence alone tends to focus on suicidal ideation and suicide attempts. Given the broad nature of this category, it is difficult to cost in terms of healthcare, and given the overlap between suicidal ideation and other mental health outcomes such as depression and PTSD, we have excluded social and health costs in this area. However, it is likely that there is an increased health burden in this area which remains uncosted.

Employment Costs

Here we follow Sylvia Walby's (2004) work in using the DLTR estimates for lost output as a result of sexual offences by taking the costs as £15,150 for rape and £1,160 for other sexual assault. Weighting these estimates by prevalence from the 2013 BCS gives an average figure per victim of 16,707.60. However, given that these figures are taken from estimates for physical wounding and as such fail to address well documented mental health correlates of sexual violence and the impact on employment and productivity (Banyard, Potter and Turner 2011), this is likely to be a very low estimate.

Criminal Justice System Costs

Using the estimate of average cost per offence from the Home Office Cost of Violent Crime Report (2005), and uprating to 2014 prices, the average CJS cost for one sexual offence stands at £17,508.