

## 1. TITLE PAGE

**1.1. Title:** A Pilot study of Concerta XL in adult offenders with ADHD

**1.2. Name of test drug:** Oros-methylphenidate (Concerta XL)

**1.3. Indication:** Treatment of attention-deficit/hyperactivity disorder (ADHD) in young adult offenders.

**1.4. Study design:** A 12-week open label pilot study of Concerta XL with dose-escalation to a maximum of 90 mg

**1.5. Study identification:**

EudraCT number: 2012-000517-3

REC number: 12/LO/0787

**1.6. Development phase:** Phase IV study

**1.7. Study initiation date:** 01/03/2013

**1.8. Study end date:** 02/12/2014

**1.9. Sponsor Name:** Co-sponsored by King's College London and South London and Maudsley NHS Foundation Trust

**1.10. Principal Investigator:** Professor Philip Asherson. Institute of Psychiatry Psychology and Neuroscience, SGDP, PO80 Institute of Psychiatry, De Crespigny Park, London, SE5 8AF

**1.11. Co-investigators:**

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- Prof Declan Murphy. Brain Maturation, Institute of Psychiatry, SGDP, PO80 Institute of Psychiatry, De Crespigny Park, London, SE5 8AF

**1.12. Statement of compliance:** The study was performed in compliance with Good Clinical Practices (GCP), including the archiving of essential documents.

**1.13. Date of report:** 28<sup>th</sup> February 2016

**1.14. Protocol amendments**

FINAL VERSION

Version 1.6 6<sup>th</sup> November 2013

PRIOR VERSIONS

Version 1.00 12<sup>th</sup> January 2012, amended 16<sup>th</sup> July 2012

Version 1.1 16<sup>th</sup> July 2012

Version 1.2 20<sup>th</sup> July 2012

Version 1.3 19<sup>th</sup> October 2012

Version 1.4 26<sup>th</sup> March 2013

Version 1.5 20<sup>th</sup> May 2013

## 2. SYNOPSIS

|  |  |
|--|--|
| Title of clinical trial                          | A pilot study of Concerta XL in adult offenders with ADHD  |
| Protocol Short Title/Acronym                     | CIAO project   |
| Study Phase if not mentioned in title            | Phase IV study   |
| Sponsor name                                     | Co-sponsors: King's College London, and South London and Maudsley NHS Foundation Trust   |
| Chief Investigator                               | Prof Philip Asherson   |
| EudraCT number                                   | 2012-000517-37   |
| REC number                                       | 12/LO/0787   |
| Medical condition or disease under investigation | Attention Deficit Hyperactivity Disorder (ADHD)  |
| Purpose of clinical trial                        | To evaluate the effectiveness of Concerta XL in reducing levels of aggression, increasing engagement with educational activities and reducing symptoms of ADHD, in young male offenders with ADHD  |
| Primary objective                                | Primary outcome will be the effectiveness of treatment with Concerta XL to reduce levels of aggression, measured as the number of recorded critical incidents (records of disruptive behaviour) in the prison records.   |
| Secondary objective (s)                          | <p>Secondary objectives will be to estimate the effectiveness of treatment with Concerta XL to increase engagement with educational activities; and decrease symptoms of ADHD and emotional dysregulation.</p> <p>Further analyses will test the mediation hypothesis that changes to symptoms of ADHD and emotional dysregulation mediate reduction in aggressive behaviour and engagement in educational activities.</p> |
| Trial Design                                     | A 12-week open label pilot study of Concerta XL with dose-escalation to a maximum of 90 mg. Following the initial 12-week trial there will be an open label extension with further titration to an optimal dose for each individual participant, for a period of 6-months.   |
| Endpoints  | <p>The primary endpoint will be the number of recorded critical incidents (records of disruptive behaviour) in the prison records in the 3-months prior to the 12-week assessment.</p> <p>Secondary endpoints will be recorded at the 12-week assessment:</p> <ul style="list-style-type: none"> <li>- Ratings of aggressive behaviour by prison and education staffs (Modified Overt Aggression Scale – MOAS).</li> </ul> |

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>- Engagement with education activities over previous 3-months (Number of sessions attended, number of reports of disruptive behaviour in educational sessions).</li> <li>- Symptoms of ADHD (CAARS) and emotional dysregulation (WRAADS).</li> </ul>  |
| Sample Size                                | A total of 100 participants will be recruited into the study.  |
| Summary of eligibility criteria            | Males aged between 18 and 30 years who provide fully informed consent and have a clinical and research diagnosis of ADHD following assessment with the DIVA clinical interview for DSM-IV ADHD.  |
| IMP, dosage and route of administration    | Concerta XL capsules, taken orally, at doses of 18, 36, 54, 72 and 90 mg.  |
| Active comparator product(s)               | None.  |
| Maximum duration of treatment of a Subject | <p>The initial treatment trial (and primary endpoint) is for 12-weeks.</p> <p>The follow up open label extension will add an additional 6-month period.</p>  |
| Version and date of final protocol         | Version 1.6 4th June 2013  |
| Version and date of protocol amendments    | <p>Version 1.00 12<sup>th</sup> January 2012, amended 16<sup>th</sup> July 2012</p> <p>Version 1.1 16<sup>th</sup> July 2012</p> <p>Version 1.2 20<sup>th</sup> July 2012</p> <p>Version 1.3 19<sup>th</sup> October 2012</p> <p>Version 1.4 26<sup>th</sup> March 2013</p> <p>Version 1.5 20<sup>th</sup> May 2013</p>  |
| Date of first enrolment                    | 1 <sup>st</sup> March 2012   |
| Date of last completed                     | 2 <sup>nd</sup> December 2014  |
| Number of patients planned and analysed    | <p>100 participants planned</p> <p>121 participants completed baseline assessments</p> <p>72 participants completed 12-week endpoint assessments</p>   |
| Statistical methods                        | Per protocol and intention to treat analyses were conducted using last observation carried forwards (LOCF). Pre-post changes in primary and secondary outcomes were evaluated using paired t-scores and effect size calculated using Cohen's d   |
| Summary                                    | <p>Overall this study demonstrated the feasibility of conducting clinical trials of ADHD in young adult prisoners. Clinical effects were observed supporting the need for a definitive clinical trial.</p> <p>The primary outcome was the total number of adjudications reported by prison officers in the electronic prison records. The effects were <math>d=0.53</math> using the per protocol analysis but only <math>d=0.29</math> using the ITT analysis. Here the confidence that such change are accounted for</p> |

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|                      | <p>by the study medication is uncertain. Adjudication rates are relatively low and it may be that the prison regime is good at responding to adjudications events once they occur. Taking part in the clinical trial with weekly visits from research staff may further impact in a beneficial way on aggressive or antisocial behaviour. However we did not select on the primary outcome, so adjudications rates could have gone up as well as down. Taking into account the small effect on the primary outcome for the ITT analysis, and the moderate effect in the pp analysis it is clear that no conclusions can be drawn from the analysis here. A larger, placebo controlled trial is required to address this question.</p> <p>With regard to secondary behavioural outcomes reported by prison and education staff, the same arguments apply as for adjudications. No conclusion can be drawn. Overall these positive effects on behavioural outcomes (aggression, antisocial behaviour and engagement with education) indicate the need for a larger definitive trial powered and designed to address these questions.</p> <p>In contrast, the effects on symptoms, particular core ADHD symptoms, but also other domains were substantial, being in the range of <math>d=.5</math> to <math>2</math>. For example if we consider the effect in core ADHD symptoms measured using the investigator rated Conners ADHD rating scale. The results of the single arm open label pilot study show a mean decrease of <math>25.0</math> points with a standard deviation of <math>9.1</math>. This suggested a standardised effect size of <math>d=2.75</math>. It could then reasonably be assumed that at least <math>20\%</math> of this effect might be attributed to the effects of MPH since previous meta-analyses show an average effect around <math>d=0.5</math>.</p> <p>The trial procedures and medication were found to be safe. Titration was to lower doses with no evidence of drug seeking behaviour. Adverse effects were those commonly seen when treating ADHD with methylphenidate. No serious adverse events occurred.</p> <p>Overall this study demonstrated the feasibility of conducting clinical trials of ADHD in young adult prisoners. Clinical effects were observed supporting the need for a definitive clinical trial. The data presented here was successfully used in an application to the National Institute of health Research (NIHR) for a randomised placebo controlled trial of 200 adult offenders with ADHD, following similar procedures to those used here. The study following on from this starts in June 2016.</p> |
| Date of trial report | 28 <sup>th</sup> February 2016  |

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Appendix 2: List of measures used in the study  
Appendix 3: Adverse events log  
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Appendices not included in this report:

Appendix 5: Protocol and protocol amendments  
Appendix 6: List and description of investigators and their CVs  
Appendix 7: Means and SD for all individual variables at each time-point  
Appendix 8: Grant application and protocol funded by National Institute of Health Research,  
that followed from the open trial presented here

## **4. ETHICS**

**4.1. Independent ethics committee (IEC):** The study and all amendments were reviewed and approved by the London and South East Research Ethics Committee.

**4.2. Other approvals:** The study and all amendments were reviewed and approved by the Medicines and Healthcare Products Regulatory Agency and the King's College Research and Development office.

**4.3. Ethical conduct of the study:** The study was conducted in accordance with the ethical principles that have their origins in the Declaration of Helsinki.

**4.4. Patient information and consent:** Informed consent was obtained in three stages as follows:

1. The first information sheet and consent forms asked for permission to use the screening data obtained from all prison inmates. From those inmates already screened (by the healthcare team), consent was obtained retrospectively from as many as could be contacted and agreed for their anonymised data to be used. This allowed us to complete an initial analysis of predicted prevalence of ADHD in young adult prisoners.
2. The second information sheet and consent forms asked for permission to use the clinical interview data (from the diagnostic interview for ADHD) and to link these to prison and medical health records. This enabled us to complete an initial study on ADHD within the prison, whether participants wished to take part in the clinical trial or not. This part of the study (before the clinical trial) estimated the rate of ADHD in the prison.
3. The third information sheet and consent forms asked permission to take part in the clinical trial. This was offered to all those that met the inclusion/exclusion criteria for the clinical trial, following the diagnostic assessments with the diagnostic interview for ADHD.

The information sheets and consent forms are provided in Appendix 1

## **5. INVESTIGATOR AND STUDY ADMINISTRATIVE STRUCTURE**

**5.1. Trial management:** The project was coordinated on a daily basis by Clare Evans (trial research coordinator) supervised by Professor Philip Asherson.

**5.2. Trial management group:** The trial management group provided overall steering of the trial. This group consisted of Professor Asherson (chief investigator), Susan Young and Andrew Forrester (Co-investigators) and Clare Evans (trial research coordinator).

**5.3. Independent oversight:** There was no independent oversight of the study (steering committee or DMEC). It was felt this was not required because of the nature and aims of the trial: an open label pilot study using a recognised first line treatment for ADHD. The protocol was classified as type A (low risk) by the Medicines and Healthcare Products Regulatory Agency (MHRA)

### **5.4. Investigators:**

- Professor Philip Asherson. Responsible for the overall conduct of the study.
- Dr Susan Young. Provided ongoing advice, interpretation and review of the findings.
- Andrew Forrester. Provided ongoing advice, interpretation and review of the findings
- Prof Declan Murphy. Main role in supporting the initiation of the trial
- Dr Thomas Price. Main role in estimating sample size for protocol design. He left Kings

College London early in the study and was replaced by Prof Philip Asherson.

### 5.5. Research assistants

- Clare Evans: clinical research assistant and trial coordinator
- Andrew Baird: research psychiatrist

## 6. INTRODUCTION

### 6.1. Background:

ADHD is characterised by developmentally inappropriate levels of inattentive, hyperactive and impulsive symptoms that are often accompanied by mood instability and lead to clinical and psychosocial impairments culminating in long-term negative outcomes and comorbid disorders. ADHD is a common childhood disorder affecting 3-4% of children in the UK<sup>1</sup>. The disorder persists in two-thirds of cases, with an estimated adult prevalence of 2-4%<sup>2-4</sup>. ADHD occurs at disproportionately high rates in forensic populations, for example in convicted young offenders (~45%)<sup>5</sup>, adult males (~14-30%)<sup>6</sup> and females (~10%)<sup>7</sup>. A recent meta-analysis found an average prevalence among offenders of around 26%<sup>8</sup>.

Failure to recognise and treat ADHD can have a wide-reaching impact on mental health and behaviour, and this is most notable in forensic populations where ADHD is associated with high rates of verbal and physical incidents of aggression and other disruptive behaviours. We previously reported that ADHD accounted for a 6-fold increase in such critical incidents among prison inmates, even after controlling for antisocial personality disorder<sup>6</sup>. This suggests that ADHD itself may lead directly to some forms of disruptive behaviour, potentially linked to difficulties with mood regulation (mood lability/volatile mood states/deficient emotional self-regulation) that are strongly associated with ADHD in adults<sup>9</sup>. Hence, untreated ADHD may explain a significant portion of aggressive behaviour in offenders both in the community and in institutional settings. Furthermore the symptoms of ADHA are known to interfere with both educational and employment activities due to a combination of restless overactivity and impulsivity, and the problems associated with inattention, forgetfulness and problems with self-organisation<sup>10,11</sup>.

Within forensic settings, the violent behaviour associated with ADHD significantly impacts on the quality of life of the individual, but also on forensic services and society more widely as these individuals can be caught up in the 'revolving door' of the criminal justice system. However, ADHD is a treatable condition with the most recent NICE guidelines<sup>11</sup> concluding that stimulant medication (methylphenidate or dexamphetamine) and atomoxetine provide cost-effective treatments for the control of ADHD symptoms in adults. Nevertheless ADHD often remains unrecognised and untreated, which means that known effective treatments for ADHD (and potentially also for the co-occurring challenging behaviours) are not provided. The NICE guidelines for ADHD highlighted the extent of this unmet need and the requirement to establish effective services for the diagnosis and treatment of ADHD in adults, to prevent both immediate and longer term impairments. Thus, we envisage that medical treatments used for ADHD in the general population will be effective in reducing *both* the core symptom of ADHD and some of the aggressive/antisocial behaviour and problems with engagement with educational activities associated with ADHD in forensic populations. To date, however, these questions have not been investigated among young offenders in the United Kingdom (although rates of ADHD will undoubtedly be high in this group) and there is very limited guidance from international research.

### 6.2. Standard clinical care for adults with ADHD

In this study we proposed to evaluate the treatment of ADHD in a prison population of 18-30 year olds, using a standard treatment for ADHD. At the time the study started there were no medications licensed for the first time treatment of ADHD when the diagnosis is made for the first time in adulthood. This has since changed with marketing authorisation for first time use

in adults allowed for atomoxetine and lisdexamfetamine. The medication used in this clinical trial, Concerta XL, was however licensed for continued use in adults when ADHD was first diagnosed and treated during childhood or adolescence. In this study we proposed to include participants who met the clinical criteria for ADHD whether this was first recognised and treated during childhood and adolescence or not. The use of Concerta XL as an unlicensed treatment for ADHD when diagnosed for the first time in adults was standard clinical care in the UK. This is supported by guidelines from the British Association of Psychopharmacology (2006) and the National Institute of Health and Clinical Excellence (2009). The titration protocol that we proposed was designed to match best clinical practice as recommended by NICE. The dose is within the limits outlined by NICE. The British National Formulary (63, March 2012) states that *for over 18 year olds the dose is initiated at 18 mg, then increased at weekly intervals according to response, to a maximum of 108 mg.* The risks associated with this study are therefore not expected to be higher than standard medical care for this patient group.

## **7. STUDY OBJECTIVES**

**7.1. Study design:** To conduct an open label pilot study of an extended release formulation of methylphenidate (Concerta XL) on aggression, in young male offenders with ADHD aged 18-30. The primary outcome measure was change in disruptive behaviour as recorded in the prison records (number of critical incidents defined as total number of adjudications reported in prison records). Secondary outcomes included measures of engagement with educational activities reported by staff within the prison educational programme; measures of aggressive behaviour collected using a behavioural report by prison and education programme staff, and the number of recorded reports of disruptive behaviour reported by the educational programme staff.

Changes were measured using measures of ADHD and emotional dysregulation, that previous research has shown responds well to methylphenidate with an average effect size of around 0.5. This included ratings of the DSM-IV ADHD items from the observer version of the Connors Adult ADHD rating scale (CAARS-O); and the associated symptoms of 'emotional dysregulation' from the Wender-Reimherr Adult Attention Deficit Disorder Scale (WRADDS).

Further analyses explicitly test the mediation hypothesis that change in symptoms of ADHD and emotional dysregulation mediate changes in aggressive behaviour and engagement with educational activities; and provide estimates of the extent of any mediation effects (partial or complete mediation of the behavioural problems).

Dose escalation from 18 mg to a maximum of 90 mg was intended to maximise the effect of the medication on ADHD symptoms levels while limiting potential adverse effects.

### **7.2. The main hypotheses tested were:**

- (1) That ADHD is found in high rates among young male offenders aged 18-30 (the initial stages of the project allow prevalence estimates for the disorder among the prison population to be estimated).
- (2) That treating ADHD with Concerta XL will lead to reductions in aggressive behaviour within the prison setting.
- (3) That treating ADHD with Concerta XL will lead to increased engagement with educational activities within the prison setting.
- (4) That treatment with Concerta XL will lead to reductions in ADHD symptoms within the prison setting. These changes will be similar in magnitude to those reported in previous clinical and prison populations of adults with ADHD.

(5) That treatment with Concerta XL will lead to reductions in symptoms of emotional dysregulation. These changes will be similar in magnitude to those reported in previous clinical trials of the effects of stimulants on symptoms of emotional dysregulation.

(6) That the ADHD symptoms and emotional dysregulation symptoms will show strong co-variation during the treatment response.

(7) That change in symptoms of ADHD and emotional dysregulation will mediate changes in the measures of aggression and engagement with educational activities.

## **8. THE INVESTIGATIONAL PLAN**

**8.1. Overall study design:** A 12-week clinical trial consisting of open label treatment with Concerta XL in young male offenders meeting diagnostic criteria for ADHD. Young offenders meeting the inclusion/exclusion criteria for the study and providing fully informed consent for participation, after discussion of the study protocol (and up to 4-weeks to consider whether to participate or not) were treated with Concerta XL. The study medication was started at a dose of 18 mg for the first week, and subsequently increased by weekly increments of 18 mg, to a maximum dose of 90 mg.

**8.2. Setting:** The trial took place at HMPYOI Isis, which is in the Belmarsh prison cluster. This is a relatively new prison which opened in 2010 and holds sentenced young male adults and category C offenders. There are two house blocks with mixed single and double cells and the operational capacity was measured at 480 in August 2010. HMPYOI Isis has a broad based curriculum for young sentenced prisoners and available activities include mechanics, construction, bicycle repair, catering, broadcasting, job related studies and offending behaviour interventions. It therefore has a rehabilitation and resettlement emphasis, and all prisoners are offered a full time occupation.

**8.3. Assessment schedule:** Assessments were performed at baseline, weekly during the first 5-weeks of the trial (weeks 1-5), then again at weeks 8 and 12. Following the end of the 12-week trial there was a 6-month open label extension trial following individual titration of the dose, with further evaluations at 3 months and 6 months. However we did not complete all 3 and 6 month evaluations as planned.

