

Reply to: Leah Smith

Tel No: 01953 424455

30th October 2019

Dear Member of Public,

Freedom of Information Request FOI/OPCCN/178

I am writing in connection with your email dated 22nd October 2019, in which you requested the following information:

“Under the terms of the Freedom of Information Act 2000, please send me a full copy of the evaluation of the initial WONDER project, which was carried out for the OPCC by Crest Advisory.

It is referred to in this report from a year ago <https://www.norfolk-pcc.gov.uk/documents/transparency/decisions/2018/2018-04FundingForWONDERScheme.pdf>

Please respond within 20 working days.”

I have reviewed our records and I can advise the following:

Please see enclosed in Appendix 1, a full copy of the evaluation report for WONDER for the initial 12-month pilot carried out March 2017 to February 2018.

Yours sincerely

L. Smith

Leah Smith
Complaints and Compliance Officer and FOI Decision Maker
Office of the Police and Crime Commissioner for Norfolk

Internal Review

If you think we have not supplied information in accordance with Section 1 (the General Right of Access) of the Freedom of Information Act 2000, or you are dissatisfied with the way in which your request has been handled, then you should write, in the first instance, to:

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If you are dissatisfied in any way with our response or the way we have handled your request, you can contact us by phone, email or in writing. We may, in the first instance, try and resolve your complaint informally. However, at any stage you can request or we may decide to treat your complaint formally under our internal review process.

An internal review is conducted by the Chief Executive who will review the request and response, taking account of your complaint(s), and will respond in writing as soon as possible. The Information Commissioner's Office recommends that a response should be made in 20 working days. If we are unable to respond in this timeframe we will inform you and provide a date by which you should expect to receive our response.

If, after the internal review, you remain dissatisfied then you can complain to the Information Commissioner's Office, the government regulator for the Freedom of Information Act. Details of how to contact the Information Commissioner's Office can be found at www.ico.gov.uk



Appendix 1

WONDER Evaluation

Jack Cattell and Jay Hughes 2018

| Version | Date | Author | Description |
|----------------|-------------|---------------|-----------------------------|
| 1 | 16/04/2018 | JC | First draft of the report |
| 2 | 17/04/2018 | AM | QA of report |
| 3 | 18/04/2018 | JC | Client ready draft |
| 4 | 22/05/2018 | JC/JH | Update from client comments |
| 5 | 23/05/2018 | JC | Qa and proofing |

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Introduction

This report describes the results of the WONDER project evaluation. The project ran between March 2017 and February 2018 and was a joint OPCC Norfolk and MoJ funded intervention. It was designed to improve outcomes for female offenders who were resident in Norfolk (specifically in the Greater Norwich area and King's Lynn & West Norfolk, although the project was later extended to all of Norfolk). The project aimed to reduce the offending by vulnerable women in Norfolk and to build their strength to live a life without offending and with reduced support needs.

Women who accepted a conditional caution were provided with a tailored support programme, delivered by the team at Julian Support and its partner organisations, the Sue Lambert Trust and the Magdalene Group. Women who attended a Police Investigation Centre (PIC) and who received a caution or were subject to no further action were also offered the same support and were encouraged to take advantage of the project.

Once engaged with the WONDER project, women were assessed using the Justice Star tool and referred to relevant partner organisations and services. Their engagement with services was monitored by Julian Support, whose coordinator would update plans and review progress with the women.

This evaluation report describes the following:

- The evaluation's scope and methodology
- The delivery of WONDER
- The Impact of WONDER
- Recommendations

Scope and Methodology

The Better Policing Collaborative were asked to evaluate WONDER using the project's and police's available quantitative data.¹ The evaluation approach was discussed with the WONDER project's OPCC and delivery teams, and below an outline of the agreed scope is described.

Process measures

Monitoring data were used to provide a full description of the WONDER project's delivery process, from initial referral and engagement in the project, to completion of support. These monitoring data were analysed and presented in an Excel dashboard and were scrutinised collectively by GtD, Norfolk OPCC and Julian Support every quarter to identify early improvements to the project. Appropriate statistical methods were also used to provide estimates of how the quality of delivery and support were affecting the project's outcomes.

Outcomes measures

Norfolk OPCC will separately assess the project's impact on the proven reoffending rate by making a submission to the Justice Data Lab. Accordingly, this evaluation will use the available data to assess changes in intermediate outcomes, namely:

- Rehabilitative outcomes as measured by the Justice Star tool (project data)
- Re-arrest rates within 3 and 6 months of referral to the WONDER project (police data)

The evaluation piloted a quasi-experimental approach to estimate the impact of WONDER on re-arrest rates. Outcomes for WONDER and a control group of similar women in Suffolk were compared to understand the impact of WONDER. The full methodology is described in the Appendix.

¹ Ten days from the Evidence Based Policing (EBP) Budget were assigned to the evaluation

Qualitative research

The evaluation did not include qualitative data collection. Instead, the OPCC Norfolk provided qualitative data it collated and the results of a qualitative assessment of WONDER completed by Crest Advisory. These data are used in this report to provide examples and case studies, and to illustrate quantitative findings, but a full qualitative analysis was not completed.

Delivery of WONDER

Referrals

During WONDER's 12-month period of operation, 698 women were arrested and brought to one of the project's targeted Police Investigation Centres (PICs). Of these 576 (71%) were offered a referral to WONDER and 364 declined that offer, 60 reported already having help and 152 (21% of all arrests) accepted the offer. Only 65 arrested women were not asked if they wanted to be referred to WONDER.

Twenty-one women were out of scope for the scheme so by March 2018, 131 women were referred and accepted to the WONDER project.² The most common offence was violence against the person (n=41) followed by those arrested for public order offences (n=22) and theft (n=20). The remaining 49 women were arrested for seven different offence types. Contrary to the original intention of WONDER, most referrals were voluntary (95%) and only five came from conditional cautions. In fact, 47 women were charged.

The referral numbers are encouraging given that police custody staff feedback suggested that there was initial reluctance to engage with WONDER in a context of reduced resources. There was a concern that WONDER duplicated the liaison and diversion service, that staff had low awareness of the project's role, and that staff were sceptical whether women would take advantage of the support on offer. A woman referred to the WONDER project, however, reported a softening in police attitudes. She said that the referral was valued and she believed the police had improved their understanding of female offenders because of WONDER:

"The police just don't know how to deal with women who are arrested. They are quite hostile, but now they are realising that there are other things going on... now they are looking at the whole picture."

WONDER staff also reported a reluctance within police staff to work with the WONDER project. When done right, however, it appears the police can improve the experience of low risk of harm women offenders.

² The difference in numbers is due to fall out and the evaluation team were unable to match all women in WONDER to the police dataset.

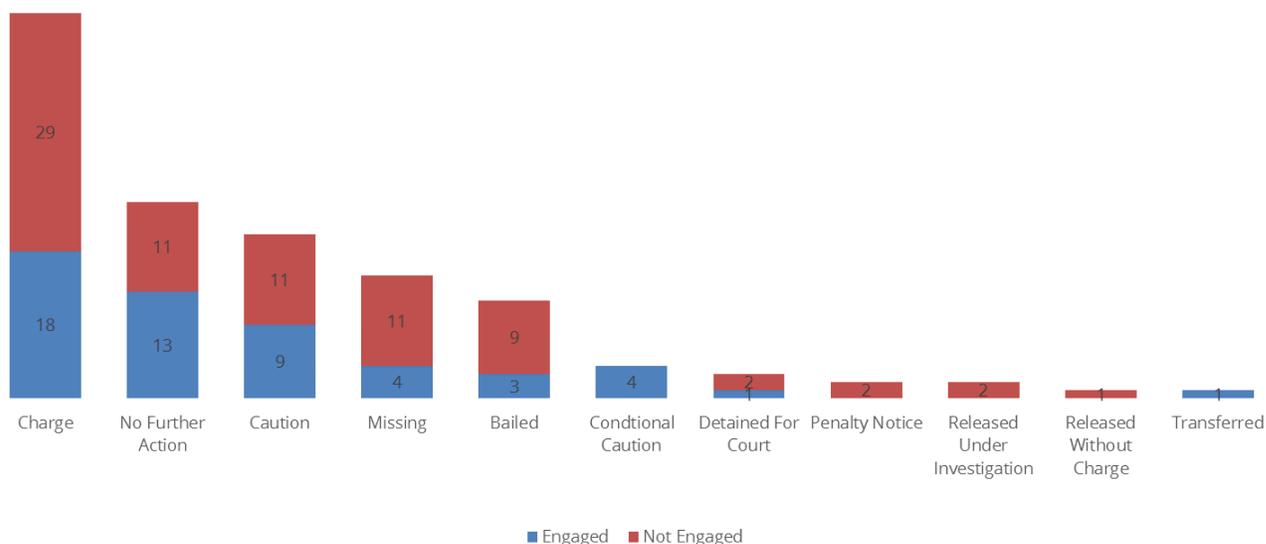
The mean age of the women was 35 – the youngest was 19 and the eldest was 68 – and 69% were over 30. Overall, 25% had been arrested for a previous offence and 10% had previously been involved in a non-criminal incident. Forty of the women (31%) had been a victim of crime at least once since October 2015.

Engagement

Of the 131 women referred to the project, 40% (n=53) engaged with Julian Support and accepted some support. The project maintained contact with women who did not engage for on average 6 weeks. This suggests that the providers attempted to engage women but did not waste resources once it became clear that they were unlikely to accept support. The average time to first contact was 2.8 days so for the 60% of referrals who did not engage the reason was unlikely to have been delays in contact. In fact, one woman said, “if they didn’t call me, I wouldn’t have reached out.”

Statistical analysis³ was completed to estimate who were more likely to engage with WONDER. Unfortunately, the small sample size meant conclusions on what influences engagement could not presently be made. The chart below describes the numbers who engaged and did not engage by outcome type.

Figure 1: Number of referrals who engaged with wonder by arrest outcome type



Source: Julian Support Monitoring Data

³ A logistic regression was completed.

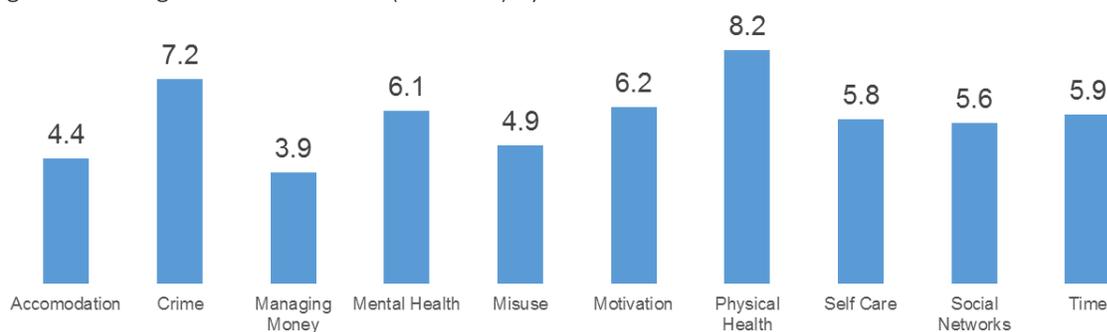
Most women who received a charge or caution did not engage, most women who had no further action taken because of their offence did engage and all women with a conditional caution engaged with WONDER (though only 4 women with a conditional caution were in the data).

Assessment

As 53 women engaged with the project it is not possible gain meaningful results from statistical analysis. Accordingly, the remainder of this section describes the data collated.

Women were assessed using the Justice Star tool designed by Triangle Consulting. The tool assesses women on 10 criminogenic needs from one to 10 – where one is a substantial need and 10 is no need. Overall 70% of engaged women (n=37) were assessed at the beginning of WONDER. Ninety two percent of these women (n=34) had at least one assessed score of five or below and a majority (59%) had three needs assessed as 5 or below. This means that the targeted women generally did have needs that required extra support. Figure 2 below describes the average score for each assessed need.

Figure 2: Average Justice Star Score (out of 10) by each need assessed



Source: Julian Support Monitoring Data

Managing money, accommodation and substance misuse were the most common needs. Physical health was not considered a need for most women and criminal activity was not considered a problem for most women. This perhaps suggests that the arrest that lead to the WONDER referral was a rare occurrence (approximately three-quarters had no previous arrests in the available data).

The needs did not occur in isolation of each other. Women who had accommodation problems were also more likely to have problems managing money (n=18) and limited social networks (n=12). Also, mental health problems were also associated with

managing money problems (n=13). Nine women had problems with managing money, accommodation and self-care.

The support workers were also asked to identify a woman's primary need. Emotional support was ranked highest for 15 women, housing was ranked highest for 12 women, and domestic abuse was ranked highest for six women. Mental health was ranked the second most important need for 18 women. The most common combination of primary and secondary needs was emotional support and mental health (12 women, no other combinations were common).

Supporting women

Contacts

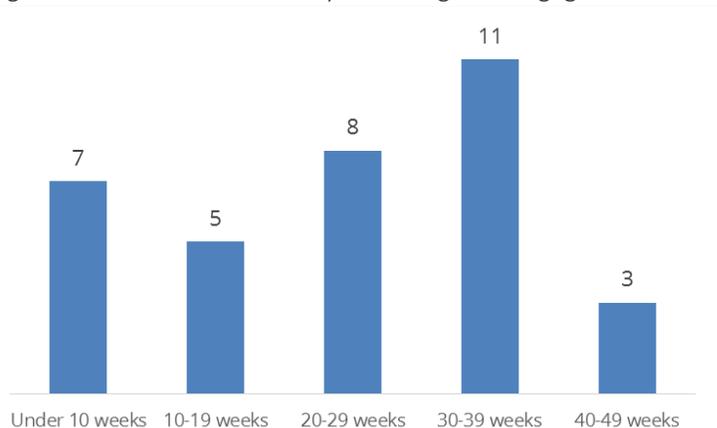
The WONDER project was a relatively intense intervention for the women. The average period of support was 149 days and 40 contacts would be made by Julian Support. Most of these contacts would be remote (e.g. by telephone) but on average the Julian Support worker would meet face-to-face 11 times with a woman. This is a greater level of support to that likely received by similar low harm and low likelihood of reoffending women sentenced to a community order⁴.

The women engaged with the project for on average 24 weeks, and the lengths of engagement ranged from 4 weeks to 44 weeks Figure 3 describes for how long women were supported by WONDER, the most common period being 30-39 weeks (11 women). Eighteen percent of women engaged for more than 3 months (n=24) which is similar to the 22% that engaged with the Greater Manchester Whole System Approach project or 3 months or more⁵. This compares to a maximum period of support of 12 weeks from liaison and diversion in Norfolk.

⁴ Cattell, J., Mackie, A., Capes, T. and Lord, C. (2014) *Implementation of Community Orders* (Ministry of Justice: Online publication)

⁵ Kinsella, R., O'Keeffe, C., Lowthian, J., Clarke, B. and Ellison, M. (2015) *Evaluation of the Whole System Approach for Women Offenders* (Manchester Met University: Online publication)

Figure 3: Number of women by their length of engagement



Source: Julian support monitoring data (N=34, as 19 of the engaged women had data missing on contract dates)

WONDER was implemented to fill a gap in support within the rural areas of Norfolk⁶. The results suggest that WONDER has increased the level of support available and the period of engagement suggests this was required.

Interventions

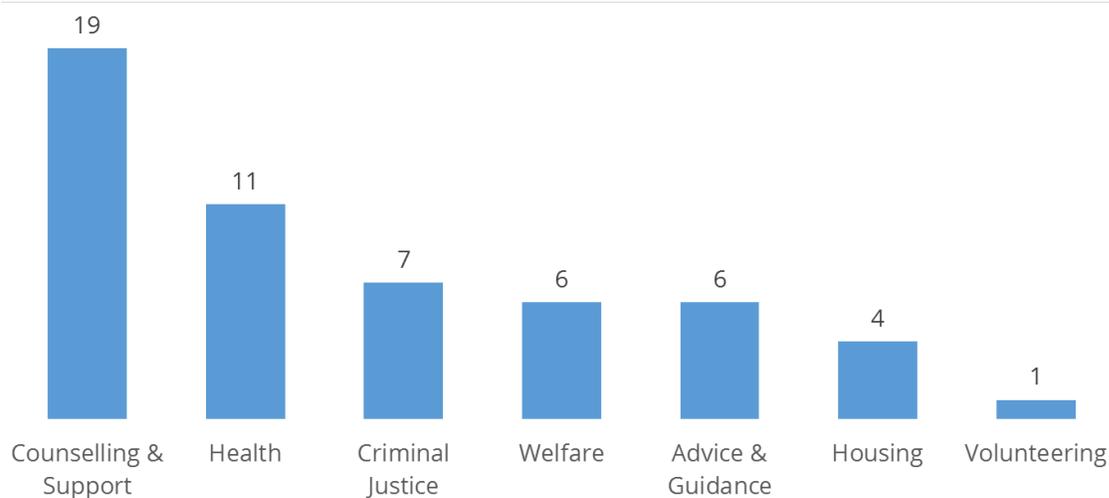
Once a woman was engaged with WONDER and was assessed, she would be referred to services that would address her needs. Improved access to support services was a key element of WONDER's delivery if it were to reduce future offending.

Overall, there was evidence that 45% (n=24) of engaged women were referred to a support service. Of the women who were referred to services, 83% (n=20) had at least one need scored below five compared with 74% (n=14) of the remaining women. This suggests that there the group referred to services had a slightly higher level of criminogenic need but a majority in both groups reported important needs.

Figure 4 describes the types of services to which women were referred.

⁶ From the WONDER bid document

Figure 4: Number of referrals to a type of service



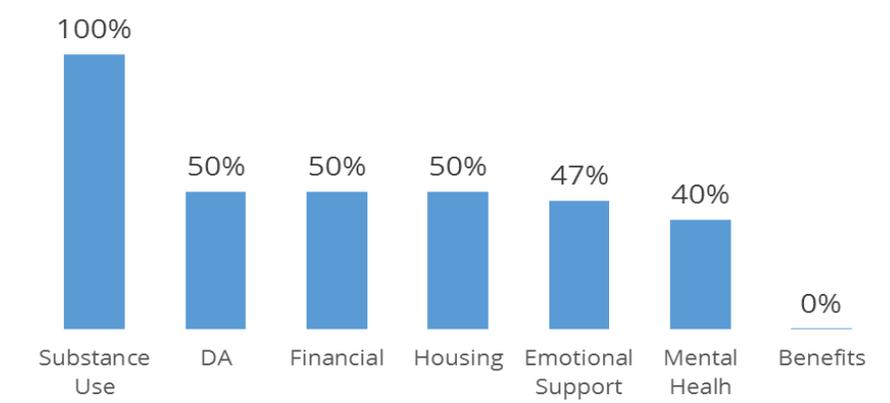
Source: Julian Support Monitoring Data

The largest number, 19, were referred to a counselling and support service and the next largest number, 11, were referred to a health service. This seems appropriate given that substance use was identified as a high need and emotional support was identified as a primary need for many women. However, finance and accommodation were found as high needs in the Justice Star Assessment but referrals to such services seem limited. Delivery staff reported that access to some services was limited in the local area and this had led to long waiting lists or strict qualifying criteria meaning it was difficult to address some women's needs:

"The criteria for qualifying for some services can also be very high too, or it can depend on talking to the right person at the right time on the right day. It's like potluck."

It was not possible to match a service referral directly to an identified need. Figure 45, instead, describes the proportion of women referred to a service by her primary need.

Figure 5: Proportion of women referred to a service by identified need



Source: Julian Support Monitoring Data

A good sign is that 100% of women with substance use received a service referral. However, for the other primary needs no more than 50% of women received a service referral. This might reflect either a lack of local services referred to earlier, referrals being focused on those with the most acute need or women not engaging sufficiently to be referred to appropriate services.

The qualitative data shared suggested that because of WONDER women had become more aware of the services available to them as well the WONDER accessing them on their behalf:

"I didn't realise there were all these out there. Now if I have a problem, I know there will be someone out there to help. I can text [the support worker]."

It is unknown if this extra knowledge meant women accessed services on their own.

Conclusion

The project has identified a group of women who, despite not having a long offending history, are at risk of entering the criminal justice system, and who have support needs. In some cases, the number of support needs reported is high. This is despite low initial engagement from the police custody staff. It appears that lack of available services locally could have limited the potential success of WONDER. Accommodation, finance, and mental health are needs where the OPCC can work to develop better support pathways for women.

The rate of fallout from the project may have reduced the impact of WONDER. Of the 131 women referred to WONDER, 24 were eventually referred to a service (18%). Given

the needs identified, addressing how engagement can be increased and how to monitor the appropriateness of service referral, can improve the project in the future and increase its potential impact. The evidence collected suggested the police custody staff can increase engagement when they understand the role of WONDER and believe a woman will take advantage of it.