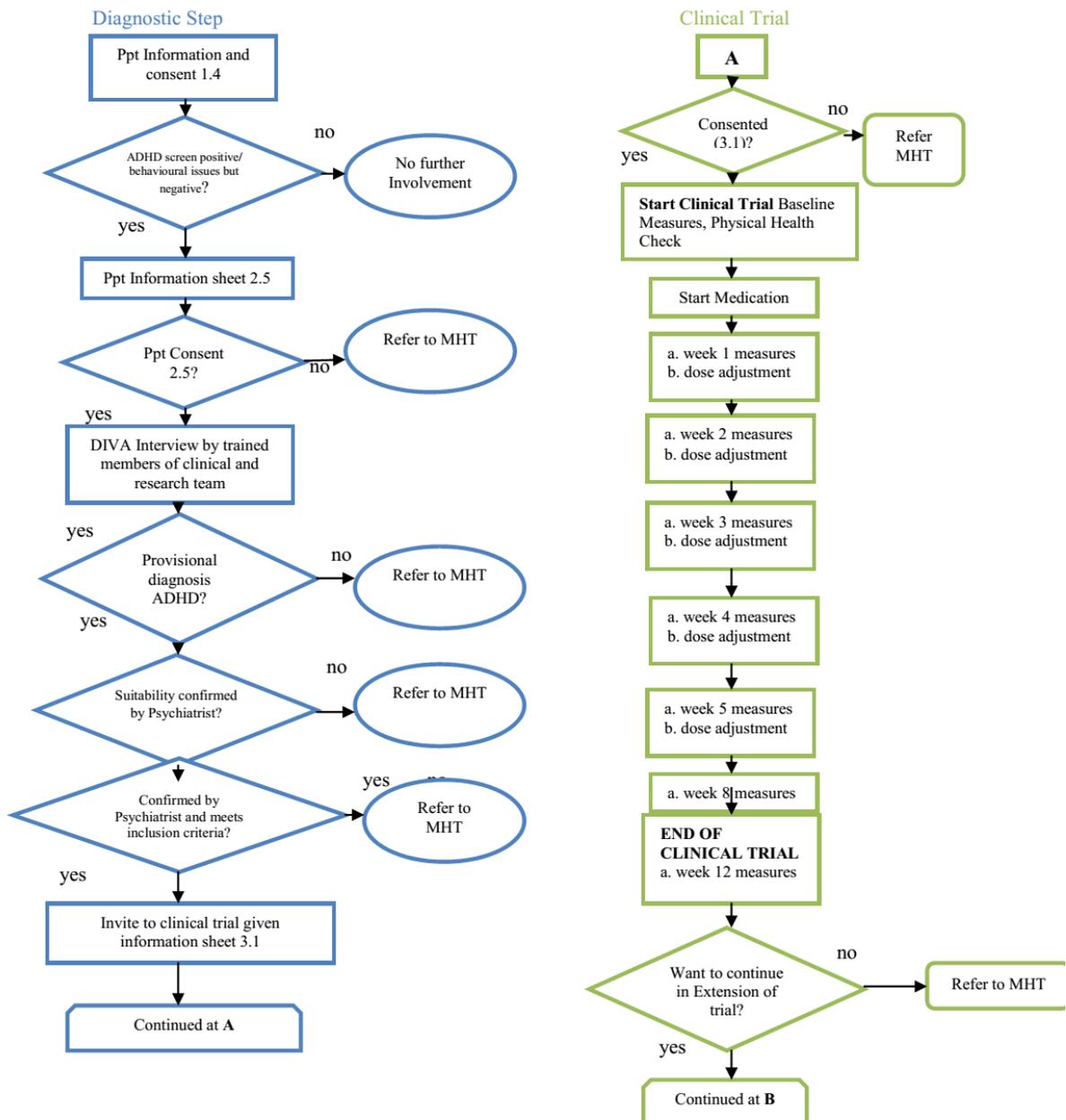
**8.4. Titration process:** Treatment was started at an initial dose of 18 mg for 1 week, and then increased weekly in 18 mg increments to a maximum of 90 mg (i.e. 18 mg, 36 mg, 54 mg, 72 mg, and 90 mg). Medication dose was not increased if in the opinion of the clinician (or the participant) there were minor adverse effects that could be exacerbated at a higher dose. Medication was reduced by 18 mg if there was a limiting adverse event, in which case there were no further increases in medication for the duration of the trial. Titration upwards was stopped once all ADHD symptoms were scored as negligible or absent (score of 0 or 1 on all items of the CAARS). Participants with limiting adverse events from 18 mg of Concerta XL were withdrawn from the trial.

**8.5. The Primary outcome:** The primary outcome was the change in the number of recorded critical incidents (records of disruptive behaviour) in prison records from baseline to 12-weeks. Each measurement point (baseline and 12-weeks) reflected behaviour over the previous 3-months (reported in units of 1-month). For cases of individuals new to custody presenting with significant behavioural problems linked to ADHD, the retrospective baseline reporting period was reduced to their reception date at HMP/YOI Isis to the date of the baseline assessment.

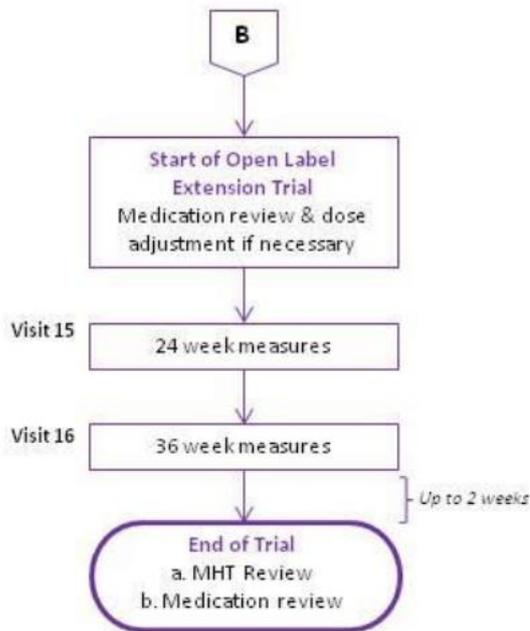
**8.6. Secondary outcomes:** These included further measures of aggression, engagement with educational activities and ADHD and Emotional Dysregulation. A full list of baseline and outcome measures is listed in 2.

- Ratings of aggressive behaviour by prison and education staffs (Modified Overt Aggression Scale – MOAS)
- Engagement with education activities over previous 12-weeks (Number of sessions attended, number of reports of disruptive behaviour in educational sessions).
- Symptoms of ADHD (CAARS)
- Symptoms of Emotional Dysregulation (WRAADS).

## 8.7 Study Flow chart



## Extension Trial



**8.8. Trial visits:** This is a single arm protocol. The visits and decision points delineated in the flow diagram are described in more detail below:

|                    |  |
|--------------------|--|
| Diagnostic Step:   |  |
| Screening step     | ADHD screening measure(s) completed by prison mental health team and research team, consent obtained. Used for initial identification of potential cases of ADHD within the prison. Individuals that screen positive for ADHD invited to take part in a diagnostic interview for ADHD either as part of the research protocol, or otherwise by the healthcare team as part of their usual treatment program. |
| Visit 1            | Information sheets reviewed with potential participants by a member of the mental health or research team, for the first part of the study.  |
| Visit 2            | Consent for first part of study obtained. This was signed at the end of Visit 1, or after a period of time (no time limit), if potential participants wish to take more time.<br><br>Once consent signed, an appointment was made for a clinical diagnostic interview. Patients who did not wish to proceed with the study referred back to the clinical care team for further follow-up.                    |
| Visit 3            | Diagnostic assessment completed by the mental health or research team, using the Diagnostic Interview for ADHD (DIVA interview).   |
| Mental health team | For those that met DIVA diagnostic criteria for ADHD, a senior clinical psychiatrist (specialist registrar or higher grade) with training in the diagnosis of  |

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| review          | ADHD, and working with the prison mental health team, reviewed the diagnostic information to confirm/refute the diagnosis having considered potential comorbid diagnoses and differential diagnoses. If the patient is thought to meet criteria for the study an appointment will be arranged with one of psychiatrists.  |
| Visit 4         | Assessment by psychiatrist for final confirmation of the diagnosis and check of all inclusion and exclusion criteria for the study. Potential participants that met entry criteria for the clinical trial given the information sheet and consent form.   |
| Clinical trial: |   |
| Visit 5         | The content of the information sheet was discussed and the study explained. This visit usually occurred at the end of Visit 4.  |
| Visit 6         | Information sheets reviewed and consent obtained for clinical trial.  |
| Visit 7         | Start of Clinical Trial. Baseline data collected from participants (including physical health checks), prison records and members of staff. Trial prescription completed once all baseline data completed and given to pharmacy. Medication should start within 1-week of Visit 7.  |
| Visit 8         | 1-week after start of medication, dose adjusted. Pulse, blood pressure and Adverse Events Scale. Further 1-week prescription.   |
| Visit 9         | 2-weeks after start of medication to complete CAARS-O, and adjust medication. Pulse, blood pressure and Adverse Events Scale. Further 1-week prescription.  |
| Visit 10        | 3-weeks after start of medication to complete CAARS-O and adjust medication. Pulse, blood pressure and Adverse Events Scale. Further 1-week prescription  |
| Visit 11        | 4-weeks after start of medication to complete CAARS-O and adjust medication. Pulse, blood pressure and Adverse Events Scale. Further 1-week prescription.   |
| Visit 12        | 5-weeks after start of medication to complete CAARS-O, WRAADS, ALS and QbTest (optional) measures. Pulse, blood pressure and Adverse Events Scale. Further 7-week prescription.   |
| Visit 13        | 8-weeks after start of medication to complete CAARS-O, WRAADS, ALS and QbTest (optional). Pulse, blood pressure and Adverse Events Scale.   |
| Visit 14        | 12-weeks after start of medication to repeat baseline measures (see chart on p. 19 for list of measures at this time point).<br><br>Start of open label extension study. Medication reviewed by clinician and changes made if the clinician considers adjustments would be beneficial to the participant, following discussion with the participant and agreement on further changes. |
| Visit 15        | 3-months after start of open label study  |
| Visit 16        | 6-months after start of open label study  |

## 8.9. Trial Medication

**8.9.1. Investigational Medicinal Product:** The study uses usual commercial stocks of Concerta XL, supplied as 18 mg and 36 mg capsules. Capsules have the dose in mg written in small writing in the side of the capsule; 18 mg capsules are yellow and 36 mg capsules are white. Packaging will be as for usual commercial stock and separated out and labelled using usual pharmacy procedures for each participant. Prescriptions will be provided, signed off by medical members of the research staff, on standard pharmacy prescription forms used in the prison. These will be provided weekly for the first 5-weeks, to allow for titration procedures to be followed; then provided for 7-weeks at the maintenance dose. Trial medication will be given out by the prison pharmacy to the healthcare nurses, to store and dispense from the pharmacy hatches based on the two house blocks. Prisoners will be observed taking the trial medication and will not be given medication to take away.

**8.9.2. Dosing Regimen:** Treatment started at an initial dose of 18 mg for 1 week, and be increased weekly in 18 mg increments to a maximum of 90 mg (i.e. 18 mg, 36 mg, 54 mg, 72 mg, and 90 mg). Medication will be reduced by 18 mg if there is a limiting adverse event, in which case there will be no further increase in medication for the duration of the trial. Titration upwards will be stopped if all 18 ADHD symptoms are scored as negligible (score of 0 or 1 on the CAARS) or absent. Participants with limiting adverse events from 18 mg of Concerta XL will be withdrawn from the trial. A maximum dose of 90 mg included for this trial because previous clinical trials have indicated that a proportion of adults respond better at higher doses without unacceptable levels of adverse events; and because current licensing for Concerta XL up to 54 mg is based on dose levels for children and adolescents, rather than adults. NICE recommend a daily dose of methylphenidate in adults to a maximum of 100 mg per day<sup>11</sup> and for Concerta XL the British National Formulary (No 62, September 2011) recommends doses up to a maximum of 108 mg in adults.

**8.9.3. Drug Accountability:** All aspects of treatment and accountability for managing the medication storage and delivery managed locally by the prison pharmacy and mental health team, as per standard HMPYOI practice for this. IMP accountability recorded and verified.

**8.9.4. Subject Compliance:** All aspects of treatment compliance and recording of treatment administration/refusal managed by the prison mental health team and locally by healthcare staff as per standard practice for this site.

**8.9.5. Concomitant Medication:** All concomitant medications recorded. Use of the following medications in the 4-weeks prior to the start of treatment with Concerta will lead to exclusion from the clinical trial, based on potential adverse drug interactions:

- Clonidine
- Coumarins
- Monoamine oxidase inhibitors
- Moclobemide
- Rasagline

**8.9.6. Randomisation Procedure/Code Break:** This was an open trial with no randomisation procedure

## 9. DISCUSISON OF STUDY DESIGN

There was limited prior experience of treating young adult prisoners meeting diagnostic criteria for ADHD in the United Kingdom. Within HMYOI Isis, ADHD was rarely diagnosed or treated prior to this trial. There was no commissioned diagnostic or treatment service for ADHD. The study was established with several overarching aims, with the intention of

generating sufficient pilot data to support the application for funding of a definitive randomised controlled trial. The main aims were to evaluate feasibility, safety and provide a preliminary assessment of treatment effects. We therefore started with a screening and diagnostic phase, designed to screen all young adult offenders within the prison, and to establish the rate of ADHD following gold standard diagnostic procedures. We then invited all prisoners meeting the study inclusion and exclusion criteria into an open label treatment trial that followed the most common procedures for treating adults with ADHD in the UK, adhering closely to NICE guidelines (2008). In effect the trial was designed to evaluate common outcomes, following an approach that was very close to treatment as usual. We were particularly interested to evaluate the potential for treatment effects on behaviour within the prison setting, rather than the ADHD, so selected as the number of adjudications (prison reports of bad or aggressive behaviour) as the primary outcome.

The open trial design allowed a preliminary evaluation of the process of delivering a standard medication to a group with complex needs, behavioural and mental health problems. The study was run as an open label trial so that the study team would become familiar with the process of titrating onto treatment, evaluating participant responses to the treatment protocol and the level of support they required and evaluation of risk and compliance to treatment with the prison settings.

The open trial design limits any conclusions about effectiveness, but did provide for the first time an evaluation of the pre-post treatment outcomes for patients being treated with OROS-methylphenidate within a prison setting in the UK. The study design does not allow strong inferences to be drawn about the levels of recruitment or retention for a future placebo controlled study. A further limitation was that for this pilot study we did not attempt to retain individuals in the study if they dropped out of treatment leading to a substantial amount of missing data at the endpoint, potentially inflating clinical effects, particularly for per protocol analyses.

## **10. SELECTION OF STUDY POPULATION**

**10.1. Selection of Participants:** Participants were recruited from HMPYOI Isis, Western Way, Thamesmead, SE28 0EB. Screening questionnaire data collected by the prison mental health team will be used to identify those who screen positive for ADHD. Patients who screen positive will be invited to take part in the clinical trial if they meet diagnostic criteria for ADHD following a research diagnostic interview and clinical review by the prison mental health team and meet all inclusion and exclusion criteria.

### **10.2. Inclusion Criteria**

- Male
- Aged between 18 and 30 years.
- English speaking.
- Able to provide informed consent to participate (understand the protocol and make an informed decision taking into account pros and cons of study participation).
- Meet clinical diagnostic criteria for ADHD following screening questionnaires for ADHD and diagnostic interview using the DIVA interview. DSM-IV criteria, revised to take into account recommendations from NICE and proposed DSM-V criteria, will use the following criteria:
  - 6 or more symptoms of ADHD in either the inattention or hyperactivity-impulsivity symptom domains as children.
  - 4 or more symptoms of ADHD in either domain as adults.
  - Where it is not possible to gain sufficient clinical information to score childhood symptoms of ADHD, the operational criteria will be adapted to include evidence

- of some significant symptoms with impairment starting before the age of 12 years, and 6 or more symptoms currently with significant impairment currently.
- Persistent trait like (non-episodic) course of symptoms.
  - Impairments in two or more clinical or psychosocial domains and two or more settings from symptoms of ADHD.
  - Onset of symptoms before the age of 12 years (following recent national and international guidelines).
  - Symptoms of ADHD not secondary to another medical or mental health condition.

### **10.3. Exclusion Criteria**

- Lack capacity to give informed consent
- Moderate or severe learning disability (defined as IQ < 65)
- Not English speaking
- Serious risk of violence to the researcher
- Pure inattentive subtype, with 2 or less symptoms of hyperactivity-impulsivity
- Pure hyperactive impulsive subtype, with 3 or less symptoms of inattention
- Current major depression, psychosis, mania, and episodic hypomania as part of bipolar II disorder
- Past history of bipolar I or schizophrenia
- Contraindications to the use of stimulants (glaucoma, hypertension, cardiovascular disease or structural heart problem).

### **10.4. Withdrawal of Subjects**

Participants had the right to withdraw from the study at any time for any reason. Healthcare staff had the right to withdraw patients from the trial if they considered the trial was having an adverse effect on the participants. For patients who decided to withdraw from the study, all efforts were made to report the reason for withdrawal as thoroughly as possible. Anyone withdrawn from the clinical trial was reviewed by the prison healthcare team to ensure their safety.

Participants with limiting adverse effects from 18 mg of Concerta XL during the first week of the clinical trial were withdrawn from the trial. When this occurred they were replaced with another participant. All participants informed that they had the right to withdraw from the study at any time. For participants who withdrew, the patient data used was from the date of withdrawal of the study carried forward. Participants who withdrew from the study were not replaced with the exception of intolerance to 18 mg of Concerta in the initial 1 week of the study.

**10.5. Protocol deviations:** The Adverse Effects Scale (AES) data was not collected at the baseline visit. This was a deviation from the protocol that did not present a risk to patients, or impact on the scientific aims of the protocol. The AEs was collected at all other data collection points. The omission of the baseline data means that we cannot make any inference about the presence of adverse effects prior to starting medication.

## **11. TREATMENTS**

**11.1. Treatments administered:** The study used usual commercial stocks of Concerta XL, supplied as 18 mg and 36 mg capsules. Capsules have the dose in mg written in small writing in the side of the capsule; 18 mg capsules are yellow and 36 mg capsules are white. Packaging was as for usual commercial stock and separated out and labelled using usual pharmacy procedures for each participant. Prescriptions were provided, signed off by medical members of the research staff, on standard pharmacy prescription forms used in the prison. These were provided weekly for the first 5-weeks, to allow for titration procedures to be followed; then provided for 7-weeks at the maintenance dose. Trial medication was given

out by the prison pharmacy to the healthcare nurses, to store and dispense from the pharmacy hatches based on the two house blocks. Prisoners will be observed taking the trial medication and will not be given medication to take away.

**11.2. Dosing:** Treatment was started at an initial dose of 18 mg for 1 week, and then increased weekly in 18 mg increments to a maximum of 90 mg (i.e. 18 mg, 36 mg, 54 mg, 72 mg, and 90 mg). Medication dose was not increased if in the opinion of the clinician (or the participant) there were minor adverse effects that could be exacerbated at a higher dose. Medication was reduced by 18 mg if there was a limiting adverse event, in which case there were no further increases in medication for the duration of the trial. Titration upwards was stopped once all ADHD symptoms were scored as negligible or absent (score of 0 or 1 on all items of the CAARS). Participants with limiting adverse events from 18 mg of Concerta XL were withdrawn from the trial.