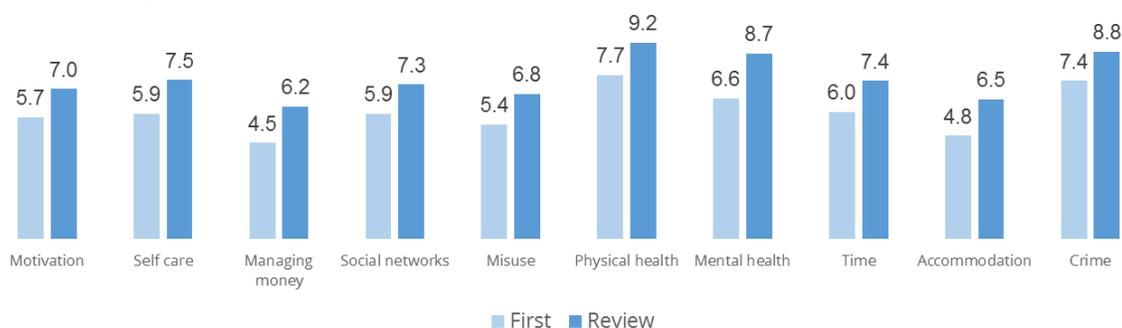
Impact of WONDER

The impact of WONDER was measured by changes in needs and the three and six-month arrest rate.⁷

Needs

The Justice Star assessment was repeated for 24 women. Figure 6 describes their average change in score. All the changes were significant at 95%.

Figure 6: Mean justice star needs assessment scores at first and second assessment



Source: Julian Support Monitoring Data; n = 24

All the needs increased at the second assessment and no needs were on average lower than 5. This suggests the women reported important changes in their life circumstances while supported by WONDER. The largest change was in mental health (2.1 increase), followed by changes in accommodation and managing money (1.7 increase). These are good results given the service referral concerns highlighted in the previous section - 70% of women with two assessments were referred to at least one service.) It was not possible to say that an increase in one need was significantly greater than the increase in another.

The increase in scores was greatest for those who reported greater need to start with and were supported for longer period. Figure 7 below describes the average first and

⁷ 15 women were transferred to the new WONDER+ providers. Their results are not included in this analysis.

review scores for those who were supported for less than 6 months and more than 6 months.

Figure 7: Average Justice Star score at first and review by period of support



Source: Julian Support Monitoring Data; n = 8 (less than 6 months), n=16 (more than 6 months)

The women supported for less than 6 months had fewer support needs. The women who were supported for more than 6 months increased their average score by 2 and rose to a similar level as the women who required less support.

The women described the differences the WONDER project made for them. This included finding new accommodation, reducing dependence on alcohol, reconnecting to children and increases in wellbeing and confidence. The case study below describes the difference the WONDER project made for one woman.

Case study:

W attended court alone for offence of alleged assault and was then referred to the project. Her practical needs were finance – the project helped her access benefits – and accommodation – the project supported her to negotiate that her husband is not added to her tenancy.

In addition, W required emotional support to overcome the mental health impact of past and current domestic abuse. She had begun to abuse alcohol as a coping strategy and consequently children services only allowed supervised contact with her children. The WONDER project referred her to the Norfolk Rehabilitation Partnership and a regular stress control course.

The WONDER project team also support her to work with the MASH and Children's Services to address the domestic abuse and child access issues.

(Source: WONDER project provider)

Re-arrests

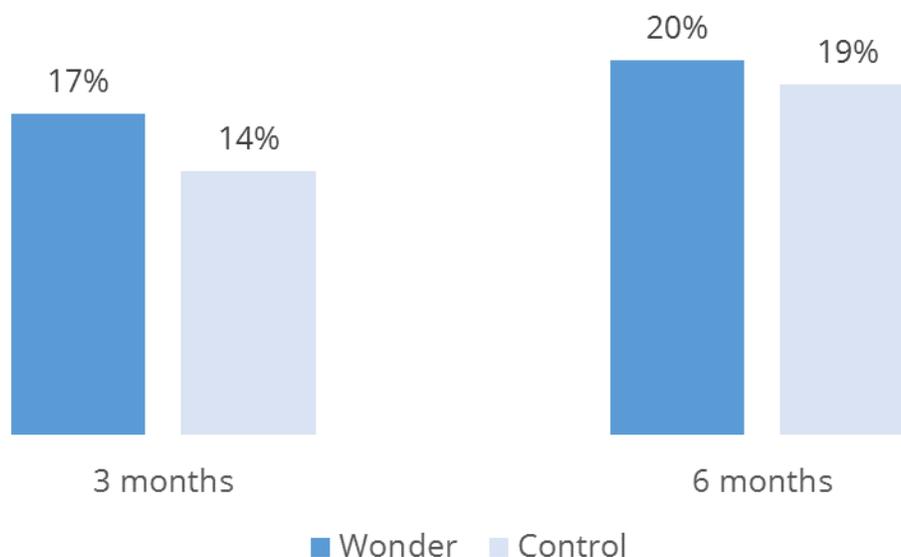
The WONDER project will make an application to the Justice Data Lab to measure proven reoffending. An early indication of impact on offending can come from estimating re-arrest rates. The re-arrest rates of the WONDER cohort⁸ at three and six-months were 15% (n=100) and 19% (n=80). For women who engaged with WONDER the same rates were 13% (n=47) and 16% (n=38), and for those that received a service referral the rates were 13% (n=23) and 18% (n=22). The 6-month arrests rates were similar to that achieved by an adult female triage pilot in Humberside (16%) that reduced rearrests by 46% over a 12 month period⁹.

⁸ The WONDER cohort are women that Julian Support attempted to engage in WONDER.

⁹ Brennan, I., Green, S., Sturgeon-Adams, L. (2015) *An experimental evaluation of an adult female triage pilot project for Humberside Police* (University of Hull: Online publication). It is not known if the pilot supported similar women to those chosen for WONDER. The evaluation team searched for other examples but were unable to find any.

The re-arrest rates were compared to a similar group of women who were arrested in Suffolk (the control group)¹⁰. Eighty women had at least six months of follow up data and 69 of these were matched to women in Suffolk. Figure 8 describes the results.

Figure 8: 3 months and 6 months re-arrest rates for WONDER and the control group



Source: Norfolk & Suffolk Constabularies Crime and Incident Recording; Wonder n= 69, Control n=162

In both cases the re-arrest rate is higher in the WONDER group than in the control group. However, neither of these results are significantly different and therefore there is no evidence that the re-arrest rate is different for the WONDER group.

The WONDER group’s re-arrest rates were also estimated for women that engaged with WONDER and women referred to a service, and the results were compared to the relevant control group matches. This is an indicative analysis for information because it cannot be known who in the control group would have engaged with WONDER if it

¹⁰ An intention to treat design was chosen because we would not know in the Suffolk group who would have engaged with WONDER if they had been offered the intervention. A propensity score matching approach was used to construct the control group matching on offence type, previous offending and involvement in incidents, age, and outcome type. Flowing good practice, more women are in the control group than the intervention group and the results are weighted to reflect this. The Appendix includes a more detailed explanation of the method.

were available to them. The following results should not be interpreted as impact therefore:

- The women who engaged with WONDER's re-arrest rate was 15% within 3 months and 18% within 6 months. For the control group, the equivalent rates were 10% and 20%.
- Of the women who were referred to a service, 15% were re-arrested within 3 months and 20% were re-arrested within 6 months. This compares to equivalent figures of 8% and 19% in the control group.

The 6-month re-arrest rates were similar, though the results suggest that the time to arrest was quicker in the WONDER group. Given that changes in criminogenic need were identified for women who were supported for more than 6 months, an impact on re-arrest and convictions might be expected after 6 months have passed. As such measures of the pattern of re-offending over a 2 -year period, as a desistance approach would encourage, would be better impact measures.

Conclusion

The women who were engaged long enough with WONDER to receive a second assessment showed significant progress in their needs. Across the 10 needs assessed, the average score improved. The number of women, however, who received the full intervention was a minority of all those who were referred to WONDER (23%). Women who were supported for longer had more needs and the needs were successfully addressed. This suggests that resources were targeted at those that need the most support and the criminogenic risk was reduced where needed.

The re-arrest rate was lower for the women who either engaged with or received a service referral, compared with all referrals. No significant impact on re-arrests rates was found when the overall re-arrest rates at three and six months were compared to a control group from Suffolk. Given the rate of fall-out from the project, finding a significant impact on re-arrests was unlikely (all referred women were included in the valid analysis). Impact measures of reoffending over a two-year period might better describe the impact of WONDER.

Recommendations

WONDER project's delivery appears to be good. Many women were referred to the service, the needs assessment revealed a group that had criminogenic need, and from the data available the referral services appear to be generally appropriate. The number of women however who disengaged from the service during their pathway was high and this could have reduced impact on re-arrests, especially given that when women were supported their needs were addressed.

The main recommendation from this evaluation is to implement WONDER+ with high priority User Voice's recommendations to increase engagement with the project.¹¹ An alternative approach would be to increase compulsion to engage because the number of conditional cautions was lower than expected. This course of action, however, might not fit with the OPCCN's preferred role of diversion services.

The following actions are also recommended:

- identify with the WONDER+ evaluators how best to measure and report whether women are following the appropriate pathways. The metrics would measure whether decisions to assess and refer women are appropriate and whether the right services are available for women given their needs;
- consult the police on why fewer conditional cautions were used than expected and identify whether this has implications for the theory of change (as pressure to engage with WONDER+ is not present without them); and
- consider forming improved pathways to address accommodation, mental health and finance needs, and identify why referrals to such services appear to lower despite these being rated the highest needs.

¹¹ User Voice (Unpublished) *The Wonder Project Service User Consultation: Group One Non- Engagement* (OPCCN document)

Appendix: Control Group Method

Designing the control group

GtD understood that Wyndham and Kings Lynn were chosen as the intervention sites as each had a sufficiently large number of women suspects. It was unlikely that we would find a sufficient number of women suspects placed in the custody at the other PICS in Norfolk. Hence we proposed to use Suffolk as the control area. We used the two Suffolk PICS with the largest throughput of women for the control group and match similar women there to the WONDER project women¹².

- Suffolk PICS are Martlesham and Bury St Edmunds

We know that the selection criteria are for referral to WONDER are:

- Female
- Over 18
- Residing in Norfolk Local Authority Area or no fixed abode

We therefore limited the potential control group within the relevant PICS to women over 18 and either resident in Suffolk LA or has no fixed abode.

Propensity Score Matching

We matched the intervention and the control groups using a propensity score matching (PSM) approach. The basic method for PSM is a regression analysis that predicts a woman's propensity to be in the WONDER cohort – from a range of variables. The propensities for each the women in the control group are matched to those in the WONDER group.

The matching process will match exactly on gender and will also match on the following variables:

- Age
- Index offence
- Outcome type (with conditional cautions and cautions collapsed into one because of potential different use across PICS)

¹² If this process did not produce a sufficiently large dataset of women, an alternative would be to sample from all PICS in Suffolk. If this was not sufficient we had the option to sample from the remaining Norfolk PICS as well (excluding those where WONDER has been rolled out in addition to the project being evaluated).