**11.3. Treatment Compliance:** Participants are given medication daily by the health care team nursing staff. They observe and record when medication is taken on a daily basis. Medication was taken between 08:00 - 12:00.

**11.4. Concomitant medication:** All concomitant medications recorded. Use of the following medications in the 4-weeks prior to the start of treatment with Concerta will lead to exclusion from the clinical trial, based on potential adverse drug interactions: Clonidine, Coumarins, Monoamine oxidase inhibitors, Moclobemide and Rasagline.

## **12. EFFICACY AND SAFETY MEASURES**

**12.1. Primary Effectiveness Parameters:** The primary outcome parameter was the change in the number of recorded critical incidents (records of disruptive behaviour) in prison records from baseline to 12-weeks. Each measurement point (baseline and 12-weeks) will reflect behaviour over the previous 3-months.

**12.2. Secondary Effectiveness Parameters:** These include the following baseline to 12-week difference scores. See Appendix 2 for complete list of measures.

- Ratings of aggressive behaviour by prison and education staffs (Modified Overt Aggression Scale – MOAS).
- Engagement with education activities over previous 3-months (number of sessions attended, number of reports of disruptive behaviour in educational sessions).
- Symptoms of ADHD (CAARS).
- Symptoms of Emotional Dysregulation (WRAADS).

**12.3. Procedures for Assessing Efficacy Parameters:** The WRAADS is an investigator rated scale, following an assessment interview. This will take around 10 minutes. Other data from participants was collected using self-rated assessment scales, apart from the cognitive performance test (QbTest), and the observer rated ADHD symptoms (CAARS-O) and Clinical Global Impression scale (CGI). The self-rated questionnaires take around 40 minutes to complete; the CAARS-O and CGI take around 25 minutes.

QbTest is a 20 minute computer administered attention test that is done in front of a computer screen. During the test a high resolution infrared camera monitors the movement of the patient and measures activity, attention and impulsivity calculated based on the performance on the task and level of activity. The data are then processed and compared with a normative group of the same age and sex. Key outcome variables are reaction time mean, reaction time variability, omission errors, commission errors, anticipatory responses and measures of activity level. The prisoners with ADHD found the test difficult to complete, with much of the data being of poor quality. Analyses of these data are ongoing and are not presented in this report.

**12.4. Assessment of Safety:** Patients were monitored daily by the prison mental and healthcare teams. Safety checks were conducted in line with NICE Guidelines (2008):

1. Checks before commencing treatments: pulse and blood pressure; and review of pre-study health checks.
2. Any evidence of cardiovascular abnormalities evaluated for risk and if necessary an opinion obtained from a cardiologist prior to commencing treatment (not required).
3. The clinical team check pulse and blood pressure once a week and whenever there is a dose change. After 1-month, the cardiovascular checks will be completed at 8 and 12 weeks.
4. Other safety checks included monitoring of common adverse events during assessments using adverse events scale. In addition, participants were monitored daily by prison staff and any potential adverse events will be reported to the prison healthcare and mental healthcare teams.

**12.5. Specification, Timing and Recording of Safety Parameters:** With regards to the research aspect of the study (i.e. obtaining follow-up data) there is little risk to participant safety. Participants will be aware that should they wish to withdraw from the study they may do so. Participants who become upset or distressed by the questions in the research were offered support by the researchers and by the prison mental health team.

The healthcare team followed national guidelines on safety, which is predominantly related to monitoring of cardiovascular function. More specifically the clinical care followed these procedures:

1. Checks before commencing treatments pulse and blood pressure and review of healthcare records.
2. Potential cardiovascular abnormalities will be evaluated for risk and if necessary an opinion obtained from a cardiologist prior to commencing treatment.
3. The clinical team will check pulse and blood pressure once a week and whenever there is a dose change. After 1-month, the cardiovascular checks will be completed during the 8, 12, 24 and 36 week assessments.
5. Other safety checks will include monitoring of adverse events during assessments. In addition, participants will be monitored daily by prison staff and any potential adverse events will be reported to the prison healthcare team.

**12.6. Data quality assurance:** The electronic report forms allowed on possible responses. All data was entered immediately preceding completion on any given day. All data entered was done so by one member of the research team and checked for accuracy by another.

### 13. STATISTICAL METHODS

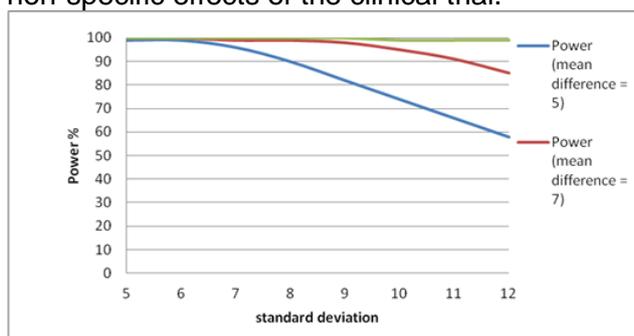
**13.1. Sample Size:** The study was designed as an open clinical trial with a single open treatment arm. The main objectives were to provide preliminary data on the effects of a star treatment for ADHD on aggression, within the prison setting. These data will be used to estimate the effects on the primary and secondary outcomes, explore the mediation model (where reductions in ADHD symptoms are hypothesised to lead to reductions in aggression), and generate feasibility data for future randomised clinical trials (RCTs) of the effects of treatments for ADHD on important behavioural outcomes within prison settings.

We proposed a sample size of 100 which is well powered to detect changes in ADHD symptoms and emotional dysregulation within an open study design. Based on previous controlled studies of methylphenidate versus placebo, we estimated that the likely reduction in ADHD and emotional dysregulation scores to be between 18 (using the WRAADS scores) in a methylphenidate treatment group and 13 in a placebo group (changes from 45 at baseline to 27 and 32 respectively; Figure 2, Rösler et al., 2009<sup>12</sup>). The estimated difference in treatment effect between two arms in a placebo controlled trial would therefore be 5 points. We have assumed that the intraindividual change scores have a standard deviation similar to that of measure at baseline, namely 7 (Table 1, Rösler et al., 2009<sup>12</sup>). This is however a conservative estimate, because in a previous study, 25% of the subjects in the placebo arm dropped out due to non-efficacy of treatment, so that these figures likely over-state the reduction of symptoms in the placebo group and there may be more variability in the data with larger standard deviations.

In the study here, where there is no placebo arm, we expected to generate larger effect sizes at baseline versus endpoint measures, due to the additional non-specific effects of the treatment protocol. However we have powered the study for effects on the proposed mediator (ADHD symptoms and emotional dysregulation) of the effects on aggression, based on the Rösler study.

Figure 1 shows power curves assuming standard deviations ranging from 5 to 25 and alpha = 0.05 for the difference between baseline and endpoint measures. This indicates that over a wide range of parameters we have sufficient power to detect mean differences of 5 or more points on WRAADS scores. This indicates that we have a very high level of confidence in detecting significant baseline to outcome effects on ADHD symptoms and emotional dysregulation.

Determining power for the potential effects on aggression and other outcomes, such as engagement with educational activities, is far more difficult to estimate. The effect size is unknown and estimates of effect size on the behavioural problem measures are one of the primary outcomes of this study – that will then be used for designing a fully powered randomised controlled trial, to estimate the size of the specific effects from drug treatment and separate these from non-specific effects of the clinical trial.



**Figure 1:** Power estimates for mean differences of 5 and 7, by standard deviation

**13.2. Analysis plan:** Analyses were conducted planned to be conducted by Tom Price (statistician). We planned an interim analysis at the half way stage of the planned study (when data from approximately 50 participants were available for the primary endpoint). If these are sufficient to address the main aims of the study (dependent on the effect size on the primary and secondary measures) the trial may have been ended at this point – and further funding sought to initiate a controlled trial.

The main Intention to treat (ITT) analyses will be the changes in scores for the primary and secondary outcomes measures from baseline to endpoint at 12-weeks; using paired T-scores. Effect size is estimated as the difference in the baseline versus endpoint means scores divided by the standard deviation of the change scores. For ITT analyse the last observation carried forward (LOCF) approach was taken. Additional analyses using the ITT and per protocol approaches included:

- Estimates of the effect size for WRAADS inattention, hyperactivity-impulsivity and emotional-dysregulation subscales, separately.
- Change in DSM-IV ADHD items

For secondary analyses that seek to investigate the co-variation of one variable with another during the treatment process (e.g. ADHD with critical incidents), or to consider mediating hypotheses (e.g. that any effects on critical incidents are mediated by change in measures of emotion dysregulation) will use a per protocol approach. These include all analyses designed to investigate the co-variation of one variable with another during the treatment process. Hypotheses to be tested here include the following:

- Change in critical incidents correlates with change in emotional dysregulation
- Change in emotional dysregulation is correlated with change in ADHD symptoms
- Change in critical incidents is mediated by change in ADHD symptoms.

**13.3. Change in the conduct of the study or planned analyses:** This study was designed as an open label pilot study of an extended release formulation of oros-methylphenidate (Concerta XL) designed to look at the aggression in young male offenders with ADHD aged 18-30. This clinical 12-week trial aimed to titrate 100 participants on to Concerta XL to an optimal dose (of between 18mg to 90mg, balancing effectiveness against potential adverse effects) during the first 5-weeks, with a maintenance phase for the following 7-weeks. The 12-week trial was then planned to be followed by an open label extension for 6-months.

The high drop-out rate by 12-weeks (see below) led to a decision to extend the recruitment above 100 cases, to aim for 100 according to the per protocol analysis. This decision was made by the project management group. The extension trial was abandoned at the end of the trial as funding was not available for the continued follow-up. This was felt to be reasonable since the main aims of the study had been achieved during the 3-month study, as planned. This decision was made the study management group.

We have not yet completed analysis of the QbTest data. This is being quality checked by a PhD student and will be made available during 2016.

## 14. STUDY PATIENTS

**14.1. Disposition of patients:** The trial took place at HMP YOI Isis which is part of the Belmarsh prison cluster. It is a relatively new prison that opened in 2010 with two house blocks and a focus on resettlement and rehabilitation. When work began at Isis, the prison's operational capacity was 402 male inmates between the ages of 18-25. By completion 620 offenders aged of 18-30 were housed within the walls, with a constant flow of releases and transfers in and out.

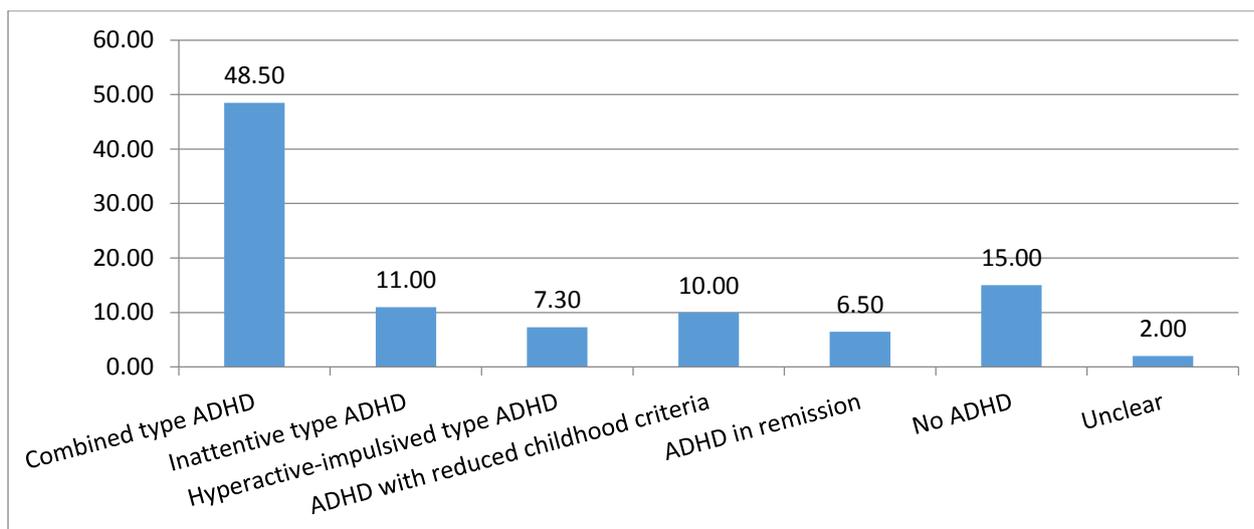
Prior to starting the research and throughout the process, screening questionnaires for ADHD were administered by the research team, with the assistance of healthcare staff, to all prison inmates. A total of 1922 inmates were screened via the Barkley Adult Current ADHD 18 point questionnaire over the course of two years. The screener is a self-report questionnaire based upon current (past 6 month) DSM ADHD criteria (9 in each domain of inattention and hyperactivity/impulsivity), and uses a 4-point rating scale to indicate the frequency of symptoms ('never/rarely', 'sometimes', 'often' and 'very often'). The Barkley Symptom scale offers a total symptom count for the Inattentive and Hyperactive/Impulsive domains (0-9 for each; based on 'often' and 'very often' endorsements only). The cut-off criterion applied to this study was four or more ADHD symptoms for either domain. We applied this relaxed cut-off of 4 symptoms (as opposed to the DSM-IV criteria of 6 or the DSM-5 criteria of 5 symptoms) because all those with positive symptom endorsement at this stage were then offered a full diagnostic interview. The lower cut off rate was intended to increase sensitivity at the screening stage.

Individuals that screened positive for ADHD (n=473) were offered a clinical diagnostic interview and a psychiatric review for ADHD. The Diagnostic Interview for ADHD (DIVA), followed by a clinical review by a Psychiatrist was offered to all those that met initial screening criteria for ADHD or had been referred by the prison with behaviours suggestive of ADHD. Three hundred and ninety eight individuals agreed to take part at this stage and consent was gained to examine demographic and assessment details.

Participants receiving a clinical assessment (n=398) were all male, between the age of 18 to 30 years and with ethnicity classified as white n=183 (46%), Asian n= 26 (7%), Black n=108 (27%), Mixed Race n=61 (15%), Other Ethnicity n=16 (4%) and Missing Ethnicity n=4 (1%).

The Diagnostic Interview for ADHD in Adults (DIVA; Kooij et al, 2005) administered to this group is a semi-structured clinical interview that evaluates each of the 18 DSM ADHD symptom items for both current and childhood symptoms, as well as asking additional questions to establish whether impairment exists and age of onset. We initially applied adapted DSM-IV criteria of 6 symptoms in Inattentive and/or Hyperactive/Impulsive domains in adulthood and childhood, with onset prior to age 12 and impairment in at least two areas. With the release of the new DSM-5 criteria, we lessened the symptom level in adulthood to 5 to reflect changes. In this particular study we also applied a more relaxed inclusion criterion whereby if participants scored 6 or more symptoms in adulthood with clear impairment but symptoms in childhood were unclear, they were still diagnosed with ADHD if there was overall evidence that they showed inattentive, hyperactive and impulsive behaviour as children. For example in cases who could not recall the details of their childhood behaviour a judgment was made as to whether current ADHD symptoms were a continuity of symptoms and impairments that started during childhood. In such cases efforts were made to contact family members to shed light on childhood symptom presence, but where this was not possible, participants with current symptoms and impairment were not penalised for recall issues.

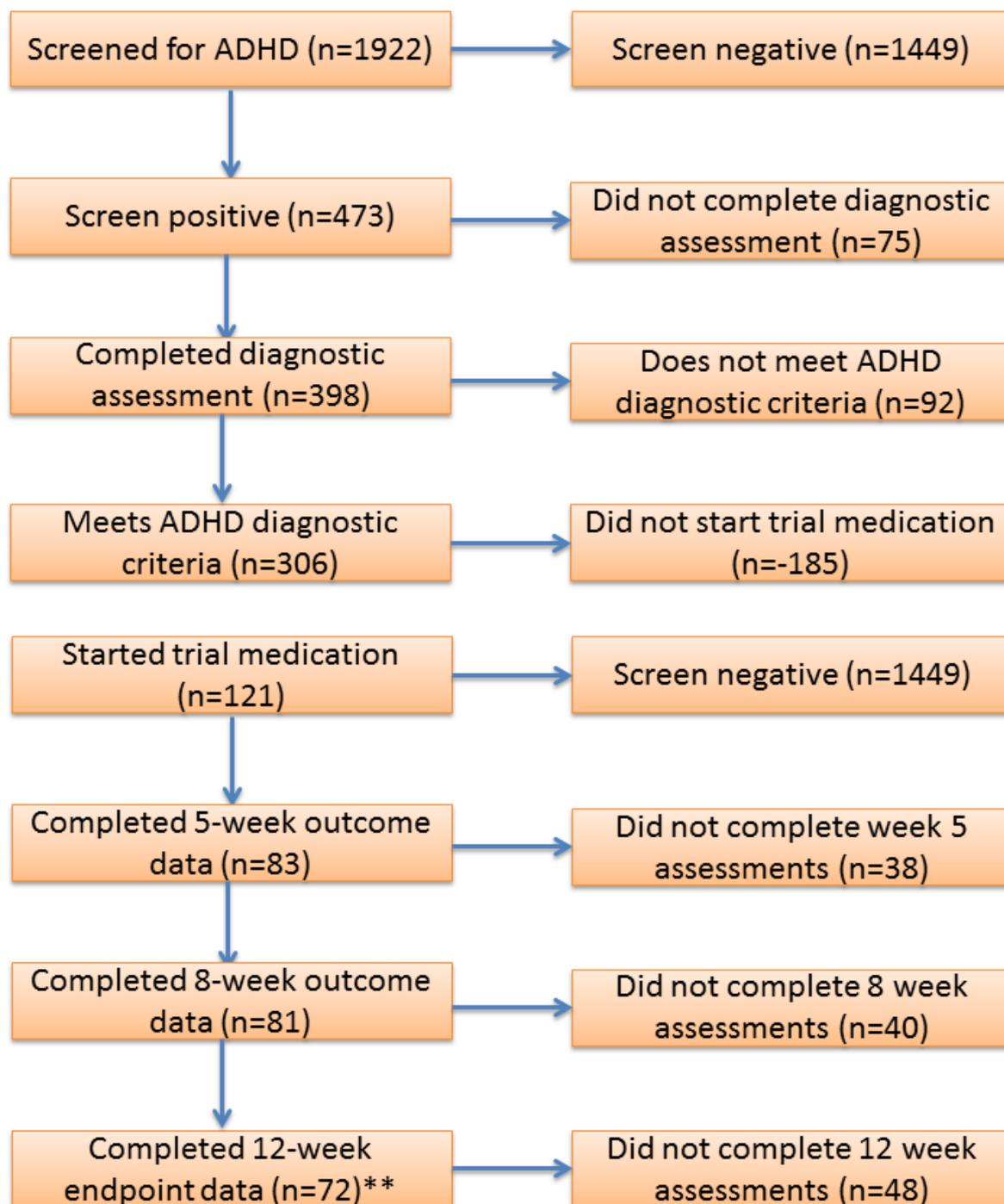
The diagnostic criterion allowed for one of three classifications: ADHD predominantly Inattentive type n=44 (11%), ADHD predominantly Hyperactive/Impulsive type n=29 (7.3%) and ADHD Combined type n=193 (48.5%). Including those who met the more relaxed diagnostic criteria of 6 or more in adulthood but unclear in childhood category n=40 (10%), a total of three hundred and six participants met diagnostic inclusion criteria for the clinical trial. The remaining 92 participants scored accordingly: DIVA negative n=58 (14.7%), unclear n=8 (2%) and those in remission (symptom presence in childhood only) n=26 (6.5%).