- Offending history (number of arrests, cautions, charges or other positive outcomes within the previous 12 months of starting WONDER. Limited period as records in the Athena database start in Oct 2015)
- Number of previous incidents involved in within the previous 12 months before starting WONDER

These factors are key as they are known to influence selection for WONDER and the risk of reoffending¹³. The geographically distinct control group is used to understand what might have happened without the WONDER intervention.

Different methods of selection are available and will influence the level of balance achieved in the matching process. The method producing the best results in this instance was nearest neighbor matching without replacement with a 3 to 1 ratio¹⁴. A logit model was used to estimate propensity with a caliper of 0.15 standard deviations. This caliper removes matches that are not similar enough by setting the maximum distance that two women can be from each other. Matches exceeding this distance are discarded. The results of the matching are shown in the table below:

Table 1:- Matching results

| | <i>Control group</i> | <i>WONDER group</i> |
|--------------------------|----------------------|---------------------|
| <i>All Records</i> | 311 | 79 |
| <i>Matched records</i> | 168 | 69 |
| <i>Unmatched records</i> | 143 | 10 |

Source: Norfolk & Suffolk Constabularies Crime and Incident Recording

Balance Checking the Matching Results

To ensure the control and treatment groups are balanced – checks can be made to the matches to ensure they have the same distribution of covariates. This can be achieved using histograms and jitter plots, quantile plots as well as reviewing the mean differences between covariates.

¹³ Baker et al, 2004

¹⁴ This ratio was selected to improve precision, it was enabled by the larger control group compared with the intervention.

Figure 3: distribution of propensity scores

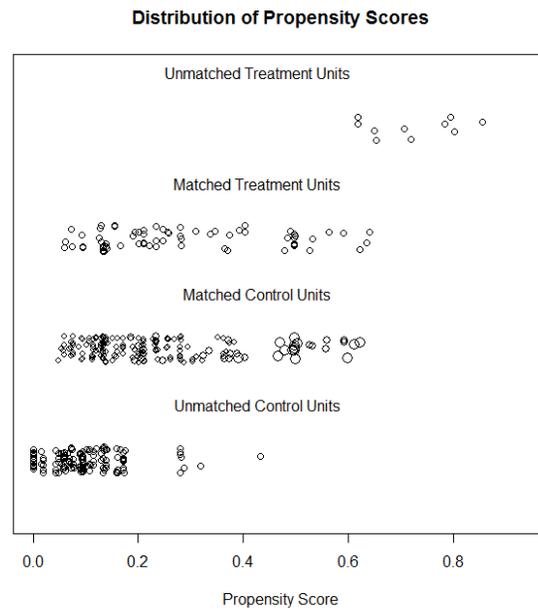


Figure 4: Histograms of propensity scores before and after matching

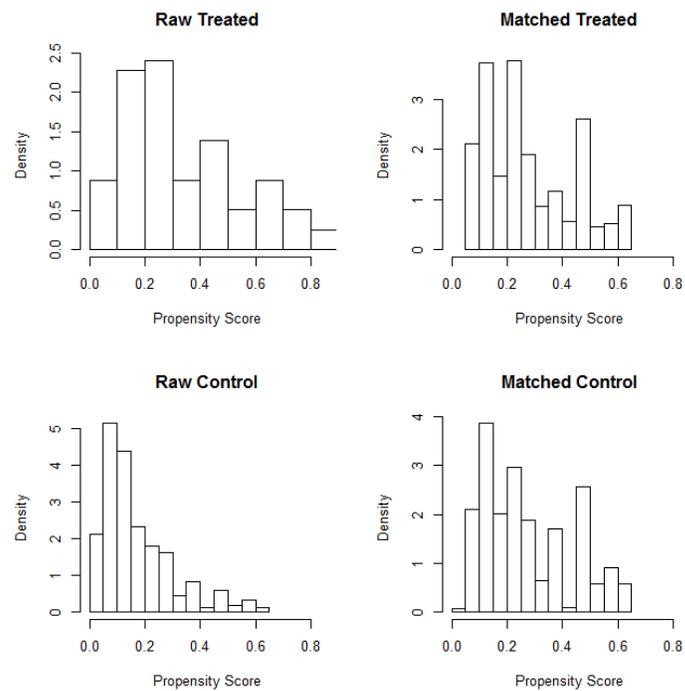
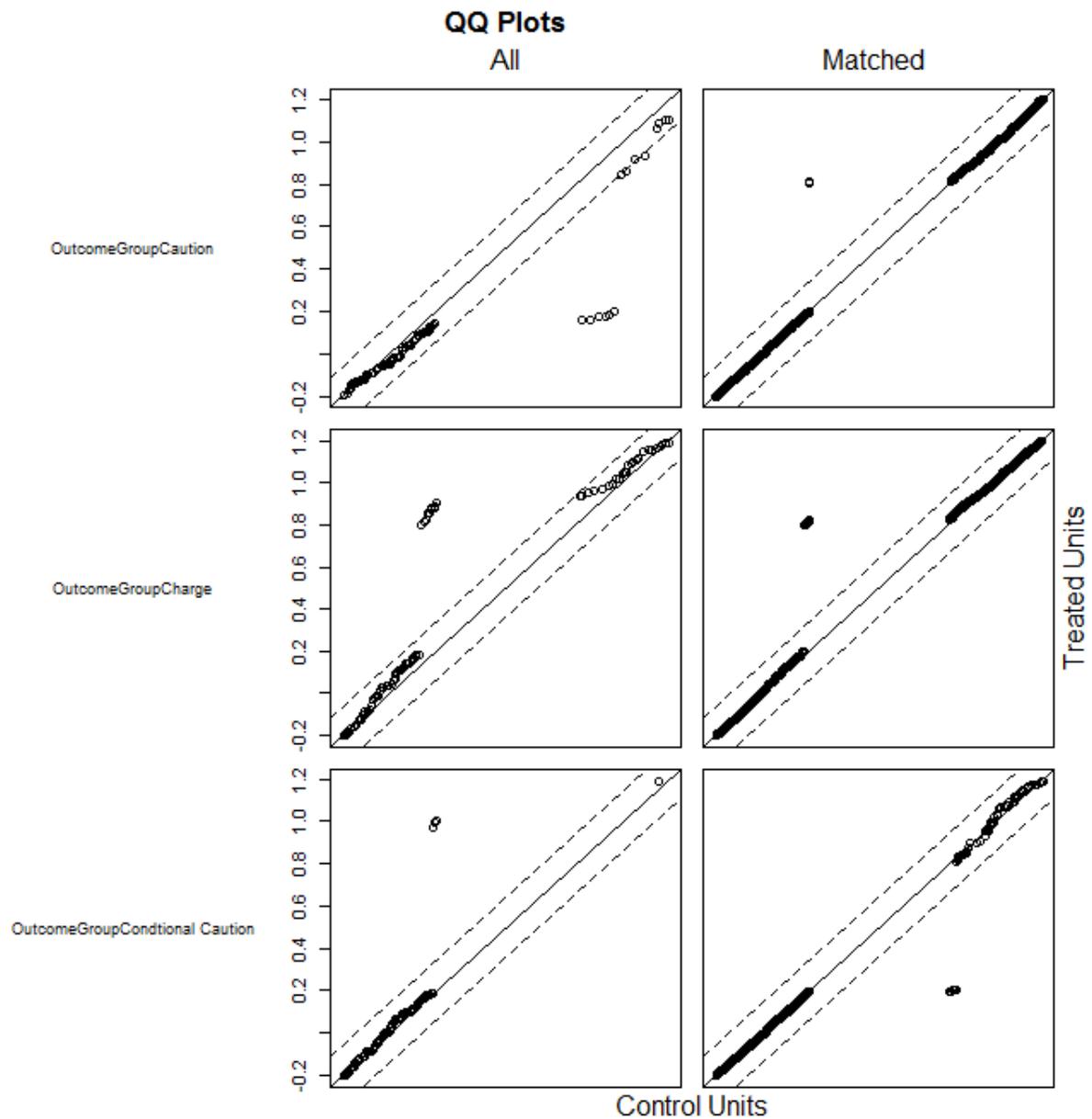


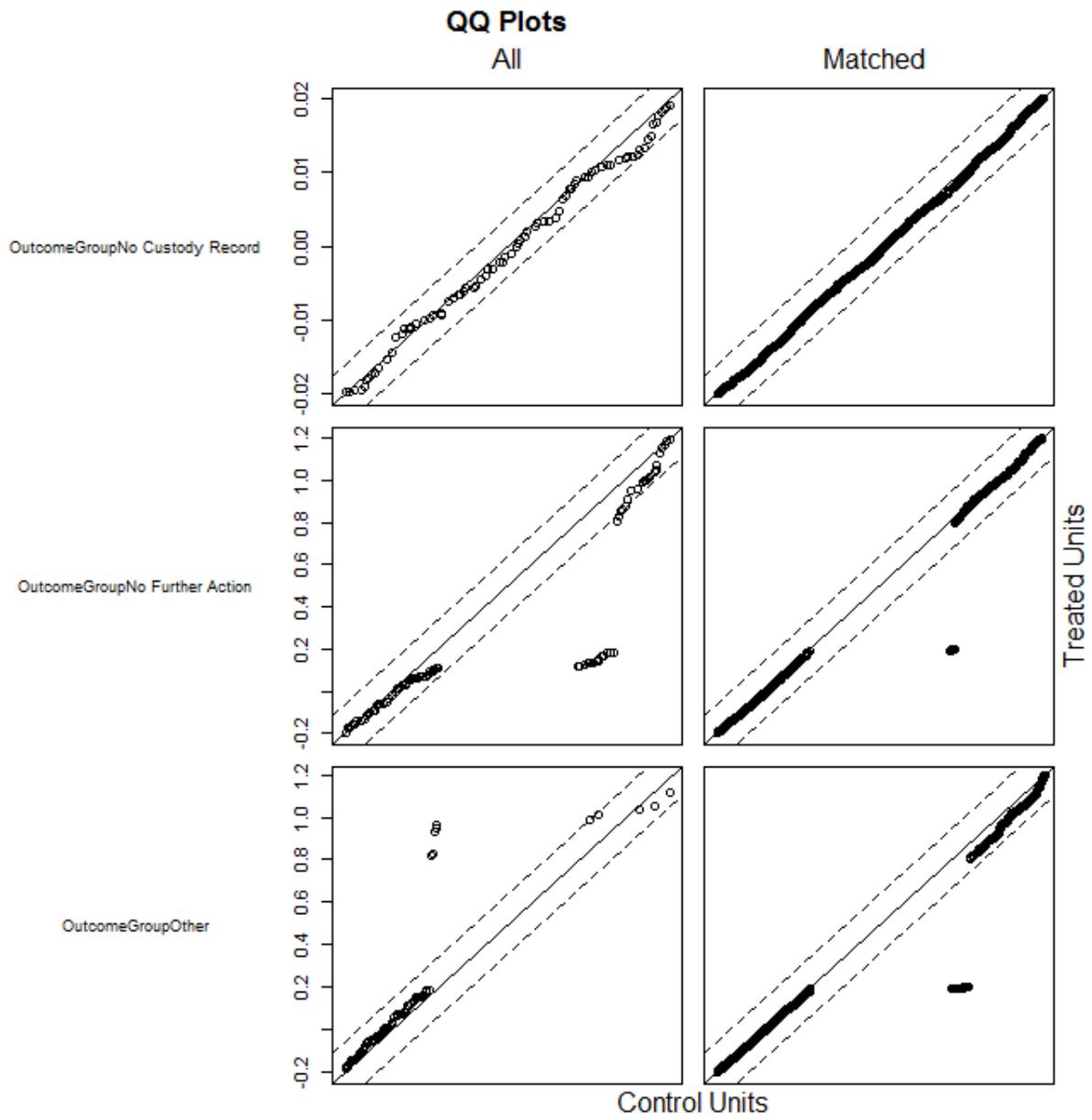
Table 2- Summary of balance for matched data