**Figure 2: Percentage outcomes from the DIVA diagnostic interview** in 398 screen positive cases. 76.8% of those completing the DIVA interview met diagnostic criteria for ADHD.

Following assessment and review those that met clinical diagnostic criteria for ADHD were checked against other inclusion and exclusion criteria and where appropriate, were invited to take part in the clinical trial. One hundred and twenty one adult male offenders meeting criteria for Adult ADHD opted to take part in the clinical trial of Concerta XL. All participants were willing to try Concerta XL for the proposed period of 12 weeks and were sentenced prisoners with at least three months remaining in custody. Those with fewer than 3 months remaining on their sentence or who failed to meet other specific inclusion criteria were treated where possible outside of the trial.

## 10.2. Patient numbers at each stage of recruitment and assessment:



\*\* For primary outcome: n=120 baseline data; n=75 endpoint outcome data. For ITT of symptom data: n=73 included in ITT analysis using endpoint data collected early on one individual (participant 9) carried forward

**14.3. Estimated prevalence of ADHD among prison inmates at HMP Isis:** 1922 offenders were screened over a two year period in HM YOI Isis: 473 screened positive for Adult ADHD, giving an estimated prevalence rate of 25% at screening level. We were able to administer 398 (84% of positive screens) with a full Diagnostic Assessments (DIVA), 266 met full criteria (67% of those assessed), a further 40 met current criteria with evidence of a lifelong pattern of ADHD starting during childhood (10%), 92 (23%) came out as negative or in remission.

Based on the 306 who fulfilled diagnostic eligibility for the clinical trial, we estimated an ADHD prevalence rate of 19.2% meeting diagnostic criteria for ADHD in the population we sampled. Of the 306 meeting initial criteria for the clinical trial, we were able to recruit a total of 121 participants to the CIAO trial: 81 reached week 8. 73 completed the endpoint assessments. Data was obtained for 75 on the primary outcome (from prison records) at endpoint.

#### **14.4. Protocol deviations**

- Participant 9 left the study at 8 weeks but concluded all week 12 endpoint assessments. This data was included in the per protocol analysis for week 12 endpoint data.
- The Adverse Effects Scale (AES) data was not collected at the baseline visit. This was a deviation from the protocol that did not present a risk to patients, or impact on the scientific aims of the protocol. The AEs was collected at all other data collection points. The omission of the baseline data means that we cannot make any inference about the presence of adverse effects prior to starting medication.

### **15. EFFICACY EVALUATIONS**

**15.1. Data collection:** Assessments were performed at baseline, weekly during the first 5 weeks of titration (weeks 1-5) and then again at weeks 8 and 12. Treatment started at an initial dose of 18 mg for 1 week, and was increased weekly in 18 mg increments to a maximum of 90 mg (i.e. 18 mg, 36 mg, 54 mg, 72 mg, and 90 mg). Medication was not increased if in the opinion of the clinician (or the participant) there were minor adverse effects that could be exacerbated at a higher dose. Medication was reduced by 18 mg if there was a limiting adverse event. Titration upwards was stopped if all ADHD symptoms were scored as negligible or absent (score of 0 or 1 on all items of the CAARS). Participants with limiting adverse events from 18 mg of Concerta XL were withdrawn from the trial. Following the end of the 12-week trial there was a 6-month open label extension, with further evaluations at 3 months and 6 months for those who opted to participate.

**15.2. Outcome measures:** The primary outcome measure was the number of recorded critical incidents (records of disruptive behaviour) in prison records from baseline to 12-weeks; as recorded by prison staff on the National Offender Management Information System (NOMIS). Each measurement point (baseline, 12-weeks, week 24 and 36) reflected behaviour over the previous 3-months (reported in units of 1-month). Incident and Earned Privileges; (Negative and Positive) assigned for inappropriate or good behaviour respectively were recorded. Adjudication data included: frequency of fights, assaults, serious assaults, self-harm, damage to property, disobeying an order, drug taking and referral to police. This particular data was then collated into two categories: Sum of Physical aggression and Sum of all Adjudications.

For new inmates presenting with significant behavioural problems linked to ADHD, the retrospective baseline reporting period was reduced to their reception date, so as not to exclude those in dire need of treatment.

Secondary measures were also collected on aggressive behaviour of participants as rated on the Modified Overt Aggression Scale (MOAS) completed by prison staff, recorded engagement with educational activities, scores on the Maudsley Violence self-rating scale (MVQ) in two areas, (acceptance of violence and machismo), ADHD symptoms and Emotional Dysregulation.

We administered the Brief Symptom Inventory designed to assess nine individual symptom groups (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism) and global severity index (the best single indicator of the respondent's level of distress) were administered at baseline, week 12 and in the extension phase. The Clinical Global Impression scale was also used by Clinician's at baseline, week 12 and the extension phase, assessing the overall improvements resulting from treatment.

Symptoms of ADHD were monitored on a weekly basis from week 0-5 and then at week 8, 12 and in the extension phase via the Connors Adult ADHD Rating Scale (CAARS). The CAARS measures the presence and severity of symptoms in adults and is based on the observer's assessment of the self-reported changes in participant behaviour between 0 (never/rarely) to 3 (very often). Emotional dysregulation was monitored via the Wender-Reimherr Adult Attention Deficit Disorder Scale (WRAADDS) and the Affective Lability Scale (ALS) at baseline, weeks 5, 8 and 12 (when medication had been titrated) and then again in the extension phase. The WRAADDS asks participants about instances of attention, temper, affective lability, emotional over reactivity, disorganisation and impulsivity issues and the frequency of these over the past week. The ALS asks about rapid mood changes.

Measures of intelligence (WASI-11 IQ test using 2 dimensions- vocabulary and matrix reasoning), Socialisation (Gough SO scale- measuring anti-social tendencies) and childhood conduct disorder (Barkley CD subscale) were also taken at baseline to build a more descriptive picture of those opting to take part.

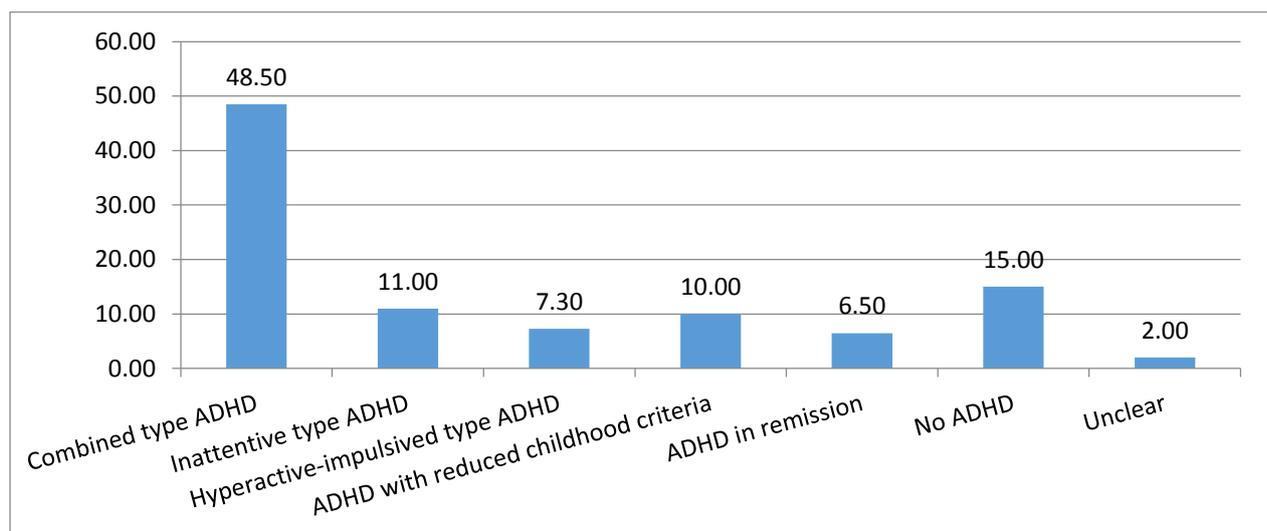
**15.3. Datasets analysed:** 5 participants dropped out after baseline assessment and before starting medication; they were replaced. 7 dropped out during week 1 of medication and were replaced. 121 participants began the trial of Concerta XL at baseline and continued beyond week 1. Only 72 completed all the way through to week 12. Primary outcome data was obtained on 75 participants. Reasons for dropping out of the protocol were as follows:

- Eighteen participants stopped due to side effects; participants seemed to experience these more acutely in this setting. Side effects such as appetite reduction, sleep disruption and headaches, are arguably more notable among participants whose activities are restricted and, unlike those in the community, have less opportunity to distract themselves from adverse effects.
- Eighteen participants left the prison unexpectedly. This was mainly due to unplanned transfers but a couple was also either released early or returned to court on other charges.
- Eight participants decided they didn't want to carry on due to a dislike of the programme (namely the gaps in research visits).
- Three were removed by the investigator due to non-compliance or the drug proving unsuitable
- One dropped out due to family advice
- One was removed from the study due to concealing medication.

**15.4. Primary outcome:** The primary outcome data was collected at baseline and at 12-weeks. Data collection was not continued for patients who dropped out of the protocol prior to the 12-week outcome, as the measure recorded reported behaviour over the previous 12-weeks. The final dataset with both baseline and 12-week adjudication data was n=72 (per protocol).

**15.5. Secondary outcomes:** Secondary outcome data was collected baseline 5, 8 and 12-weeks for rating and interview measures; and at baseline and 12-weeks for some of the prison record data. The figure in section 10.2 list the number with data collected at each stage. There were a total of 121 for LOCF analysis, 83 for 5-week data, 81 for 8-week data and 72 for 12-week data.

**15.6. Demographic and baseline data:** The diagnostic criterion allowed for one of three classifications: ADHD predominantly Inattentive type n=44 (11%), ADHD predominantly Hyperactive/Impulsive type n=29 (7.3%) and ADHD Combined type n=193 (48.5%). Including those who met the more relaxed diagnostic criteria of 6 or more in adulthood but unclear in childhood category n=40 (10%), a total of three hundred and six participants met diagnostic inclusion criteria for the clinical trial. The remaining 92 participants scored accordingly: DIVA negative n=58 (14.7%), unclear n=8 (2%) and those in remission (symptom presence in childhood only) n=26 (6.5%).



**Figure 2: Percentage outcomes** from the DIVA diagnostic interview in 398 screen positive cases. 76.8% of those completing the DIVA interview met diagnostic criteria for ADHD.

Following assessment and review those that met clinical diagnostic criteria for ADHD were checked against other inclusion and exclusion criteria and where appropriate, were invited to take part in the clinical trial. One hundred and twenty one adult male offenders meeting criteria for Adult ADHD opted to take part in the clinical trial of Concerta XL. All participants were willing to try Concerta XL for the proposed period of 12 weeks and were sentenced prisoners with at least three months remaining in custody. Those with fewer than 3 months remaining on their sentence or who failed to meet other specific inclusion criteria were treated where possible outside of the trial. The mean age of 121 participants was 21 years; 64 (52.9%) were White, 3 (2.5%) Asian, 33 (27.3%) Black, 18 (14.9%) were Mixed Race and 3 (2.5%) were from other ethnic backgrounds.

**Table 1:** Demographic data for trial participants (n=121)

| <i><b>Characteristic of participants</b></i>     | <i><b>Frequency</b></i> | <i><b>Percentage</b></i> |
|--|-------------------------|--------------------------|
| <i><b>Diagnostic criteria</b></i>                |                         |                          |
| DIVA Combined Type                               | 95                      | 78.50%                   |
| DIVA Inattentive sub-type                        | 11                      | 9.10%                    |
| DIVA Hyperactive/Impulsive                       | 6                       | 5%                       |
| DIVA 6+ Adult symptoms unclear childhood         | 9                       | 7.40%                    |
| <i><b>Education level</b></i>                    |                         |                          |
| Below GCSE level                                 | 69                      | 57%                      |
| Up GCSE level                                    | 33                      | 27.30%                   |
| Up to A level                                    | 2                       | 1.70%                    |
| Missing data                                     | 17                      | 14                       |
| <i><b>Employment status prior to custody</b></i> |                         |                          |
| In paid employment                               | 12                      | 9.90%                    |
| Self-employed                                    | 1                       | 0.80%                    |
| Unemployed                                       | 103                     | 85.10%                   |
| Missing  | 5                       | 4.10%                    |

**15.7. Baseline characteristics:** At baseline, as well as those measures we intended to repeat to observe for change, we also calculated scores of Socialization, Conduct disorder and IQ for all of the 121 participants. According to the Gough Socialization Scale the mean score was 35.2 (SD=4.252). The Gough Socialisation measure is normally calculated in such a way that higher scores indicate greater socialisation and lower scores delinquency (as well possible anti-social personality disorder traits). In previous research a score of 25 and lower has been used to indicate delinquent tendencies, for this particular research we have calculated total scores in the opposite direction as such the reverse rules apply and an equivalent of 29 (out of 54) or higher is used to indicate delinquent behaviours. The mean score of 35.2 indicates that the majority of our sample evidence delinquent behaviour, with 91% scoring above a total of 29.

The mean scores on the Barkley Conduct Disorder were 18.8 (SD=7.833). The maximum score on the Barkley CD is 45; higher scores indicate greater likelihood of childhood conduct disorder. Although the mean scores appear lower than expected, 21% of participants scored above 25 on the scale suggesting they exhibited certain behaviours indicative of conduct disorder between sometimes and often. The mean IQ of our sample was 90 (SD= 11.77).

We ran correlations to understand the relationship between ADHD symptoms of Inattention and Hyperactivity/Impulsivity and Socialization and Conduct Disorder. These correlations indicate positive correlations between both CAARS Hyperactivity/Impulsivity and Inattentive symptoms and socialisation and conduct problems (see Table 2).

|     | CD | GSS    | IQ    | HI     | INN    | Age   |
|-----|----|--------|-------|--------|--------|-------|
| CD  | -  | .495** | 0.001 | .348** | .258** | .015  |
| GSS |    | -      | -.126 | .208*  | .105   | -.031 |
| IQ  |    |        | -     | -.059  | -.145  | .049  |
| HI  |    |        |       | -      | .445** | .016  |
| INN |    |        |       |        | -      | .029  |
| AGE |    |        |       |        |        | -     |

**Table 2: Pearson correlations among baseline variables:**

CD=Barkley conduct disorder scale; GSS=Gough Socialisation Scale; IQ=intelligence quotient; HI=ADHD hyperactivity/impulsivity; INN=ADHD inattention;  
 \*\* =  $p < .001$ ; \* =  $p < .05$

**15.8. Substance use case-control differences:** Consent was taken from 414 participants at either screening level or at DIVA assessment to compare characteristics of those meeting criteria for the ADHD clinical trial or those screening negative for the disorder. Data from 267 individuals meeting criteria were combined with 147 negative screens (control). We tested to see whether there was an association between a diagnosis of ADHD and a history of substance and/or alcohol use when compared to controls. We used chi-squared tests on our data to look for associations.

Daily cannabis use ( $X^2 = 61.850$ ,  $df=1$ ,  $p < 0.0000$ ), alcohol use ( $X^2 = 13.548$ ,  $df=1$ ,  $p < 0.0002$ ), alcohol abuse ( $X^2 = 5.325$ ,  $df=1$ ,  $p < 0.021$ ), CNS depressant ( $X^2 = 5.971$ ,  $df=1$ ,  $p < 0.015$ ) and CNS stimulant use ( $X^2 = 24.263$ ,  $df=1$ ,  $p < 0.000001$ ) were all found to be significantly higher among those with an ADHD diagnosis. There were no significant associations with ADHD diagnosis and the use of hallucinogens or opiates. In an additional analysis we found a statistically significant relationship between a positive ADHD diagnosis and non-drug related offences ( $X^2 = 25.943$ ,  $df=1$ ,  $p < 0.000$ ). Those with ADHD are perhaps less likely to be involved or caught for this particular offence. Overall it is arguably a crime that requires a level of planning rather than spur of the moment action.

**15.9. Prevalence of ADHD among prison inmates at HMP Isis:** 1922 offenders were screened over a two year period in Isis: 473 screened positive for Adult ADHD, giving an estimated prevalence rate of 25% at screening level. We were able to administer 398 (84% of positive screens) with a full Diagnostic Assessments (DIVA), 266 met full criteria (67% of those assessed), a further 40 met relaxed criteria highly suggestive of ADHD (10%), 92 (23%) came out as negative or in remission.

Based on the 306 who fulfilled diagnostic eligibility for the clinical trial, we estimated an ADHD prevalence rate of 19.2% meeting diagnostic criteria for ADHD in the population we sampled. Of the 306 meeting initial criteria for the clinical trial, we were able to recruit a total of 121 participants to the CIAO trial: 81 reached week 8, 72 completed the full 12 weeks.

**15.10. Efficacy analyses:** We applied non-parametric tests (due to the skewed distribution of the outcome variables), looking at changes in symptoms and behavioural outcomes from baseline through to week 12 endpoint. Tests at each measurement point

allowed us to extract symptom level data on those who did not complete to the full 12 weeks. Analyses were completed according to both ITT and per protocol analyses. Bootstrapped paired t-tests were completed for baseline to outcome data. Pre-post effect sizes were calculated using Cohen's d.

**15.11. Titration Levels:** The first 5 weeks involved titrating participants to an optimal dose that both they, and the clinician were happy with. This decision involved weighing up treatment effects and adverse effects to agree on an optimal dose for each participant. Of the 121 participants who took part in medication trial, 27 (22.3%) were titrated to a stable dose of 18mg, 41 (33.9%) to 36mg, 24 (19.8%) to 54mg, 24 (19.8%) to 72mg and 5 (4.1%) to 90mg. Overall there was an unanticipated preference toward lower doses, a trend we had not anticipated, indicating a potentially heightened sensitivity to side effects but also minimal diversion.

**15.12. Summary of 12-week endpoint outcomes:** ITT and per protocol effect sizes and significance values are listed in Table 3 for major outcomes of interest in this study. ITT analyses used last observation carried forward (LOCF)

|                                       | Per protocol analysis |                      | Intention to treat analysis |                    |
|---------------------------------------|-----------------------|----------------------|-----------------------------|--------------------|
|                                       | Cohen's d             | Unadjusted p-value < | Cohen's d                   | Unadjusted-value < |
| <b>Sum of adjudications (primary)</b> | <b>0.53</b>           | <b>.0005</b>         | <b>0.30</b>                 | <b>.005</b>        |
| Hyperactivity/impulsivity             | 2.78                  | .0001                | 2.29                        | .001               |
| Emotional dysregulation               | 1.71                  | .0001                | 1.19                        | .001               |
| WRAADS total                          | 2.27                  | .0001                | 1.51                        | .001               |
| Affective lability scale              | 1.65                  | .0001                | 1.21                        | .002               |
| BSI – global severity index           | 1.07                  | .0001                | 0.63                        | .001               |
| MVQ-machismo                          | 0.98                  | .0001                | 0.62                        | .001               |
| MVQ-acceptance of violence            | 0.40                  | .0001                | 0.25                        | .003               |
| Sum of disobey orders                 | 0.49                  | .002                 | 0.28                        | .024               |
| Percentage of attended activities     | 0.36                  | .062                 | 0.09                        | .390               |
| Sum of positive IEPs                  | -0.35                 | .009                 | -0.31                       | .009               |
| Days in enhanced regime               | 0.25                  | .025                 | -0.11                       | .181               |

**Table 3:** Summary of the ITT and per protocol effect sizes and significance levels of the main primary and secondary outcomes

**15.13. Primary outcome:** For the intention to treat (ITT) analysis findings were small to moderate reductions in the number of adjudications from baseline to 12 weeks:  $p < .005$ ,  $d = 0.29$ . Using the per protocol (pp) analysis there was a moderate change indicating a reduction in the sum of adjudication after a period of 12 weeks:  $t(71) = 3.664$ ,  $p = 0.0005$ ,  $d = 0.53$ .

#### 15.14. Symptom level change

Measures of core symptoms of ADHD were measured via the CAARS observer scale, teamed with the WRAADDs and Affective Lability scales to better understand the emotional dysregulation associated with ADHD. Wilcoxon signed rank tests, conducted on all of these measures as normality tests, revealed that the data was skewed. Data available below week 12 was analysed to understand treatment effects of those who for whatever reason, did not complete the full trial period.

Analysis of symptom change according to the CAARS Inattention and Hyperactivity/Impulsivity, revealed significant differences from week 0 to week 5, and 8. The

Wilcoxon signed-rank test showed that 5 weeks of treatment elicited a significant reduction in ADHD symptom level ( $Z=-8.424$ ,  $P=0.00$ ), which remained at week 8 ( $Z=-7.844$ ,  $P=0.000$ ).

Wilcoxon signed rank tests were also performed on week 0-5, 0-8 WRAADDS scales (Wender-Reimherr Adult Attention Deficit Disorder Scale); a measure that not only incorporates questions around the symptoms traditionally associated with ADHD but also emotional dysregulation. Although the WRAADDS has 6 components (attention, temper, affective lability, over-reactivity, disorganisation and impulsivity), for the purpose of analysis we looked at WRAADDS total scores and WRAADDS emotional dysregulation (a total of temper+ affective lability + over- reactivity scores). Analysis revealed a significant reduction in WRAADDS total scores between baseline and week 5 and baseline and week 8, results of the non-parametric tests are indicated respectively; ( $Z= -8.421$ ,  $P= 0.000$ ) and ( $Z=-7.773$ ,  $P=0.000$ ). Changes were also observed in emotional dysregulation scores at week 5 and at week 8; ( $Z=-8.403$ ,  $P=0.000$ ) and ( $Z= -7.632$ ,  $P=0.000$ ).

Affective lability is seen as unstable and rapidly changing emotions over a very short period; in this way it is easily distinguished from depression or mania in bipolar. Affective lability is seen frequently in those with ADHD and was examined at baseline and throughout the treatment process. Wilcoxon signed rank tests were performed on baseline to week 5 and baseline to week 8 pairs, revealing a significant total score reduction at by both week 5 and week 8; ( $Z= -7.525$ ,  $P=0.000$ ) and ( $Z=-7.104$ ,  $P=0.000$ ).

**15.15. Comorbid health problems:** It is often thought that those suffering from ADHD may also exhibit symptoms of other co-morbid mental health conditions. In this particular study we tried to get a sense of this through the Brief Symptom Inventory (BSI); a quick psychological self-report symptom scale used to measure nine primary symptom dimensions (somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) and a Global Severity Index (widely considered to be the best single indicator of distress). The validity of the subscales has been questioned, so we only report the global severity index.

We ran correlational tests on the 121 participants baseline data to see if there were any evident associations between the BSI dimensions and the core symptoms of Inattention, Hyperactivity/Impulsivity (as measured by the CAARS observer scale) and emotional dysregulation prior to treatment. The tests revealed that the WRAADDS measure of emotional dysregulation correlated with all nine BSI dimensions and the global severity index. The CAARS Hyperactivity/Impulsivity and inattention correlated with the Global Severity Index ( $r=.249$  and  $.292$  respectively).

|               | Protocol | Mean    | N   | Std. Deviation | Std. Error Mean | p-value (>) | d    |
|---------------|----------|---------|-----|----------------|-----------------|-------------|------|
| als.0         |          | 42.56   | 96  | 9.953          | 1.016           |             |      |
| als.5         | pp       | 30.58   | 96  | 10.694         | 1.092           | 0.0001      | 1.16 |
| als.0         |          | 41.94   | 81  | 10.190         | 1.132           |             |      |
| als.8         | pp       | 27.73   | 81  | 10.901         | 1.211           | 0.0001      | 1.35 |
| als.0         |          | 41.88   | 73  | 9.580          | 1.121           |             |      |
| als.12        | pp       | 26.88   | 73  | 8.295          | .971            | 0.0001      | 1.67 |
| als.0         |          | 42.34   | 121 | 9.491          | .863            |             |      |
| als.12.locf   | ITT      | 30.45   | 121 | 10.401         | .946            | 0.0001      | 1.19 |
| GSI.0         |          | 1.26    | 73  | .669           | .078            |             |      |
| GSI.12        | pp       | .59     | 73  | .553           | .065            | 0.0001      | 1.09 |
| GSI.0         |          | 1.24    | 121 | .605           | .055            |             |      |
| GSI.12.locf   | ITT      | .83     | 121 | .727           | .066            | 0.0001      | 0.61 |
| HI.0          |          | 18.58   | 96  | 4.350          | .444            |             |      |
| HI.5          | pp       | 6.50    | 96  | 4.549          | .464            | 0.0001      | 2.71 |
| HI.0          |          | 18.48   | 81  | 4.348          | .483            |             |      |
| HI.8          | pp       | 6.43    | 81  | 4.384          | .487            | 0.0001      | 2.76 |
| HI.0          |          | 18.59   | 73  | 4.278          | .501            |             |      |
| HI.12         | pp       | 6.10    | 73  | 4.688          | .549            | 0.0001      | 2.78 |
| HI.0          |          | 18.96   | 121 | 4.306          | .391            |             |      |
| HI.12.locf    | ITT      | 7.98    | 121 | 5.954          | .541            | 0.0001      | 2.11 |
| INN.0         |          | 18.15   | 96  | 3.899          | .398            |             |      |
| INN.5         | pp       | 5.49    | 96  | 4.316          | .441            | 0.0001      | 3.08 |
| INN.0         |          | 18.02   | 81  | 3.889          | .432            |             |      |
| INN.8         | pp       | 5.09    | 81  | 4.912          | .546            | 0.0001      | 2.92 |
| INN.0         |          | 18.19   | 73  | 4.002          | .468            |             |      |
| INN.12        | pp       | 4.96    | 73  | 4.920          | .576            | 0.0001      | 3.00 |
| INN.0         |          | 18.65   | 121 | 3.911          | .356            |             |      |
| INN.12.locf   | ITT      | 6.98    | 121 | 6.140          | .558            | 0.0001      | 2.27 |
| ED.0          |          | 18.5625 | 96  | 5.37208        | .54829          |             |      |
| ED.5          | pp       | 7.9688  | 96  | 5.71140        | .58292          | 0.0001      | 1.84 |
| ED.0          |          | 18.3827 | 81  | 5.37254        | .59695          |             |      |
| ED.8          | pp       | 7.7037  | 81  | 6.70903        | .74545          | 0.0001      | 1.99 |
| ED.0          |          | 18.4658 | 73  | 5.55298        | .64993          |             |      |
| ED.12         | pp       | 8.2192  | 73  | 6.25221        | .73177          | 0.0001      | 1.73 |
| ED.0          |          | 18.6529 | 121 | 5.33809        | .48528          |             |      |
| ED.12.locf    | ITT      | 10.8264 | 121 | 7.60885        | .69171          | 0.0001      | 1.47 |
| WT.0          |          | 26.8125 | 96  | 6.76261        | .69021          |             |      |
| WT.5          | pp       | 10.3333 | 96  | 6.95802        | .71015          | 0.0001      | 2.40 |
| WT.0          |          | 26.4444 | 81  | 6.71379        | .74598          |             |      |
| WT.8          | pp       | 10.0864 | 81  | 8.05326        | .89481          | 0.0001      | 2.21 |
| WT.0          |          | 26.5753 | 73  | 6.84332        | .80095          |             |      |
| WT.12         | pp       | 10.0685 | 73  | 7.57065        | .88608          | 0.0001      | 2.29 |
| WT.0          |          | 26.9835 | 121 | 6.77985        | .61635          |             |      |
| WT.12.locf    | ITT      | 13.9835 | 121 | 10.26563       | .93324          | 0.0001      | 1.49 |
| MVQ-A.0       |          | 11.56   | 75  | 2.213          | .256            |             |      |
| MVQ-A.12      | pp       | 10.61   | 75  | 2.842          | .328            | 0.002       | 0.37 |
| MVQ-A.0       |          | 11.66   | 121 | 2.015          | .183            |             |      |
| MVQ-A.12.locf | ITT      | 11.07   | 121 | 2.520          | .229            | 0.002       | 0.26 |
| MVQ-M.0       |          | 21.44   | 75  | 9.208          | 1.063           |             |      |
| MVQ-M.12      | pp       | 12.57   | 75  | 8.910          | 1.029           | 0.0001      | 0.98 |
| MVQ-M.0       |          | 21.42   | 121 | 8.774          | .798            |             |      |
| MVQ-M.12.locf | ITT      | 15.93   | 121 | 9.598          | .873            | 0.0001      | 0.60 |

**Table 4:** \* [0,5,8,12] refers to week of assessment. Symptom scores: per protocol (pp) and intention to treat (ITT) analyses. ALS= affective lability scale; BSI=Behavioural symptom inventory (global index score); HI=hyperactivity/impulsivity; INN=inattention; ED=Wender Reimherr Adult ADHD Diagnostic Scale (WRAADS)-emotional dysregulation scale; WT=WRAADS total symptom score; MVQ-A=Maudsley Violence Questionnaire-acceptance of violence scale; MVQ-M=Maudsley Violence Questionnaire-Machismo scale

**15.16. Adjudication and prison record data:** For all those completing the full twelve weeks of the trial we evaluated change also on records of adjudications (the primary outcome) and educational attendance. Paired t-tests with bootstrapping were administered on baseline to week 12 data. In terms of changes in disruptive behaviour and levels of engagement in educational activities, we focus on particular areas recorded regularly by Isis prison staff. This allowed us to gain as much data as possible for the 12 weeks prior to baseline to then compare to the 12 week period of treatment.

We looked at the following measures:

- Sum of Physical Aggression (including all records on the prison system of, serious assaults, assaults and fights)
- Sum of Adjudications (including all physical aggression and also records of self-harm, damage to property, taking drugs, disobeying orders, referrals to police and other).
- The number of negative Incident and Earned Privileges (IEPs-given at the officer's discretion for continued negative behaviour but are separate from other adjudication records)
- Positive IEPs (given for good behaviour)
- Total number of days on enhanced regime (awarded to those when consistently well behaved)
- Total occasions spent in segregation (solitary confinement for severe incidents that cannot be managed elsewhere)
- Total number of disobeyed order (the most commonly reported problem in prison)
- Modified Overt Aggression Scales (completed by officers on participant behaviour).

The following measures were not significantly affected over the treatment period:

- Sum of Physical Aggression:  $t(71) = 1.123, p = .265$
- Negative IEP totals:  $t(71) = -6.91, p = .492$
- Total occasions sent to segregation:  $t(71) = 1.538, p = .128$
- Modified Overt Aggression:  $t(68) = .908, p = .367$  (Note: there were continued issues getting the same officer to complete the measure at the two time points due to staff sickness and rotas. Staff also commented that the measure did not feel like a suitable reflection of behaviours exhibited).

There were significant changes indicating a reduction in occurrences of the following after 12 weeks of treatment:

- Sum of all adjudications:  $t(71) = 3.664, p = 0.0005$
- Total disobeying of order:  $t(71) = 3.220, p = 0.002$
- Total number of positive IEPs being awarded during the treated period compared to baseline;  $t(71) = -2.682, p = 0.009$
- Number of days spent on standard regime;  $t(71) = -2.314, p = 0.024$ .

Further questions focused on engagement with educational activities. To address these questions we analysed the percentage of attended activities over the 12 weeks pre and during treatment. Unfortunately due to difficulty in obtaining this information from education staff and prison records, we were only able to collect these data on 54 participants. When analysed results indicated an increase in percentage attendance during the treatment phase:  $t(53) = -1.971, p = .054$ .

Aside from these objective measures of disruptive behaviours, we also measured participants' opinions toward violence on the MVQ. This measure taken at both baseline and week 12 (post treatment phase) calculates Acceptance of Violence and Machismo scores according to responses to true and false questions. According to bootstrapped paired tests there was a significant reduction in both domains by week 12, results are reportedly here

respectively:  $t(71) = 4.021, p = 0.0001$  and  $t(71) = 12.090, P = 0.0000$  (see Table 4, section 11.7.4).

|                            | Protocol | Mean  | N   | Std. Deviation | Std. Error Mean | p-value (<) | d     |
|----------------------------|----------|-------|-----|----------------|-----------------|-------------|-------|
| moas.po.0                  |          | 8.25  | 73  | 18.57          | 2.174           |             |       |
| moas.po.12                 | pp       | 5.56  | 73  | 12.56          | 1.47            | 0.30        | 0.17  |
| moas.po.0                  |          | 9.34  | 118 | 20.37          | 1.876           |             |       |
| moas.po.12.locf            | ITT      | 7.68  | 118 | 17.47          | 1.608           | 0.63        | 0.09  |
| total_basic.0              |          | 7.92  | 75  | 16.29          | 1.882           |             |       |
| total_basic.12             | pp       | 7.55  | 75  | 12.28          | 1.418           | 0.89        | 0.03  |
| total_basic.0              |          | 10.48 | 120 | 19.69          | 1.797           |             |       |
| total_basic.LOCF           | ITT      | 10.24 | 120 | 17.82          | 1.627           | 0.39        | 0.03  |
| total_standard.0           |          | 59.73 | 75  | 29.34          | 3.388           |             |       |
| total_standard.12          | pp       | 68.93 | 75  | 31.19          | 3.601           | 0.01        | -0.3  |
| total_standard.0           |          | 56.48 | 120 | 29.85          | 2.725           |             |       |
| total_standard.LOCF        | ITT      | 62.23 | 120 | 31.90          | 2.912           | 0.02        | -0.19 |
| total_enhanced.0           |          | 8.84  | 75  | 25.10          | 2.898           |             |       |
| total_enhanced.12          | pp       | 14.33 | 75  | 31.22          | 3.605           | 0.21        | 0.19  |
| total_enhanced.0           |          | 9.06  | 120 | 25.92          | 2.366           |             |       |
| total_enhanced.LOCF        | ITT      | 12.6  | 120 | 29.84          | 2.724           | 0.05        | -0.13 |
| sum_alladj.0               |          | 1.45  | 75  | 2.09           | 0.242           |             |       |
| sum_alladj.12              | pp       | 0.56  | 75  | 1.12           | 0.129           | 0.01        | 0.83  |
| sum_alladj.0               |          | 1.38  | 120 | 2.12           | 0.194           |             |       |
| sum_alladj.LOCF            | ITT      | 0.82  | 120 | 1.63           | 0.149           | 0.00        | 0.3   |
| total_negbeh.0             |          | 2.05  | 75  | 2.68           | 0.31            |             |       |
| total_negbeh.12            | pp       | 2.24  | 75  | 2.41           | 0.278           | 0.80        | -0.07 |
| total_negbeh.0             |          | 1.84  | 120 | 2.54           | 0.232           |             |       |
| total_negbeh.LOCF          | ITT      | 1.96  | 120 | 2.38           | 0.217           | 0.20        | -0.05 |
| total_posbeh.0             |          | 0.52  | 75  | 0.91           | 0.105           |             |       |
| total_posbeh.12            | pp       | 0.93  | 75  | 1.31           | 0.151           | 0.01        | -0.36 |
| total_posbeh.0             |          | 0.45  | 120 | 0.82           | 0.075           |             |       |
| total_posbeh.LOCF          | ITT      | 0.7   | 120 | 1.14           | 0.104           | 0.01        | -0.25 |
| total_segregation.0        |          | 0.45  | 75  | 0.92           | 0.106           |             |       |
| total_segregation.12       | pp       | 0.29  | 75  | 0.71           | 0.082           | 0.13        | 0.19  |
| total_segregation.0        |          | 0.79  | 120 | 3.54           | 0.323           |             |       |
| total_segregation.LOCF     | ITT      | 0.68  | 120 | 3.52           | 0.321           | 0.26        | 0.03  |
| Percent_attendofsched.0    |          | 56.46 | 57  | 27.00          | 3.576           |             |       |
| Percent_attendofsched.12   | pp       | 66.03 | 57  | 29.81          | 3.948           | 0.05        | -0.34 |
| Percent_attendofsched.0    |          | 53.46 | 113 | 26.96          | 2.536           |             |       |
| Percent_attendofsched.LOCF | ITT      | 51.32 | 113 | 34.11          | 3.208           | 0.55        | 0.07  |

**Table 5:** ITT and pp analyses for prison record data. moas=modified overt aggression scale; total\_basic=n days on basic regime; total-standard=n days on standard regime; total\_enhanced=n days on enhanced regime; sum\_alladj=total n adjudications; total\_negbeh=n negative IEPs; total-posbeh=n positive IEPs; total-segregation=days in segregation unit; percent attendofsched=proportion of scheduled education/work/rehabilitation activities attended. 0=baseline, 12=12 week pp outcomes; LOCF=12 week LOCF outcomes

**15.17. Correlations:** In order to understand whether there was any relationship between core symptoms of ADHD (as measured by the CAARS), associated emotional dysregulation (as measured via the WRAADDS and ALS) and our primary adjudication outcomes, we calculated change scores (baseline minus week 12 scores) on all variables in order to run further tests to identify any significant associations of interest. Prior to running these correlations, initial descriptives were run and data appeared to be skewed. Formal tests of normality were then carried out and data was then transformed on baseline, week 12 and change score variables accordingly:

Having normalised the skewed data we ran initial correlations on the change scores and found two interesting associations between measures of emotional dysregulation and adjudication data. According to these correlations, the Sum of all Adjudication change scores was positively correlated with the WRAADDS emotional dysregulation ( $r = .278$ ), suggesting that high scores of emotional lability equated to an increase in overall adjudications. We also found that days on enhanced regime were negatively associated ( $r = -.260^*$ ) with reports of affective lability or unstable mood. This implies that as days on enhanced (the preferred regime awarded to well-behaved individuals) increased, affective lability decreased.

We ran further correlations on a mixture of baseline and change scores to try and establish if there were any moderating effects of the Socialisation (GSS), Conduct Disorder (recorded on the Barkley CD) or IQ on change scores for primary adjudication outcomes. We found no correlations with any of our adjudication outcomes with either the GSS or Barkley Conduct disorder measure but we did find that IQ negatively correlated with the sum of all adjudication change scores ( $r = -.329^{**}$ ). While initial correlations indicate that the WRAADDS emotional dysregulation has a mediating effect on sum of all adjudications, IQ has a moderating effect (as total intelligence quota scores increase, sum of all adjudications change scores decrease and vice versa).