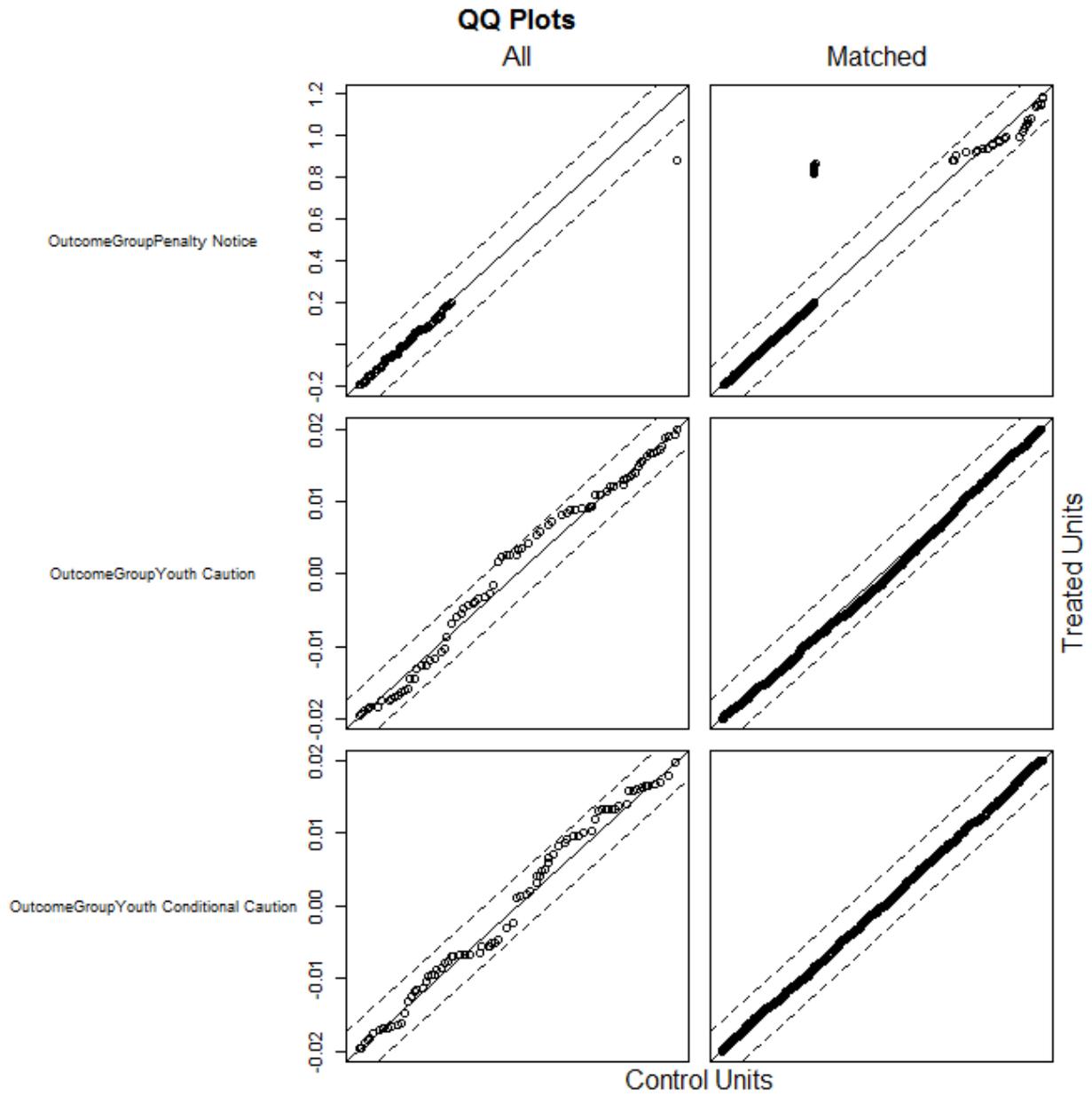
| Variable | | Means Treated | Means Control | SD Control |
|------------------------------|---------------------------|----------------------|----------------------|-------------------|
| distance | | 0.2829 | 0.2759 | 0.1621 |
| Outcome Group | Caution | 0.1159 | 0.1111 | 0.3152 |
| | Charge | 0.4928 | 0.4783 | 0.501 |
| | Conditional caution | 0.029 | 0.029 | 0.1683 |
| | No custody record | 0 | 0 | 0 |
| | No further action | 0.2464 | 0.2488 | 0.4336 |
| | Other | 0.1014 | 0.1208 | 0.3268 |
| | Penalty notice | 0.0145 | 0.0121 | 0.1096 |
| | Youth caution | 0 | 0 | 0 |
| | Youth conditional caution | 0 | 0 | 0 |
| | Index Category | Burglary | 0 | 0 |
| Drug offences | | 0.058 | 0.0821 | 0.2754 |
| Not recorded | | 0 | 0 | 0 |
| Other offences | | 0.1594 | 0.1256 | 0.3324 |
| Public order | | 0.2174 | 0.1957 | 0.3979 |
| Robbery | | 0 | 0 | 0 |
| Sexual offences | | 0 | 0.0072 | 0.0851 |
| Theft | | 0.1449 | 0.1425 | 0.3506 |
| Violence against the person | | 0.3768 | 0.401 | 0.4916 |
| Number of previous incidents | | 0.1739 | 0.1473 | 0.4241 |
| Number of previous crimes | | 0.6522 | 0.6691 | 1.7771 |
| Age | 18-24 | -0.1819 | -0.1894 | 0.2871 |

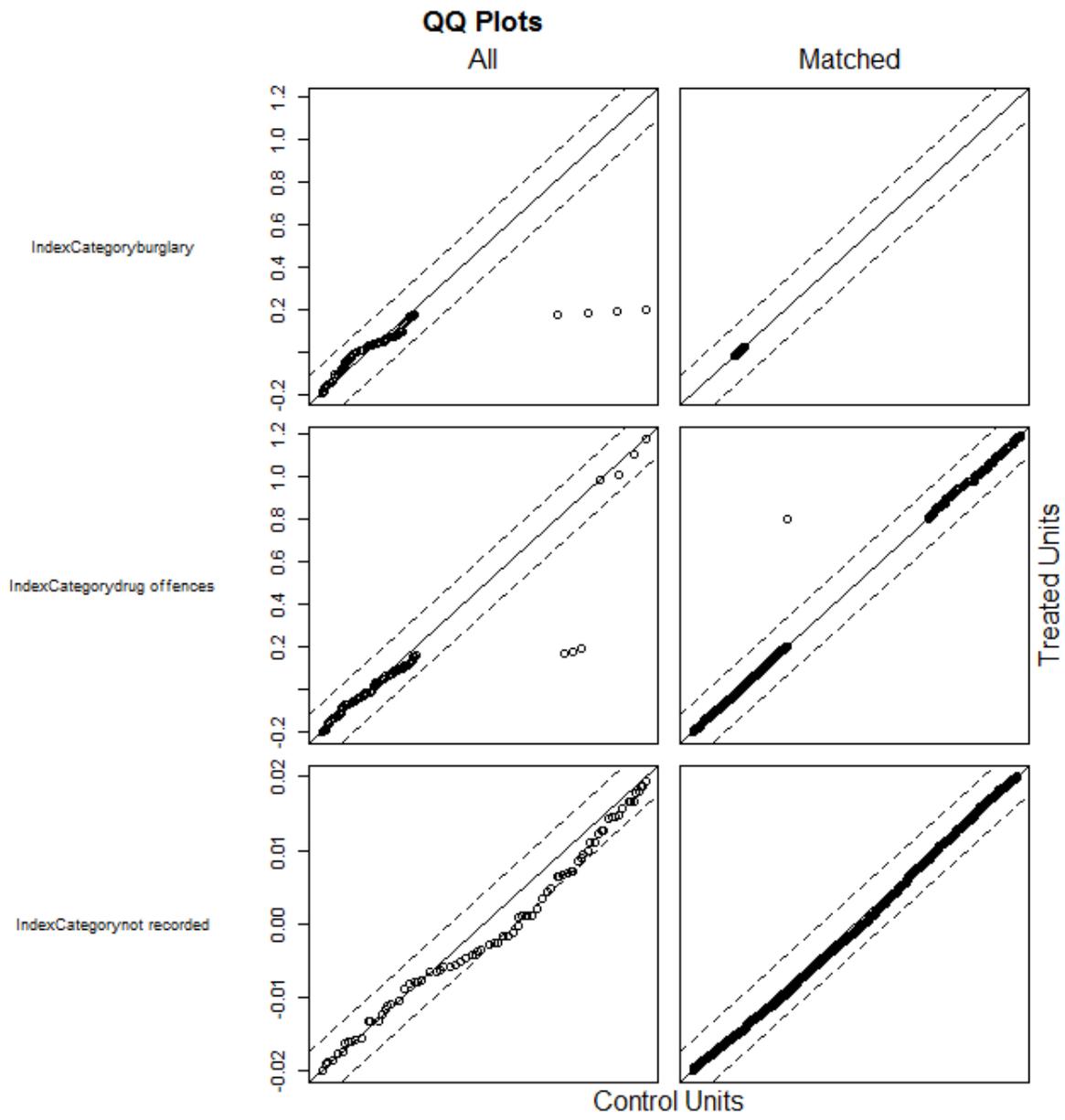
| | | | |
|-------|---------|---------|--------|
| 25-34 | -0.1423 | -0.1399 | 0.351 |
| 35-44 | 0.1296 | 0.1222 | 0.3908 |
| 45-54 | -0.011 | -0.0114 | 0.4385 |
| 55+ | 0.0383 | 0.0574 | 0.4619 |

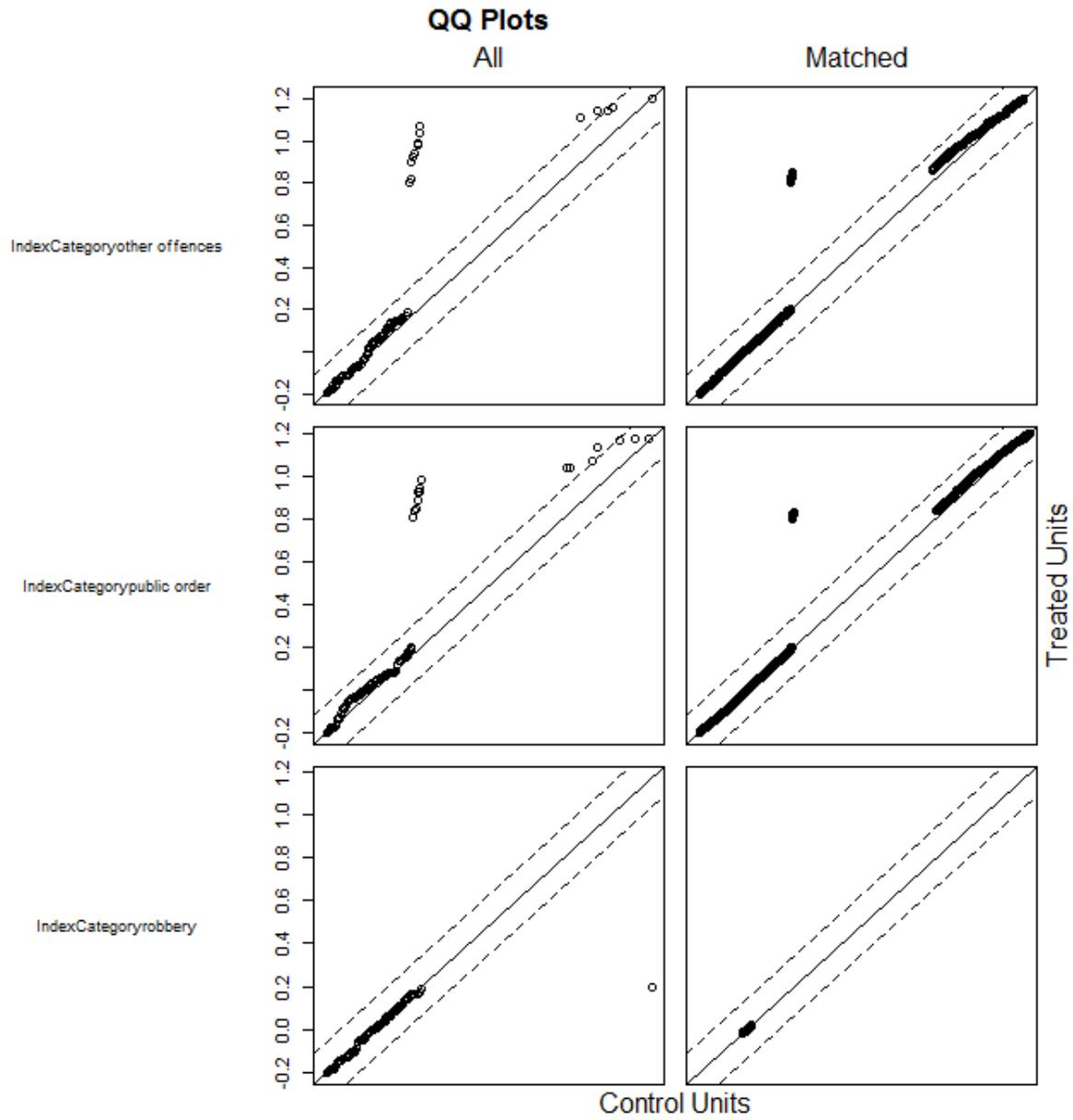
Figure 10: QQ plots of covariates before and after matching