**15.18. Regressions:** Regressions were then run to establish whether the correlations that came up in our analysis were statistically significant. A multiple regression was run to predict whether the change score for the sum of adjudications can be explained by the WRAADDS emotional dysregulation change scores, WASII IQ scores and WRAADDS emotional dysregulation at baseline. These variables statistically significantly predicted Sum of Adjudication change scores,  $F(3, 68) = 5.130$ ,  $P = 0.003$ ,  $R^2 = .185$ . Looking closer at these results we also found that WRAADDS emotional dysregulation change scores and WASII IQ (without WRAADDS baseline) also significantly predicted change in sum of adjudications  $F(2,69) = 6.768$ ,  $p = 0.002$ ,  $R^2 = .164$ , as did WRAADDS emotional dysregulation change scores alone  $F(1,70) = 5.882$ ,  $P = 0.018$ ,  $R^2 = .078$ , however goodness of fit increased with the addition of variables. The significant prediction value of these values confirms that WRAADDS emotional dysregulation has a mediating effect on the sum of adjudication scores while IQ has a moderating effect.

We also ran a regression to see if we could explain the number of days spent on enhanced regime change score from ALS change scores and Age. These variables significantly predicted Days spent on Enhanced Regime change scores,  $F(2, 69) = 2.505$ ,  $p = 0.089$ ,  $R^2 = .068$ . However 'Age' only had an additive effect whereas Affective Lability change scores alone provided a statistically significant explanation for the corresponding change in number of days spent on enhanced regime,  $F(1,70) = 5.081$ ,  $p = 0.027$ ,  $R^2 = .068$ . This suggests that Affective Lability has a mediating effect on the number of days spent on enhanced regime.

## 16. EFFICACY CONCLUSIONS

This is an open label single arm trial so no conclusions can be drawn on efficacy of the trial medication on either the primary or secondary outcomes.

The primary outcome was the total number of adjudications reported by prison officers in the electronic prison records. The effects were  $d=0.53$  using the per protocol analysis but only 0.29 using the ITT analysis. Here the confidence that such change are accounted for by the study medication is uncertain. Adjudication rates are relatively low and it may be that the prison regime is good at responding to adjudications events once they occur. Taking part in the clinical trial with weekly visits from research staff may further impact in a beneficial way on aggressive or antisocial behaviour. However we did not select on the primary outcome, so adjudications rates could have gone up as well as down. Taking into account the small effect on the primary outcome for the ITT analysis, and the moderate effect in the pp analysis it is clear that no conclusions can be drawn from the analysis here. A larger, placebo controlled trial is required to address this question.

With regard secondary behavioural outcomes reported by prison and education staff, the same arguments apply as for adjudications. No conclusion can be drawn. Overall these findings on behavioural outcomes (aggression, antisocial behaviour and engagement with education) indicate the need for a larger definitive trial powered and designed to address these questions.

In contrast, the effects on symptoms, particular core ADHD symptoms, but also other domains were substantial, being in the range of  $d = 1.5$  to 2. For example if we consider the effect in core ADHD symptoms measured using the investigator rated Conners ADHD rating scale. The results of the single arm open label pilot study shows a mean decrease of 25.0 points with a standard deviation of 9.1. This suggested a standardised effect size of  $d=2.75$ . It could then reasonably be assumed that at least 20% of this effect might be attributed to the effects of MPH since previous meta-analyses show an average effect around  $d=0.5$ . On this basis, a study of around 200 would be powered to detect a standardised effect size of  $d=0.55$  assuming a 25% drop-out rate from treatment and a standard deviation of 9.0. This would translate into a treatment(4%) difference of 5.0 points.

## 17. SAFETY DATA

**17.1. Minor adverse effects** in week 1 and week 8 are listed in Table 5. Following initiation of medication there are high levels of headaches (14%), dryness of the mouth (21%), thirst (23%), appetite reduction (13%), frequent urination (4%), sleep difficulties (19%), mood instability (6%), Irritability (9%), agitation (5%), sadness (2%), heart palpitations (1%) and feeling worse when medication wears off (7%). These have greatly reduced by week 8, although this could be due to participants experiencing such adverse effects leaving the trial.

**17.2. Serious adverse events:** No serious adverse events were recorded during the trial.

**17.3. Adverse event log:** This is found in the Appendix

|  | Week 1   |     |        | Week 5   |    |        | 12-week endpoint |    |        |
|--|----------|-----|--------|----------|----|--------|------------------|----|--------|
|  | N events | N   | %      | N events | N  | %      | N events         | N  | %      |
| Headache   | 2        | 111 | 1.80%  | 8        | 93 | 8.60%  | 2                | 69 | 2.90%  |
| Dryness of the skin  | 1        | 111 | 0.90%  | 6        | 93 | 6.45%  | 0                | 69 | 0.00%  |
| Dryness of the eyes  | 1        | 111 | 0.90%  | 1        | 93 | 1.08%  | 0                | 69 | 0.00%  |
| Dryness of the mouth   | 22       | 111 | 19.82% | 21       | 93 | 22.58% | 11               | 69 | 15.94% |
| Thirst   | 26       | 111 | 23.42% | 22       | 93 | 23.66% | 8                | 69 | 11.59% |
| Sore throat  | 0        | 111 | 0.00%  | 0        | 93 | 0.00%  | 0                | 69 | 0.00%  |
| Dizziness  | 1        | 111 | 0.90%  | 3        | 93 | 3.23%  | 1                | 69 | 1.45%  |
| Nausea   | 3        | 111 | 2.70%  | 2        | 93 | 2.15%  | 3                | 69 | 4.35%  |
| Stomach aches  | 0        | 111 | 0.00%  | 0        | 93 | 0.00%  | 1                | 69 | 1.45%  |
| Vomiting   | 0        | 111 | 0.00%  | 1        | 93 | 1.08%  | 0                | 69 | 0.00%  |
| Sweating   | 2        | 111 | 1.80%  | 2        | 93 | 2.15%  | 2                | 69 | 2.90%  |
| Appetite reduction   | 14       | 111 | 12.61% | 18       | 93 | 19.35% | 6                | 69 | 8.70%  |
| Weight loss  | 0        | 111 | 0.00%  | 2        | 93 | 2.15%  | 0                | 69 | 0.00%  |
| Weight gain  | 1        | 111 | 0.90%  | 0        | 93 | 0.00%  | 0                | 69 | 0.00%  |
| Diarrhea   | 1        | 111 | 0.90%  | 0        | 93 | 0.00%  | 0                | 69 | 0.00%  |
| Frequent urination   | 11       | 111 | 9.91%  | 6        | 93 | 6.45%  | 0                | 69 | 0.00%  |
| Tics   | 1        | 111 | 0.90%  | 1        | 93 | 1.08%  | 0                | 69 | 0.00%  |
| Sleep difficulties   | 21       | 111 | 18.92% | 10       | 93 | 10.75% | 6                | 69 | 8.70%  |
| Mood instability   | 6        | 111 | 5.41%  | 5        | 93 | 5.38%  | 1                | 69 | 1.45%  |
| Irritability   | 2        | 111 | 1.80%  | 5        | 93 | 5.38%  | 2                | 69 | 2.90%  |
| Agitation/excitability   | 6        | 111 | 5.41%  | 4        | 93 | 4.30%  | 0                | 69 | 0.00%  |
| Sadness  | 2        | 111 | 1.80%  | 3        | 93 | 3.23%  | 0                | 69 | 0.00%  |
| Heart palpitations   | 1        | 111 | 0.90%  | 2        | 93 | 2.15%  | 0                | 69 | 0.00%  |
| Increased blood pressure   | 1        | 111 | 0.90%  | 0        | 93 | 0.00%  | 0                | 69 | 0.00%  |
| Sexual dysfunction   | 0        | 111 | 0.00%  | 1        | 93 | 1.08%  | 0                | 69 | 0.00%  |
| Feeling worse or different when the medication wears off (rebound) | 9        | 111 | 8.11%  | 3        | 93 | 3.23%  | 2                | 69 | 2.90%  |

**Table 6:** List of reported adverse events on the Adverse Event Scale recorded at week 1, 8 and 12. AE coded as present if scored 3 (often) or 4 (all the time) on the adverse events scale.

## 18 QUALITATIVE DATA

**18.1. Feedback from Prison Inspectorate:** Important feedback from Her Majesty's Prison Inspectorate group was provided on the impact of the CIAO treatment project at HMP Isis following a visit in early 2014. Inspectors acknowledged the work done by the CIAO study:

*"All prisoners were offered screening for attention deficit hyperactivity disorder (ADHD) through the specialist Concerta (an ADHD treatment) in adult offenders (CIAO) trial..."*  
*"Some prisoners on the CIAO programme to whom we spoke were experiencing some stability of behaviour for the first time in their lives". "There should be efforts to ensure the continued prescribing of medication and ongoing specialist support for prisoners started on the Ciao trial following their release."*

**18.2. Experiences of participants reaching week 12:** Although 72 individuals reached week 12, there were still some unexpected barriers along this journey. The strict prison regime at times had an impact on compliance but also prisoner experiences of the medication. Within a prison setting medication times for administering a controlled drug such as Concerta XL are very strict. If an individual did not wake up on time or was not unlocked due to bad behaviour they had difficulty accessing their medication. Understanding this issue and overcoming it involved a great deal of work with front line prison staff. There was a need to explain that while on one level their reluctance to unlock those who were badly behaved may prove easier in the short term, in the long run treatment should improve their behaviour. We were also able to negotiate with front line nursing staff to allow some level of flexibility in terms of medication times, improving compliance and the likelihood of participants successfully completing the trial.

Participants reported expected side effects such as, headaches, dry mouth, thirst, appetite reduction, sleep difficulties and feeling slightly sick. However, those on trial also described "over-thinking" as an unwanted effect. Interestingly when we asked participants about this "over-thinking" it became apparent that perhaps in less controlled environments this would have been experienced as a positive improvement in focus. Conversely for them, this represented something that was extremely unnerving; allowing them to think clearly through the potentially distressing realities of the past, present and future. If un-managed some felt paranoid and stressed, but once they understood this shift and were able to apply their attention in appropriate way, they described the experience as a positive one.

This un-anticipated take on improved focus meant the titration period (first five weeks) when participants were seen weekly by the research team became a crucial period. Rapport with participants was integral in helping them process and understand this change. Those who were able to understand this process and the possibilities of thinking things through were generally able to make it through to the full 12 weeks (if there were not too many other side effects). Individuals who did not like the experience of thinking through their actions (particularly in potentially violent situations), or those who had not fully aligned themselves with this change by week 5, were more likely to drop out.

Participants reaching week 12 in general described benefits from the programme. We asked all week 12 completers to fill out a brief feedback form on their experience of the research project including questions on: how beneficial they found the project on a scale from 0 (not at all) to 6 (extremely), how much they trusted the research team between 0 (not all) and 6 (completely), how they in their own words felt the CIAO programme helped them, and between 0-6 how likely they were to seek treatment outside. This data was not collected for the purposes of research but provided a useful added insight into how participants found the process. All participants rated between points 4-6 on how beneficial they found the project and levels of trust in the research team. Around half the participants said they were quite or extremely likely to seek treatment outside, but a surprising number stated that they remained

undecided. Reasons why individuals remained on the fence about continued treatment in the community were unclear but anecdotally at assessment stage, many of them stated they previously used cannabis to manage symptoms.

Below are some of quotes from the comments section of the feedback forms:

"I am able to concentrate for longer periods"

"More calmer and relaxed"

"Calmed me down"

"They help me a lot and support me in every area I need to be supported"

"It helped me"

"It calmed me down and helped me get my job and settle down"

"It helps me sleep and think before I do things"

"Calmed me down so I am not running around all the time"

"It is really good help, I hope other people can get the same from it as what I have"

"I have benefitted from it because I am much more calm and relaxed now so it has helped me a lot"

"I believe I have benefitted from this project because I am now able to direct my attention and focus more sufficiently"

"Concentration has got better"

"I'm more organised and more focused on what I'm doing, I am also less angry"

"I find it easier to concentrate in class"

"Got calmer"

"I have been able to control my thoughts"

"I have benefitted from it because it keeps me more focused than I was before"

"I think my concentration is better and I'm able to focus a lot more"

We also looked at some case studies of those entered and completed the trial either to twelve weeks or through into the treatment as usual after the end of 12 week trial.

(1) *Mr. A came into Isis June 13*

- *Was assessed for ADHD at the End of August 2013- positive for Combined Inattentive and Hyperactive/Impulsive ADHD*
- *Was reviewed by Psychiatrist and started on medication in September 2013*
- *Prior to starting, measures were taken not only on core symptoms of ADHD but also affective lability (mood swings), Violence- acceptance of and machismo and incidents.*

*At baseline Mr A:*

- *reported extreme issues with mood instability,*
- *Symptomatic in terms of Inattention and Hyperactivity/Impulsivity*
- *medium scores of machismo (25) and acceptance of violence (13)*
- *In the 3 months prior he had had 1 fight and another adjudication, as well as 3 Negative IEPs*

*By week 12*

- *Symptoms of Hyperactivity and Inattention have now significantly reduced*
- *At 12 weeks he now reports minimal mood instability, managing his mood (despite being given bad news)*
- *His machismo scores have reduced to a minimum (3) Acceptance of violence (9)*
- *He now has got and maintained a job as a cleaner*
- *Has had no adjudications*
- *Has had 2 negative IEPs but also 2 positive IEPs*
- *Has now been made a Violence Reduction Rep*

(2) *Mr. F came into Isis June 13*

- *Was assessed for ADHD mid July 2013- positive for Combined Inattentive and Hyperactive/Impulsive ADHD (had and was diagnosed as a child)*

- Was reviewed by Psychiatrist and started on medication in August 2013

At baseline Mr F:

- reported minimal mood instability,
- A number of Inattentive and Hyperactive/Impulsive ADHD symptoms
- Medium/high scores of machismo (34) and medium scores on acceptance of violence (14)
- In the 3 months prior he had been restrained, had an adjudication, had been on basic for 20 days of the previous 12 weeks
- He had two negative IEPs and little engagement in education

Mr F was on trial for 36 weeks

- Symptoms of Hyperactivity and Inattention have now significantly reduced
- At 24 weeks he now reports no mood instability
- His machismo scores have reduced to a minimum (7)
- He now has got and maintained a job as a cleaner
- Has had no adjudications
- No days on basic
- Has had **No** negative IEPs
- 1 positive IEP

(3) Mr. J came into Isis in April 2013

- Was assessed for ADHD in May 2013- positive for Combined Inattentive and Hyperactive/Impulsive ADHD
- Was reviewed by Psychiatrist and started on medication in June 2013 and has been doing well on medication ever since

At baseline Mr J:

- reported high levels of mood instability,
- A number of Inattentive and Hyperactive/Impulsive symptoms
- Low to medium scores of machismo (14) and medium scores on acceptance of violence (11)
- 1 negative entry for disobeying orders

Mr J was on trial for the full 36 weeks

- At 36 weeks he now reports very minimal mood instability
- No ADHD symptoms
- His machismo scores have reduced to a minimum (5)
- He now has had and maintained a job in the kitchens, trained as a listener and also got a wing orderly job and maintained a job as a cleaner
- Has had no adjudications
- No days on basic
- Has achieved and maintained his **enhanced status**
- Has had **No** negative IEPs in the last three months and has had **1 positive IEP**

(4) Mr. D came into Isis in August 2013

- Was assessed for ADHD in September 2013- positive for Combined Inattentive and Hyperactive/Impulsive ADHD
- Was reviewed by Psychiatrist and started on medication at the end of October 2013 and has been doing well on medication ever since

At baseline Mr D:

- reported high levels of mood instability,
- A number of Inattentive and Hyperactive/Impulsive symptoms
- Medium to high levels of Machismo (35) and medium scores on acceptance of violence (12)

(5) Mr D has was on trial for just over 36 weeks

- *At 12 weeks (the most recent measures taken) he now reports minimal mood instability*
- *Managed and minimal ADHD symptoms*
- *His machismo scores have reduced significantly (10)*
- *He now has had and maintained a job in the staff kitchens, is planning for meaningful activity on release in training and work. He wants to continue treatment on the outside.*
- *Has had no adjudications*
- *No days on basic*
- *Has achieved and maintained his **enhanced** and has been placed on D SPUR*
- *Has had 1 negative IEP in the last three months but also **2 positive IEPs***

## 18. DISCUSSION

We set out to investigate the prevalence of ADHD in a young adult inner London prison and to investigate whether treatment of the disorder with Concerta XL reduced adjudications and increased educational attendance (supporting the rehabilitation agenda at HMP Isis). The study was set up as an open label clinical trial designed as a pilot of the process of diagnosing and treating prisoners with ADHD and estimating effect sizes for a future randomised placebo controlled trial. The study medication was oros-methylphenidate (Concerta XL) one of the drug treatments recommended as first line for ADHD by NICE guidelines.

We found an estimated 19% of prisoners met ADHD diagnostic criteria. This is a gross over representation compared with 2 to 4% in general adult populations but falls slightly short of previous studies that suggest rates of around 26% in convicted young offenders. The population sample was more ethnically diverse than previous studies and the age group (18-30 years) fits neither the young offender nor adult offender category completely. The rates indicate diagnostic levels above that of the general population, indicating a specific relationship between ADHD and offender populations.

In this study the treatment of ADHD with long acting methylphenidate (Concerta XL) was shown not only to reduce core symptoms of ADHD and emotional dysregulation but also total sums of all adjudications, number of disobeyed orders, as well as increasing the number of positive incident earned privileges awarded. Contrary to previous findings, total sums of physical aggression, negative incident earned privileges and reports from officers of participant's levels of modified overt aggression, did not significantly change with treatment. During the 12 week treatment period percentage of attended activities significantly increased. Overall, these findings suggest that the treatment of ADHD with oros-methylphenidate may have a positive impact on rehabilitation agendas within prisons.

Effects were very large for clinical symptoms of ADHD and emotional dysregulation, as well as the machismo scale of the Maudsley violence questionnaire. We were able to use these data to support a large scale randomised controlled trial. on the basis that the results reported here show a decrease of 25.0 points on the CAARS ADHD symptoms scale with a standard deviation of 9.1. This suggested a standardised effect size of  $d=2.75$ . It could reasonably be assumed that 20% of this effect might be attributed to the effects of MPH. On this basis we estimated that a sample size of 200 in a randomised placebo controlled trial (with 25% drop out rate) would be powered to detect a standardised effect size of  $d=0.55$ . Assuming a standard deviation of 9.1, this would translate into a treatment difference of 5.0 points. This effect size is consistent with the results of a recent meta-regression analysis of the effects of methylphenidate in ADHD, which estimates the effect of treatment to be  $d=0.49$  (95% CI 0.08, 0.64).

The correlation and regression models suggest a link between the emotional dysregulation of those with ADHD, a reduction in adjudications as a whole and an increase in days awarded on enhanced regimes.

The study is limited by its small sample size and high drop-out rate. The sample may be biased as potentially those in most need of treatment were either unable to take part or did not complete as they were not able to deal with the shift in behaviour caused by medication. These influences might have resulted in a sample that was underpowered to detect all the areas of adjudication data anticipated. When collecting adjudication information in the future, appropriateness of research assessment tools such as the Modified Overt Aggression Scale may also have to be considered. Having the same prison officer complete this tool at all-time points proved extremely difficult and staff (due to busy schedules) often rushed its completion or commented that the examples were not particularly relevant to the environment.