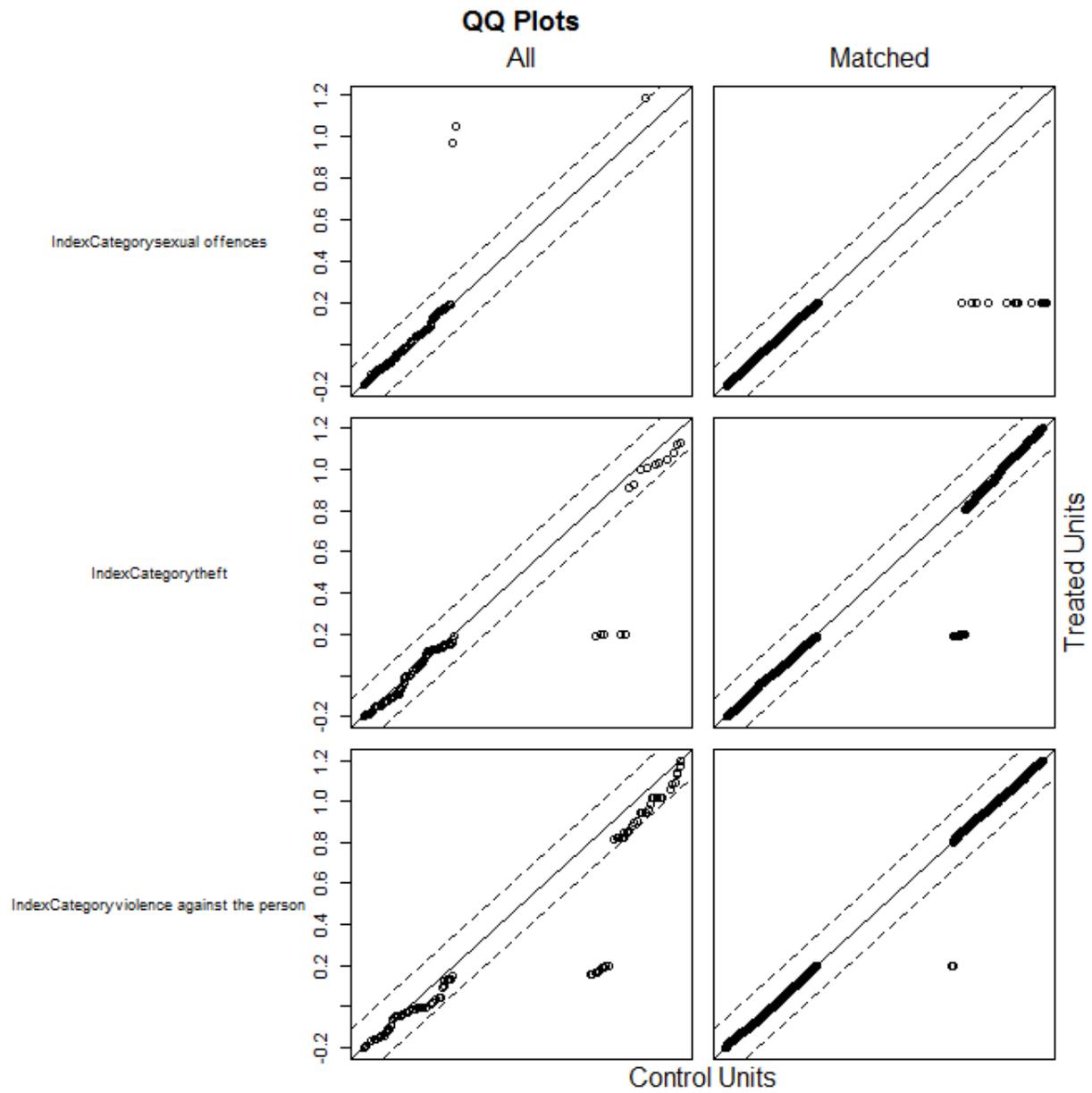


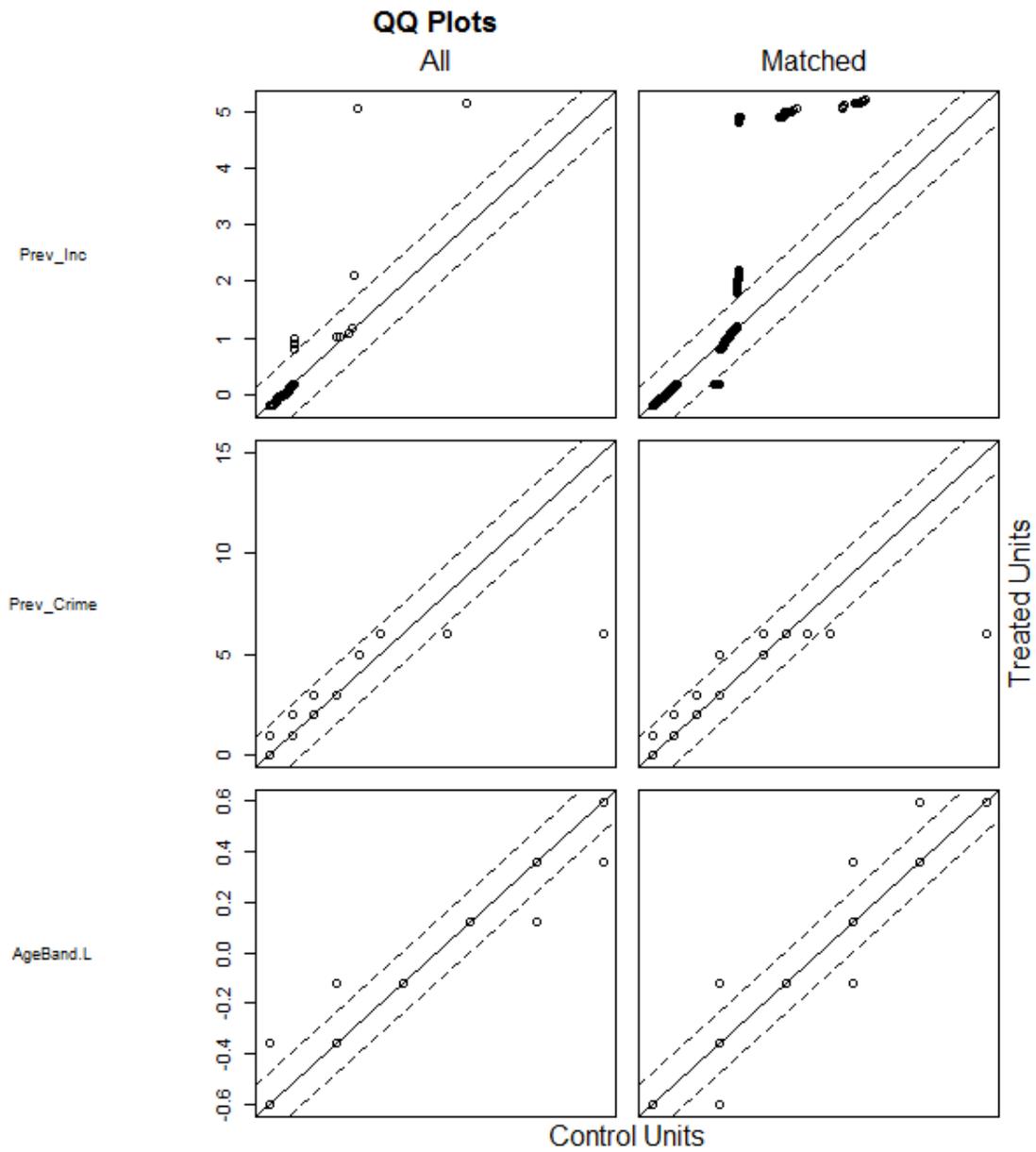


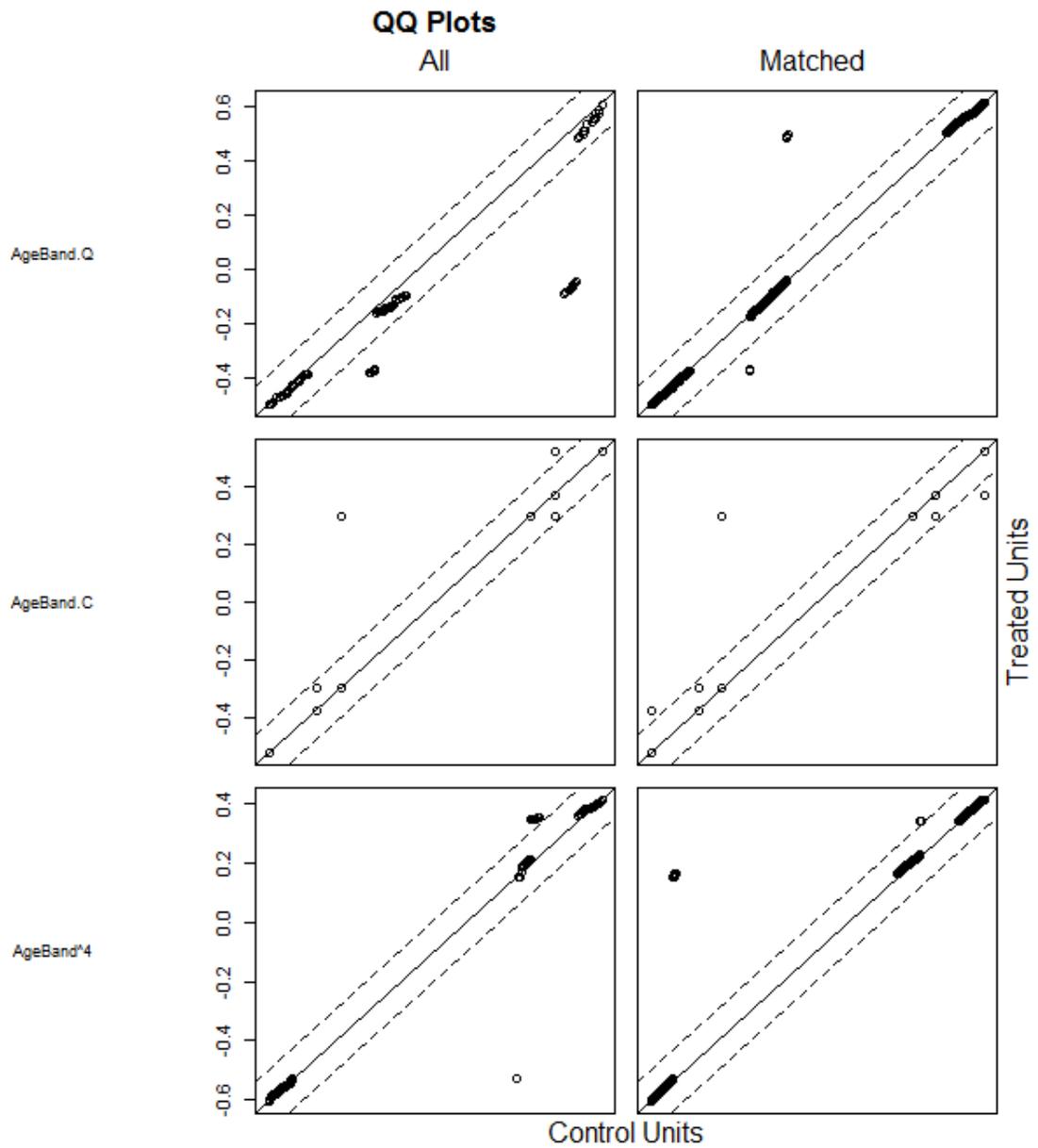


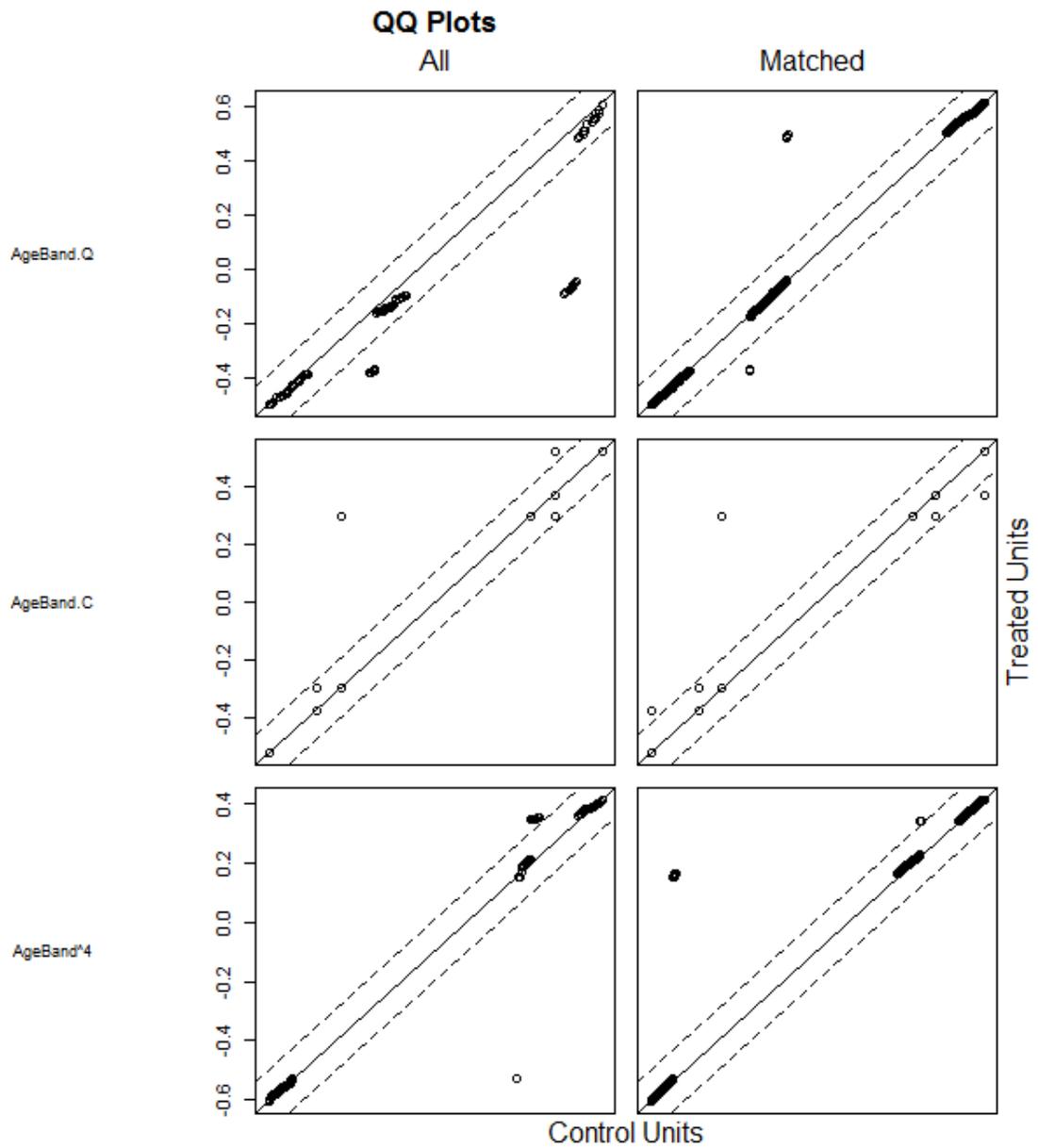


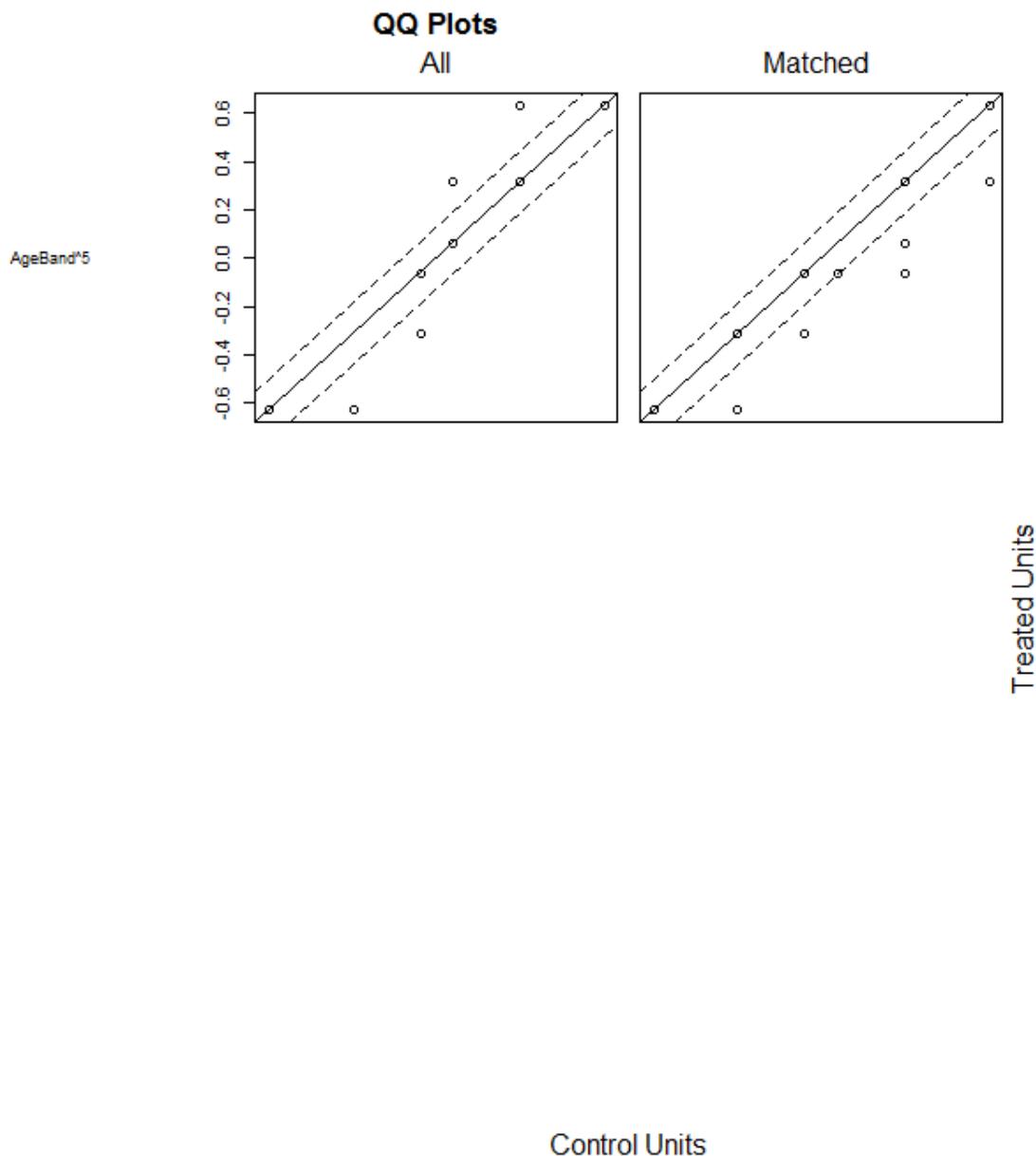












Regression Analysis Output

A conditional logistic regression was used to estimate the treatment effect of WONDER. This method was chosen because the balance statistics suggested that the samples were not sufficiently balanced to allow a McNemar test and the dependence between the two samples needed to be allowed for. Conditional logistic regression on 3-month re-arrest rates:

Below are the results of the logistic regression for the three-month re-arrest rate.

| coef | exp(coef) | se(coef) | z | Pr(> z) | Sig |
|------|-----------|----------|---|----------|-----|
|------|-----------|----------|---|----------|-----|

| | | | | | | | |
|-----------------|---------------------------|-----------|----------|----------|--------|--------|---|
| <i>Wonder</i> | | 7.77E-01 | 2.17E+00 | 4.89E-01 | 1.588 | 0.1123 | |
| <i>Outcome</i> | Charge | -4.35E-01 | 6.47E-01 | 1.15E+00 | -0.377 | 0.7062 | |
| <i>Group</i> | | | | | | | |
| <i>Outcome</i> | Conditional | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | Caution | | | | | | |
| <i>Outcome</i> | No custody | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | record | | | | | | |
| <i>Outcome</i> | No further | -9.24E-02 | 9.12E-01 | 1.32E+00 | -0.07 | 0.944 | |
| <i>Group</i> | action | | | | | | |
| <i>Outcome</i> | Other | -6.12E-01 | 5.42E-01 | 1.48E+00 | -0.415 | 0.6783 | |
| <i>Group</i> | | | | | | | |
| <i>Outcome</i> | Penalty | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | Notice | | | | | | |
| <i>Outcome</i> | Youth | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | caution | | | | | | |
| <i>Outcome</i> | Youth | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | conditional | | | | | | |
| <i>Outcome</i> | caution | | | | | | |
| <i>Group</i> | | | | | | | |
| <i>Outcome</i> | Youth | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | conditional | | | | | | |
| <i>Outcome</i> | caution | | | | | | |
| <i>Index</i> | drug | 7.73E-01 | 2.17E+00 | 1.42E+00 | 0.546 | 0.585 | |
| <i>Category</i> | offences | | | | | | |
| <i>Index</i> | not recorded | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | | | | | | | |
| <i>Index</i> | other | - | 1.30E-01 | 1.26E+00 | -1.625 | 0.1041 | |
| <i>Category</i> | offences | 2.04E+00 | | | | | |
| <i>Index</i> | public order | - | 4.77E-02 | 1.44E+00 | -2.109 | 0.0349 | * |
| <i>Category</i> | | 3.04E+00 | | | | | |
| <i>Index</i> | robbery | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | | | | | | | |
| <i>Index</i> | sexual | 6.75E+01 | 2.03E+29 | 5.83E+04 | 0.001 | 0.9991 | |
| <i>Category</i> | offences | | | | | | |
| <i>Index</i> | theft | - | 3.59E-01 | 1.13E+00 | -0.907 | 0.3644 | |
| <i>Category</i> | | 1.02E+00 | | | | | |
| <i>Index</i> | violence | - | 1.90E-01 | 1.02E+00 | -1.628 | 0.1035 | |
| <i>Category</i> | against the | 1.66E+00 | | | | | |
| <i>Category</i> | person | | | | | | |
| | <i>Number of previous</i> | 1.17E-01 | 1.12E+00 | 5.46E-01 | 0.215 | 0.8301 | |
| | <i>incidents</i> | | | | | | |
| | <i>Number of previous</i> | 2.63E-01 | 1.30E+00 | 1.33E-01 | 1.975 | 0.0483 | * |
| | <i>arrests</i> | | | | | | |

| | | | | | |
|-----------|----------|----------|----------|--------|--------|
| Age 25-34 | - | 1.31E-26 | 3.71E+04 | -0.002 | 0.9987 |
| | 5.96E+01 | | | | |
| 35-44 | - | 1.26E-20 | 2.90E+04 | -0.002 | 0.9987 |
| | 4.58E+01 | | | | |
| 45-54 | - | 6.37E-11 | 1.49E+04 | -0.002 | 0.9987 |
| | 2.35E+01 | | | | |
| 55+ | - | 2.31E-03 | 4.19E+03 | -0.001 | 0.9988 |
| | 6.07E+00 | | | | |

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

The fit statistics were:

- Concordance= 0.811 (se = 0.38)
- Rsquare= 0.079 (max possible= 0.284)
- Likelihood ratio test= 19.54 on 16 df, p=0.2416
- Wald test = 11.55 on 16 df, p=0.7741
- Score (logrank) test = 17.96 on 16 df, p=0.3263

The conditional logistic regression results for the 6-month re-arrest rate are described below:

| | | coef | exp(coef) | se(coef) | z | Pr(> z) | Sig |
|-----------------|-------------------------------------|-------------|------------------|-----------------|----------|--------------------|------------|
| <i>Wonder</i> | | 8.12E-01 | 2.25E+00 | 5.53E-01 | 1.468 | 0.1421 | |
| <i>Outcome</i> | Charge | -5.42E-01 | 5.82E-01 | 1.03E+00 | -0.528 | 0.5974 | |
| <i>Group</i> | | | | | | | |
| <i>Outcome</i> | Conditional | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | Caution | | | | | | |
| <i>Outcome</i> | No custody | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | record | | | | | | |
| <i>Outcome</i> | No further | - | 2.61E-01 | 1.25E+00 | -1.078 | 0.2811 | |
| <i>Group</i> | action | 1.34E+00 | | | | | |
| <i>Outcome</i> | Other | -3.30E-01 | 7.19E-01 | 1.37E+00 | -0.241 | 0.8099 | |
| <i>Group</i> | | | | | | | |
| <i>Outcome</i> | Penalty | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | Notice | | | | | | |
| <i>Outcome</i> | Youth | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | caution | | | | | | |
| <i>Outcome</i> | Youth | NA | NA | 0.00E+00 | NA | NA | |
| <i>Group</i> | conditional | | | | | | |
| | caution | | | | | | |
| <i>Index</i> | burglary | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | | | | | | | |
| <i>Index</i> | drug | - | 1.20E-09 | 1.31E+04 | -0.002 | 0.9987 | |
| <i>Category</i> | offences | 2.05E+01 | | | | | |
| <i>Index</i> | not recorded | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | | | | | | | |
| <i>Index</i> | other | - | 8.89E-10 | 1.31E+04 | -0.002 | 0.9987 | |
| <i>Category</i> | offences | 2.08E+01 | | | | | |
| <i>Index</i> | public order | - | 1.98E-11 | 1.31E+04 | -0.002 | 0.9985 | |
| <i>Category</i> | | 2.46E+01 | | | | | |
| <i>Index</i> | robbery | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | | | | | | | |
| <i>Index</i> | sexual | NA | NA | 0.00E+00 | NA | NA | |
| <i>Category</i> | offences | | | | | | |
| <i>Index</i> | theft | - | 1.13E-09 | 1.31E+04 | -0.002 | 0.9987 | |
| <i>Category</i> | | 2.06E+01 | | | | | |
| <i>Index</i> | violence | - | 2.93E-10 | 1.31E+04 | -0.002 | 0.9987 | |
| <i>Category</i> | against the | 2.20E+01 | | | | | |
| | person | | | | | | |
| | <i>Number of previous incidents</i> | 1.70E+00 | 5.47E+00 | 8.31E-01 | 2.045 | 0.0409 | * |

| | | | | | | |
|------------|-----------------------------------|----------|----------|----------|-------|--------|
| | <i>Number of previous arrests</i> | 8.68E-02 | 1.09E+00 | 2.06E-01 | 0.421 | 0.6739 |
| <i>Age</i> | 25-34 | 5.42E+00 | 2.26E+02 | 7.73E+00 | 0.701 | 0.4834 |
| | 35-44 | 6.88E+00 | 9.74E+02 | 6.86E+00 | 1.004 | 0.3155 |
| | 45-54 | 3.55E+00 | 3.46E+01 | 4.38E+00 | 0.81 | 0.4181 |
| | 55+ | 1.95E+00 | 7.02E+00 | 2.17E+00 | 0.899 | 0.3688 |

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Fit statistics are presented below.

- Concordance= 0.864 (se = 0.381)
- Rsquare= 0.102 (max possible= 0.266)
- Likelihood ratio test= 25.19 on 15 df, p=0.04741
- Wald test = 10.53 on 15 df, p=0.785
- Score (logrank) test = 20.43 on 15 df, p=0.1559