The large effect sizes on symptom measures suggest a much higher impact of treatment than previous research into methylphenidate has indicated. This may be due to the large amount of psychosocial support that was required in this Open label feasibility trial to help participants deal with behavioural and thought process shifts from taking medication. It might also be accounted for by the severity of ADHD in this young adult prisoner sample. On the other hand, effects on adjudications (the primary outcome) and other prison behavioural measures were small to moderate and might not be clinically significant in a future placebo controlled trial. For example there may be non-specific effects of being treated in the trial, 'or the prison response to 'bad' behaviour, may both bring about improvements not due to medication. A definitive study will need to include a placebo control group to establish true effect sizes.

The outcome of this pilot trial has ultimately been a success because it laid the foundation for funding from the National Institute of Health Research for a larger randomised clinical trial of 200 prisoners with ADHD. The full application and protocol approved by NIHR is appended to this report.

Previous community studies demonstrate the efficacy of MPH and the study drug, OROS-MPH, in children, adolescents and adults with ADHD <sup>11</sup>. However there is still no definitive trial data for the treatment of ADHD in young offenders presenting with a more complex mix of psychosocial, mental health and behavioural problems. To date there has been only one randomised controlled trial of MPH in a forensic population, consisting of a sample of 30 Swedish prisoners with ADHD which showed a large effect (Cohen's  $d=2.1$ )<sup>13,14</sup>. While this study supported the treatment of ADHD in offenders it cannot be considered definitive for the treatment of young offenders because of the small sample size, older age group and selection of severe ADHD cases with long term sentences treated in a special prison unit in Sweden. The current study now provides additional support by showing a large effect ( $d=2.75$ ) on ADHD symptoms, although somewhat smaller on the primary outcome of total adjudications. However these findings are sufficient to suggest that clinically significant effects will be observed in a randomised placebo controlled trial.

The benefits of treatment are expected to extend to a range of secondary outcomes beyond the core symptoms of ADHD and their associated impairments. An epidemiological study indicated the potential benefits of treating ADHD among offenders. This large survey of 25,656 Swedish patients with ADHD found a 6-fold higher rate of criminal convictions in ADHD patients compared to controls and a 32% reduction during periods of drug treatment for ADHD with either MPH or atomoxetine; but not when antidepressants were prescribed, suggesting the specificity of these findings to the treatment of ADHD <sup>15</sup>. In our own prevalence study of ADHD in prison we found a 6-fold increase in critical incidents among prison inmates even after controlling for antisocial personality disorder <sup>6</sup>. Other studies have also reported significant effects of MPH on emotional dysregulation in adolescents and

adults with ADHD, including problems with temper control, mood lability and emotional over-reactivity<sup>9</sup>. Hence, treatment of offenders with ADHD might lead to significant reductions in emotional dysregulation and potentially aggressive or violent behaviour. The symptoms of ADHD are also known to interfere with education and employment due a combination of restlessness, reduced attention span, forgetfulness and problems with planning and organisation<sup>10,11</sup>. Treatment might therefore lead to greater positive engagement with educational and rehabilitation programs within prison. In the current study we also found significant effects on all the secondary outcomes proposed for this study including measures of emotional dysregulation, critical incidents and engagement with the education and rehabilitation program.

## **20. Compliance and adherence to the protocol**

**Adherence to medication:** We found that adherence was a challenge for around 20% of participants. Some offenders may not have felt motivated to continue to follow the study protocol if they experienced adverse effects or did not feel they were improving. They also took medication intermittently because of the strict prison regime that allows for only a short time-window for leaving their cells to obtain medication from the medicine hatch on the prison wings. However, most of these cases were able to continue in the trial to provide follow-up data, hence not contributing to missing data.

**20.1. Missing data:** Loss to follow-up usually resulted from unexpected transfers out of the prison, plus a few cases that had problems with adherence to the protocol. We outline below some of the findings and lessons from this pilot study:

**20.2. Maximizing adherence to medication and minimizing loss to follow-up:** In this pilot study we accrued considerable experience in managing the expectation of offenders and providing the support needed to help participants adhere to the protocol. The following steps are recommended to minimise loss to follow-up and adherence to future trial protocols in this population:

- (1) In the pilot study 12% left the prison unexpectedly. Missing data was loss at random because transfers out of the prison (to other prisons or the community) were unrelated to recent behaviour that might be influenced by the trial protocol, such as further pending court cases; and we did not obtain follow-up data following transfers. In future studies we will limit this source of missing data by retaining participants who leave the prison in the study, whenever possible.
- (2) In the pilot, minor adverse effects (13%) were the most common reason for non-adherence to medication. This was linked to the observation that this population may be more sensitive to minor adverse effects, particularly changes in appetite, than community samples; perhaps reflecting the importance of meal times to prisoners. To maximise adherence to the protocol and minimise this as a potential source of missing data, future studies should take care to identify the early signs of minor adverse effects such as appetite loss and adjust the medication dose accordingly.
- (3) Seven percent of the pilot sample did not wish to take medication in the mornings (08:00), which was the initial protocol followed in the pilot study. We then adjusted the protocol to allow for 12:00 medication for those that got up later in the day, worked mainly in the afternoons or had a strong preference for a 12:00 dosing, which resolved the problem. This flexibility in dosing time more accurately reflects dosing decisions in the community and provided a better match to patient's daily routines.
- (4) During the pilot study, prison staff did not always let patients out of their cells to receive medication or remind participants to get up on time. To resolve this problem we initiated the use of research staff to assist in the delivery of medication by checking that prisoners were always out of their cells on time to receive trial medication.
- (5) In the pilot study, treatment was disrupted for the Ramadan festival for several participants. Future studies need to take care to check that participants are not started on trial medication where religious holidays might interfere with adherence to the trial protocol.

- (6) In the pilot study, daily adherence to the trial medication reduced when participants were not reviewed weekly. One of the findings in the pilot study was the importance that prisoners gave to the weekly follow-up meetings when they are able to discuss their ADHD and response to the treatment process, in addition to completing study assessments. Future studies should plan for weekly review meetings with offenders throughout the 8-week trial.

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# Appendix 1: Information sheets and consent forms

Social Genetic and Developmental Psychiatry Research  
Centre & Division of Psychological Medicine, Section of  
Brain Maturation, Institute of Psychiatry, King's College  
London



South London and Maudsley **NHS**  
NHS Foundation Trust

## Participant Information Sheet The CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

You are invited to take part in a research study. If you agree to take part there are three stages. First, a screener will be used to indicate possible ADHD; and from which we would like to use your anonymised data.

Before you decide whether you want to take part, it is important to understand why the research is being done and what it will involve. Please take time to read this information about the study and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part in the study. Taking part in this study is your choice - it will not affect your prison sentence or health care if you decide you do not wish to take part in the study. Thank you for reading this.

### What is the purpose of the study?

You are invited to take part in a research study looking at the rate of Attention Deficit Hyperactivity Disorder (more often known as ADHD) in prison. It is thought that many people in prison may have ADHD that has not been recognised or treated. However this has not been studied in Belmarsh HMPYOI Isis and there is limited information from other prisons.

Where we find that someone has ADHD we will offer them treatment. The treatment can be given either by taking part in a clinical trial of medication for ADHD, or alternatively by the prison healthcare team.

### What is ADHD?

ADHD is a problem that usually starts in early childhood and causes problems with concentration and being too active or impulsive in everyday situations. ADHD affects about 1 in 50 adults in England and is thought to affect more people in prisons.

The problems with concentration can make it difficult for people with ADHD to complete everyday tasks. People with ADHD often feel irritable, frustrated, aggressive or angry, as well as having problems with their concentration, being forgetful or losing things and finding it difficult to plan and organise their day. In prison people with ADHD may find it difficult to manage work activities, get bored and frustrated very quickly or have times when they can't control their anger.

### **Why have I been chosen?**

You have been invited to take in this study because you are inmate at HMP/YOI Isis and we are aiming to screen the entire prison. This information will enable us to estimate possible rates of ADHD within this prison.

### **Do I have to take part?**

No, it is up to you to decide whether to take part.

If you do decide to take part, we will give you this information sheet and ask you to sign a form agreeing to take part in the study. You will still be free to leave the study at any time without giving a reason, if you wish.

Taking part in this study or not will have no effect on your care in the prison or the length of your prison sentence.

### **What will I be asked to do if I take part?**

If you decide to take part, we will ask you to sign a consent form. We will complete a quick five minute screener with you.

### **What are the possible benefits of taking part?**

You do not have to take part in this research to complete the screener for ADHD. However we hope that you will take part in the study, as this will enable us to find out more about ADHD in prison so what we can better help people with ADHD in the future.

If we find you screen positive for ADHD, we may with invite you for a full assessment and may be able to offer you treatment if a diagnosis is confirmed. We will invite those that have ADHD to receive treatment as part of a clinical trial, or alternatively as part of the usual treatments provided by the prison healthcare team.

### **What are the possible disadvantages and risks of taking part?**

We are asking you to give us your time to review this information sheet. You may also feel that you do not want to complete an ADHD screener. The screener for ADHD involves answering questions about problems related to ADHD and some people might find this difficult to cope with or distressing to discuss.

### **Confidentiality**

If you agree to take part in this project, the research team will look at your medical and prison records. This is because we wish to find out more about the way ADHD affects people in prison and the way they manage in education and work.

Other authorised people may need to look at your medical and prison records to check that the study is being carried out correctly.

All personal information about you will be strictly confidential and will be stored in a secure place. This means that outside of the immediate healthcare team involved in this research, no one will be able to match your personal information (your name and prison number for example) with the information that we gather for the research. After we have completed the study any personal information we hold will be destroyed.

Your personal details will only be used to contact you about the study. Your personal details will not be linked to your clinical or prison records in our research records. The clinical data and prison records that we use for research will be identified using a study ID code and not your name or prison number. We will be able to link your personal details to the study ID code - however this is kept separately to any information from the study or your health care or prison records.

### **What will happen to the results of the research study?**

The research will be analysed by the ADHD research group at King's College London, led by Professor Philip Asherson. He is one of the leading experts on ADHD and will work with the prison healthcare team for the duration of the project. The results of the study will be published in scientific journals. All personal information will remain strictly confidential so you will not be recognised in any of the research reports.

Research data in a form that cannot be traced back to you as an individual may be shared with other scientists or research groups where this helps us to understand the findings of the study; and may also be used in combination with data from other studies. We will be able to send you a report of the study findings after the research has been completed if you are interested and give us permission to keep your contact details for this reason.

### **Who is organising the research?**

This research is organised by the Institute of Psychiatry, King's College London and South London and Maudsley NHS Foundation Trust.

### **Who is funding the research?**

The research is funded by an NIHR programme grant, Janssen-Cilag who is providing the medication, the South London Maudsley NHS Trust, and research funds held by Professor Declan Murphy. The study is being undertaken by Professor Asherson and his team at the Institute of Psychiatry, King's College London in collaboration with Professor Declan Murphy.

### **Who has reviewed the study?**

The study has been subject to peer review by expert referees at the Institute of Psychiatry. Ethical approval has been granted by the NRES Committee London – South East.

### **What do I do now?**

We will discuss the project with you to make sure you understand the aims of the project and what is involved. If you wish to take part we will ask you to sign a consent form that is attached with this information sheet. We hope that you will be able to take part in this important project.

### **Contact for further information:**

If you have any questions about the CIAO Project please feel free to contact the research coordinator, Clare Evans (email: [clare.2.evans@kcl.ac.uk](mailto:clare.2.evans@kcl.ac.uk); tel: 020 7848 5362; by post: SGDP Centre, P080, Institute of Psychiatry, De Crespigny Park, London SE5 8AF).

If you have any further queries and would like to seek independent advice on whether to take part in this study, please contact the SLaM Patient Liaison Service (tel: 0800 7312864; email: [pals@slam.nhs.org.uk](mailto:pals@slam.nhs.org.uk)).



Social Genetic and Developmental Psychiatry  
Research Centre & Division of Psychological  
Medicine, Section of Brain Maturation,  
Institute of Psychiatry, King's College London

South London and Maudsley **NHS**  
NHS Foundation Trust

## Consent to participate in the CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

Participant ID: \_\_\_\_\_

**Please initial box**

1. I confirm that I have read and understand the information sheet dated 4<sup>th</sup> of June 2013, version 1.4, for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
3. I understand that sections of my medical notes may be updated to include the results of this Attention Deficit Hyperactivity Disorder (ADHD) screener. To enable monitoring of the conduct of the study, I give permission for regulatory authorities or individuals from the South London and Maudsley NHS Foundation Trust to access my clinical and research records.
4. I agree to take part in the above study.
5. I agree that my anonymised research data from this study will be stored securely and may be shared with other scientists or research groups where this helps us to understand the findings of the study. The data may also be used in combination with data from other similar studies. In the event of publication, I understand that due care will be taken to preserve the confidentiality of my information

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Person taking consent  
(If different from Researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

I have explained the study to the participant and have answered their questions honestly and fully.



\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

Social Genetic and Developmental Psychiatry Research  
Centre & Division of Psychological Medicine, Section of  
Brain Maturation, Institute of Psychiatry, King's College  
London

South London and Maudsley   
NHS Foundation Trust

## Participant Information Sheet The CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

You are invited to take part in a research study. If you agree to take part there are two stages. First, a diagnostic assessment or test that will be used to confirm the diagnosis of ADHD; and from which we would like to use your data. Following this, if the diagnosis of ADHD is confirmed there is a second part – a treatment stage – where you will be given the medication Concerta XL. Not everyone who has the diagnostic test will be suitable for this second part that involves drug treatment. This information sheet is about the first stage of the study.

Before you decide whether you want to take part, it is important to understand why the research is being done and what it will involve. Please take time to read this information about the study and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part in the study. Taking part in this study is your choice - it will not affect your prison sentence or health care if you decide you do not wish to take part in the study. Thank you for reading this.

### What is the purpose of the study?

You are invited to take part in a research study looking at the rate of Attention Deficit Hyperactivity Disorder (more often known as ADHD) in prison. It is thought that many people in prison may have ADHD that has not been recognised or treated. However this has not been studied in Belmarsh HMPYOI Isis and there is limited information from other prisons.

Where we find that someone has ADHD we will offer them treatment. The treatment can be given either by taking part in a clinical trial of medication for ADHD, or alternatively by the prison healthcare team.

### What is ADHD?

ADHD is a problem that usually starts in early childhood and causes problems with concentration and being too active or impulsive in everyday situations. ADHD affects about 1 in 50 adults in England and is thought to affect more people in prisons.

The problems with concentration can make it difficult for people with ADHD to complete everyday tasks. People with ADHD often feel irritable, frustrated, aggressive or angry, as well as having problems with their concentration, being forgetful or losing things and finding it difficult to plan and organise their day.

In prison people with ADHD may find it difficult to manage work activities, get bored and frustrated very quickly or have times when they can't control their anger.

### **Why have I been chosen?**

You have been invited to take in this study because you completed an assessment with the prison healthcare team that indicate that you might have ADHD. In order to find out whether you have ADHD we would like to complete a clinical assessment by asking you detailed questions about problems related to ADHD. This information will enable us to estimate the rates of ADHD within this prison and to find out more about the way that ADHD can affect people in prison.

We would also like your permission to link the data on ADHD to your prison and healthcare records. This will enable us to find out more about the problems that people with ADHD have in prisons. We will look at whether ADHD or other health problems affect your behaviour within the prison and your ability to take part in educational and other activities.

### **Do I have to take part?**

No, it is up to you to decide whether to take part.

If you do decide to take part, we will give you this information sheet and ask you to sign a form agreeing to take part in the study. You will still be free to leave the study at any time without giving a reason, if you wish.

Taking part in this study or not will have no effect on your care in the prison or the length of your prison sentence.

### **What will I be asked to do if I take part?**

If you decide to take part, we will ask you to sign a consent form. We will complete a diagnostic assessment for ADHD which usually takes around 1 hour, but can take longer. We will also ask you for permission to use information from your health care and prison records for this research.

### **What are the possible benefits of taking part?**

You do not have to take part in this research to complete an assessment for ADHD. However we hope that you will take part in the study, by giving permission for us to your medical and prison records for this research. This will enable us to find out more about ADHD in prison so what we can better help people with ADHD in the future.

If we find that you have ADHD, we may be able to offer you treatment. We will invite those that have ADHD to receive treatment as part of a clinical trial, or alternatively as part of the usual treatments provided by the prison healthcare team.

### **What are the possible disadvantages and risks of taking part?**

We are asking you to give us your time to review this information sheet. You may also feel that you do not want to complete an assessment for ADHD. The assessment for ADHD involves answering questions about your problems related to ADHD and some people might find this difficult to cope with or distressing to discuss.

### **Confidentiality**

If you agree to take part in this project, the research team will look at your medical and prison records. This is because we wish to find out more about the way ADHD affects people in prison and the way they manage in education and work.

Other authorised people may need to look at your medical and prison records to check that the study is being carried out correctly.

All personal information about you will be strictly confidential and will be stored in a secure place. This means that outside of the immediate healthcare team involved in this research, no one will be able to match your personal information (your name and prison number for example) with the information that we gather for the research. After we have completed the study any personal information we hold will be destroyed.

Your personal details will only be used to contact you about the study. Your personal details will not be linked to your clinical or prison records in our research records. The clinical data and prison records that we use for research will be identified using a study ID code and not your name or prison number. We will be able to link your personal details to the study ID code - however this is kept separately to any information from the study or your health care or prison records.

### **What will happen to the results of the research study?**

The research will be analysed by the ADHD research group at King's College London, led by Professor Philip Asherson. He is one of the leading experts on ADHD and will work with the prison healthcare team for the duration of the project. The results of the study will be published in scientific journals. All personal information will remain strictly confidential so you will not be recognised in any of the research reports.

Research data in a form that cannot be traced back to you as an individual may be shared with other scientists or research groups where this helps us to understand the findings of the study; and may also be used in combination with data from other studies. We will be able to send you a report of the study findings after the research has been completed if you are interested and give us permission to keep your contact details for this reason.

### **Who is organising the research?**

This research is organised by the Institute of Psychiatry, King's College London and South London and Maudsley NHS Foundation Trust.

### **Who is funding the research?**

The research is funded by an NIHR programme grant, Janssen-Cilag who is providing the medication, the South London Maudsley NHS Trust, and research funds held by Professor Declan Murphy. The study is being undertaken by Professor Asherson and his team at the Institute of Psychiatry, King's College London in collaboration with Professor Declan Murphy.

### **Who has reviewed the study?**

The study has been subject to peer review by expert referees at the Institute of Psychiatry. Ethical approval has been granted by the NRES Committee London – South East.

### **What do I do now?**

We will discuss the project with you to make sure you understand the aims of the project and what is involved. If you wish to take part we will ask you to sign a consent form that is attached with this information sheet. We hope that you will be able to take part in this important project.



**Contact for further information:**

If you have any questions about the CIAO Project please feel free to contact the research coordinator, Clare Evans (email: [clare.2.evans@kcl.ac.uk](mailto:clare.2.evans@kcl.ac.uk); tel: 020 7848 5362; by post: SGDP Centre, P080, Institute of Psychiatry, De Crespigny Park, London SE5 8AF).

If you have any further queries and would like to seek independent advice on whether to take part in **Social Genetic and Developmental Psychiatry** Service (tel: 0800 7312864; email: [sgdp@kcl.ac.uk](mailto:sgdp@kcl.ac.uk))  
Research Centre & Division of Psychological  
Medicine, Section of Brain Maturation,  
Institute of Psychiatry, King's College London

South London and Maudsley   
NHS Foundation Trust

## Consent to participate in the CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

Participant ID: \_\_\_\_\_

**Please initial box**

6. I confirm that I have read and understand the information sheet dated 4<sup>th</sup> of June 2013, version 2.5, for the above study and have had the opportunity to ask questions.
7. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
8. I understand that sections of my medical notes may be looked at to check the inclusion and exclusion criteria for the study. I give permission for Professor Asherson and his research team to have access to my medical and prison records. To enable monitoring of the conduct of the study, I give permission for regulatory authorities or individuals from the South London and Maudsley NHS Foundation Trust to access my clinical and research records.
9. I agree to take part in the above study.
10. I agree that my anonymised research data from this study will be stored securely and may be shared with other scientists or research groups where this helps us to understand the findings of the study. The data may also be used in combination with data from other similar studies. In the event of publication, I understand that due care will be taken to preserve the confidentiality of my information

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



\_\_\_\_\_  
Name of Person taking consent  
(If different from Researcher)

\_\_\_\_\_  
Date  
Signature

I have explained the study to the participant and have answered their questions honestly and fully.

Social Genetic and Developmental Psychiatry Research  
Centre & Division of Psychological Medicine, Section of  
Brain Maturation, Institute of Psychiatry, King's College  
London

\_\_\_\_\_  
Signature

South London and Maudsley   
NHS Foundation Trust

## Participant Information Sheet The CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

You are invited to take part in a research study. Before you decide whether you want to take part, it is important to understand why the research is being done and what it will involve. Please take time to read this information about the study and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part in the study. Taking part in this study is your choice - it will not affect your prison sentence or health care if you decide you do not wish to take part in the study. Thank you for reading this.

### What is the study about?

You are invited to take part in a study to find out about the effects of a drug treatment for a common disorder seen in young adults, called Attention Deficit Hyperactivity Disorder – more often known as ADHD.

ADHD is a common condition that effects concentration, being too fidgety or restless, and having problems controlling reactions to different people or situations – for example being too angry, talking too much, interrupting people all the time, or feeling irritable when having to wait in queues. People with ADHD are often disorganised in the way they go about things and find it difficult to start or complete tasks, complete paper forms, manage their money and focus on jobs or education activities.

We already know that certain medical drugs can help to reduce these problems in people with ADHD. However few people with ADHD in prisons are offered treatment. We therefore want to find out whether medical treatment for ADHD can help people with ADHD – by reducing the symptoms and problems related to ADHD.

In this study we want to find out more about the effects of treatment for ADHD using a medication that is often used to treat children and adults. If the medication is helpful we will provide support so that treatment can be continued after you leave the prison.

## **What is ADHD?**

ADHD is a problem that usually starts in early childhood and causes problems with concentration and being too active or impulsive in everyday situations. ADHD affects about 1 in 50 adults in England and is thought to affect more people in prisons.

The problems with concentration can make it difficult for people with ADHD to complete everyday tasks. People with ADHD often feel irritable, frustrated, aggressive or angry, as well as having problems with their concentration, being forgetful or losing things and finding it difficult to plan and organise their day. In prison people with ADHD may find it difficult to manage work activities, get bored and frustrated very quickly or have times when they can't control their anger.

The usual treatment for ADHD is a drug called methylphenidate, or MPH for short. Most people have heard of Ritalin that is sometimes given to children with ADHD – Ritalin is in fact the same as MPH, but there are several other drugs also made of MPH, including one called Concerta XL. We will use Concerta XL in this study.

Drugs like Ritalin and Concerta XL reduce the problems related to ADHD. Some of the benefits include:

- Improved concentration
- Improved ability to focus on tasks and not get distracted
- Having a less busy and more focused mind
- Feeling less restless and fidgety
- Being more patient when waiting
- Being less irritable or angry Finding it easier to work with other people and engage in work activities
- Feeling more calm and better able to control emotions such as feeling too irritable or angry or having mood swings

## **Why have I been invited to take part in this study?**

We are inviting you to take part in this study because your assessment by the prison healthcare service found that you have ADHD. We are inviting all people who have ADHD and who might benefit from treatment to take part in this study.

## **Do I have to take part?**

No, it is up to you to decide whether to take part.

If you do decide to take part, we will give you this information sheet and ask you to sign a form agreeing to take part in the study. You will still be free to leave the study at any time without giving a reason, if you wish.

Taking part in this study or not will have no effect on your care in the prison or the length of your prison sentence.

## **What will happen to me if I take part?**

If you take part in this study you will be given Concerta XL to be taken each day for a period of 3 months initially. This can then be extended for another 6 months if you wish.

Concerta XL is a drug that is recommended for the treatment of ADHD in England. If you take part in the study and start Concerta XL, we will follow you up for 3 months to see whether the medication helps you. After that we will ask you if you are willing to remain in the study for another 6 months.

During the study you will be given Concerta XL each morning. The effects of the drug last around 10 hours and then wear off. The most common effect is for people to find they can concentrate better and feel calmer with a more stable mood. We will closely watch the effects that Concerta XL has on you with weekly medical assessments for the first 4 weeks of the study. We will check to see if there are side effects that you do not like or might be dangerous to your health. We will check your pulse and blood pressure during these assessments and ask you about problems related to ADHD.

During the first 4 weeks we will slowly increase the dose of medication to find that dose that is best for you. After the first 4 weeks the dose will then remain the same.

The main part of the study last for 3 months. After that time you will be asked whether you wish to continue in the study for a further 6 months. Once you decide to leave the study or at the end of the 9 months, you will be seen by a medical doctor to determine if you have benefited from taking the medication. Should you and the doctor wish to continue the medication, this can then be continued. We will also help you to obtain your medication once you leave the prison.

### **What will I be asked to do if I take part in the study?**

We will ask you to take Concerta XL each morning for a period of 12 weeks or more. You will be able to continue with any other medications you already take. We will check to make sure any other drugs do not interact with Concerta XL in a bad way.

We will be asking you questions about your ADHD and will also ask you to complete some forms about how you are feeling and managing in the prison (we can help you with this). This will be done at the following times:

- before starting the medication
- once a week for the first five weeks of the study
- after 8 weeks and 12 weeks of the study

At weeks 0, 5, 8 and 12, there will be an optional computer task that will look at how fidgety you are and how well you can concentrate. You do not have to complete the computer task to be in the study but it will help us to understand how the medication is working.

If you decide to continue the medication and remain in the study after 12 weeks, we will repeat the questions and computer task after another 3 months and 6 months.

### **How much time will this take?**

There is a lot to do if you take part in this study. We will see you at least eight times in the first part of the study, which lasts for 3 months. Please remember this when you decide if you want to take part.

Before you start the treatment for ADHD we will meet you and ask you questions about your ADHD and also ask to complete several forms about yourself (which we can help you with). We will also take your pulse and blood pressure and ask you if you want to complete the computer task. This will take about 2 hours.

We will again ask you some of the same questions and ask you to do the computer task after 3 months, so we can see how the medication may have helped you. If you decide to remain in the study we will do this again after another 3 months and 6 months.

Once the treatment is started, at the beginning of the study, we will see you each week for about 30 minutes, to ask you questions about the effects of the medication and whether there are side effects.

We will also take your pulse and blood pressure. We will do this once a week for 5 weeks. During this time we will slowly increase the dose of the medication as long as there are no side effects. You will be able to discuss this with one of the doctors in the mental health team.

The study will take up to 9 hours of your time over a 9-month period if you stay in the study to the end.

### **What are the possible benefits of taking part?**

Concerta XL is one of the most widely used drug treatments for ADHD in England. Concerta XL is not licensed for use in adults who were not treated for ADHD as children. However drug treatment with Concerta XL is recommended for use in England by the National Institute for Clinical Excellence (NICE). This means that doctors have been told that this drug can be used to treat adults with ADHD, even though this is outside of its licensed use.

In people with ADHD, the usual effect after taking the medication is to feel calmer and in more control of your emotions; to have better concentration and find it easier to focus your thoughts on what you are doing; and to feel less fidgety and restless. Some people find it easier to get off to sleep.

By taking part in this study you will find out whether Concerta XL can help you with the problems related to ADHD. It will also help us to find out whether this drug can help other people with ADHD who are in prison. We hope that the treatment will help you feel less stressed and better able to manage your life.

If you find the treatment helpful, we will make arrangements for continuation after the study has ended and when you leave the prison.

### **What are the possible disadvantages and risks of taking part?**

Like all drug treatments, Concerta XL can cause side effects.

Many of the common side effects stop after 1 or 2 weeks, however some may continue. You may also have side effects that stop you using Concerta XL because they are not nice to experience or have a bad effect on your health. In some rare cases more severe side effects can occur that would lead us to stop the drug immediately.

Side effects go from very common to very rare. They include the following:

- **Very common side effects:** Affect more than 1 in 10 people. Include headache, nervous feelings and difficulty sleeping.
- **Common side effects:** Less than 1 in 10 people. Include dizziness, drowsiness, blurred vision, loss of appetite, weight loss, increased aggression or hostility, stomach pain or upset, inability to develop or maintain an erection, heart palpitations, increased blood pressure and heart rate.
- **Uncommon side effects:** Less than 1 in 100 people. Concerta XL can cause chest pain, hallucinations or delusions, worsening of tics, blood disorders or inflammation of blood vessels in the brain.
- **Rare side effects:** Less than 1 in 1,000 people may feel unusually excited, out of control or manic.
- **Very rare side effects:** Less than 1 in 10,000 people have very serious side effects. Those that have been reported include heart attack, sudden death and liver failure.

You will be monitored closely by medical and nursing staff to ensure that any side effects are found early and treated quickly. If serious side effects occur, the medication will be discontinued immediately.

If at any time you think you may have side effects or unwanted effects of the drug, you should contact the prison mental health team.

During the assessment we will ask you about problems related to ADHD and other mental health problems. Some of the questions we ask you about yourself may bring up sensitive issues. If you become upset and wish to talk to someone, we will tell you where you can get support and advice.

### **Confidentiality**

If you agree to take part in this project, the research team will look at your medical and prison records. We will also be talking to prison and education staff to find out how you have been doing. This is because part of the research is to see whether treatment for ADHD can help you with your education and work programme, and to see whether you experience fewer problems like becoming very angry or aggressive (if you have this problem).

Other authorised people may need to look at your medical and prison records to check that the study is being carried out correctly.

All personal information about you will be strictly confidential and will be stored in a secure place. This means that outside of the immediate healthcare team involved in this research, no one will be able to match your personal information (your name and prison number for example) with the information that we gather for the research. After we have completed the study any personal information we hold will be destroyed.

Your personal details will only be used to contact you about the study. Your personal details will not be linked to your clinical or prison records in our research records. The clinical data and prison records that we use for research will be identified using a study ID code and not your name or prison number. We will be able to link your personal details to the study ID code - however this is kept separately to any information from the study or your health care or prison records.

Any information you give the research team will remain entirely confidential and not shared with other prison staff. The only times the research team would need to break this confidentiality and disclose information to prison staff, is if you were to make a threat by intending to harm yourself or someone else, or were a threat to security.

### **What will happen to the results of the research study?**

The research will be analysed by the ADHD research group at King's College London, led by Professor Philip Asherson. He is one of the leading experts on ADHD and will work with the prison healthcare team for the duration of the project. The results of the study will be published in scientific journals. All personal information will remain strictly confidential so you will not be recognised in any of the research reports.

Research data in a form that cannot be traced back to you as an individual may be shared with other scientists or research groups where this helps us to understand the findings of the study; and may also be used in combination with data from other studies. We will be able to send you a report of the study findings after the research has been completed if you are interested and give us permission to keep your contact details for this reason.

### **Who is organising the research?**

This research is organised by the Institute of Psychiatry, King's College London and South London and Maudsley NHS Foundation Trust.

### **Who is funding the research?**

The research is funded by an NIHR programme grant, Janssen-Cilag who is providing the medication, the South London Maudsley NHS Trust, and research funds held by Professor Declan Murphy. The study is being undertaken by Professor Asherson and his team at the Institute of Psychiatry, King's College London in collaboration with Professor Declan Murphy.

### **Who has reviewed the study?**

The study has been subject to peer review by expert referees at the Institute of Psychiatry. Ethical approval has been granted by the NRES Committee London – South East. The study is registered as a clinical trial and is guided by the regulations for clinical trials in the UK.

### **What do I do now?**

We will discuss the study with you to make sure you understand what is involved. If you wish to take part we will ask you to sign a consent form that is attached with this information sheet. We hope that you will take part in this important project.

### **What do I do if there is a problem?**

If you have a concern about any aspect of this study, you should ask to speak to someone in the research team who will do their best to answer your questions. You may ask to see one of the research team by contacting the prison healthcare team. You may also call the telephone number 020 7848 5362 to speak to the study coordinator.

If you remain unhappy and wish to complain formally, you can do this by contacting the Trust's Complaints Department (tel: 020 3228 2444/2499 or email: [Complaints@slam.nhs.uk](mailto:Complaints@slam.nhs.uk)).

In the event that something does go wrong and you are harmed during the research and this is due to someone's negligence then you may have grounds for a legal action for compensation against the Trust, but you may have to pay your legal costs. The normal NHS complaints mechanisms will still be available to you.

### **Contact for further information:**

If you have any questions about the Ciao Project please feel free to discuss the project with a member of the mental health team. You may contact the research coordinator, Clare Evans (email: [clare.2.evans@kcl.ac.uk](mailto:clare.2.evans@kcl.ac.uk); telephone: 020 7848 5362; by post: SGDP Centre, P080, Institute of Psychiatry, De Crespigny Park, London SE5 8AF) for further information.

If you have any further queries and would like to seek independent advice on whether to take part in this study please contact the SLaM Patient Liaison Service (telephone: 0800 7312864; email: [pals@slam.nhs.org.uk](mailto:pals@slam.nhs.org.uk)).



## Consent to participate in the CIAO Project

**Project Title:** A Pilot Study of Concerta XL in Adult Offenders with ADHD

Participant ID: \_\_\_\_\_

**Please initial box**

11. I confirm that I have read and understand the information sheet dated 4<sup>th</sup> of June, version 3.1, for the above study and have had the opportunity to ask questions.

12. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

13. I understand that sections of my medical notes may be looked at to confirm the clinical diagnosis of ADHD and check the inclusion and exclusion criteria for the study. I give permission for Professor Asherson and his research team to have access to my medical and prison records. To enable monitoring of the conduct of the study, I give permission for regulatory authorities or individuals from the South London and Maudsley NHS Foundation Trust to access my clinical and research records.

14. I agree to take part in the above study.

15. I agree that my anonymised research data from this study will be stored securely and may be shared with other scientists or research groups where this helps us to understand the findings of the study. The data may also be used in combination with data from other similar studies. In the event of publication, I understand that due care will be taken to preserve the confidentiality of my information.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Person taking consent  
(If different from Researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

I have explained the study to the participant and have answered their questions honestly and fully.

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

# Appendix 2: Information sheets and consent forms

|   | Visit 1  | Visit 2: Provide information for 1 <sup>st</sup> part of study (15 min) | Visit 3: Consent (10 min) | Visit 4: DVA Interview (1 hr) | Visit 5: Psychiatrist assessment Visit 5: Provide information for 2 <sup>nd</sup> part of study (30 min) | Visit 7: Consent 2 <sup>nd</sup> part (10 min) | Visit 8: Baseline (1.5-2.0 hr) | Visit 9: Dose adjustment (week 1) (30 min) | Visit 10: Dose adjustment (week 2) (30 min) | Visit 11: Dose adjustment (week 3) (30 min) | Visit 12: Dose adjustment (week 4) (30 min) | Visit 13: Dose review & assessment (week 5) (45 min) | Visit 14: assessment (week 6) (45 min) | Visit 15: assessment (week 12) (1.5-2.0 hr) | Visit 16: assessment (week 24) (1.5-2.0 hr) | Visit 17: assessment (week 36) (1.5-2.0 hr) |
|---|--|---|---------------------------|-------------------------------|--|--|--------------------------------|--|---|---|---|--|--|---|---|---|
|   | Direct patient measures  |   |                           |                               |  |  |                                |  |   |   |   |  |  |   |   |   |
| Information and Consent for use of screening data   | X  |   |                           |                               |  |  |                                |  |   |   |   |  |  |   |   |   |
| Information sheet                                   |  | X   |                           |                               | X  |  |                                |  |   |   |   |  |  |   |   |   |
| Consent   |  |   | X                         |                               |  | X  |                                |  |   |   |   |  |  |   |   |   |
| DVA   |  |   |                           | X                             |  |  |                                |  |   |   |   |  |  |   |   |   |
| WRAADS  |  |   |                           |                               |  |  | X                              |  |   |   |   | X  | X                                      | X   | X   | X   |
| CAARS-O ADHD item subscale                          |  |   |                           |                               |  |  | X                              | X  | X   | X   | X   | X  | X                                      | X   | X   | X   |
| ALS   |  |   |                           |                               |  |  | X                              |  |   |   |   | X  | X                                      | X   | X   | X   |
| WASI (IQ)   |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  |   |   |   |
| GSS   |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  |   |   |   |
| IRVQ  |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| BSI   |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| CGI   |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| Berkley Conduct disorder scale                      |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  |   |   |   |
| Pulse, blood pressure, AE Scale                     |  |   |                           |                               |  |  | X                              | X  | X   | X   | X   | X  | X                                      | X   | X   | X   |
| QoTest (optional)                                   |  |   |                           |                               |  |  | X                              |  |   |   |   | X  | X                                      | X   | X   | X   |
|   | Indirect measures (from prison records and prison/educational staff) |   |                           |                               |  |  |                                |  |   |   |   |  |  |   |   |   |
| N Critical incidents                                |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| N Disruptive behaviour reports                      |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| Prison/nurse staff MOAS                             |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| Education staff MOAS                                |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| Educational engagement (N sessions attended)        |  |   |                           |                               |  |  | X                              |  |   |   |   |  |  | X   | X   | X   |
| Behaviour in educational and prison social sessions |  |   |                           |                               |  |  | X                              |  |   |   | X   |  | X                                      | X   | X   | X   |

# Appendix 3: Adverse Events Log

| id | Event no | Event name  | Status | date started          | date ended            | Serious | MED | Intensity | outcome |
|----|----------|---|--------|-----------------------|-----------------------|---------|-----|-----------|---------|
| 1  | 1        | "superficial scratches on left arm"   | 1      | "2013-03-10 00:00:00" | "2013-03-11 00:00:00" | 1       | 1   | 1         | 0       |
| 1  | 2        | "appetite loss"   | 1      | "2013-03-12 00:00:00" | ""                    | 1       | 1   | 0         | 0       |
| 1  | 3        | "hearing voices of brother (happened before)"                                   | 1      | "2013-03-13 00:00:00" | ""                    | 2       | 1   | 1         | 2       |
| 5  | 1        | "watery eyes (005 thinks is hayfever)"  | 1      | "2013-03-13 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 5  | 2        | "some loss of appetite"   | 1      | "2013-03-14 00:00:00" | ""                    | 1       | 1   | 0         | 0       |
| 9  | 1        | "Loss of appetite"  | 1      | "2013-03-14 00:00:00" | ""                    | 1       | 1   | 0         | 0       |
| 12 | 1        | "headache"  | 1      | "2013-03-18 00:00:00" | "2013-03-19 00:00:00" | 1       | 1   | 1         | 0       |
| 12 | 2        | "poor appetite"   | 1      | "2013-03-18 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 12 | 3        | "sleep issues"  | 1      | "2013-03-18 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 5  | 3        | "twitching"   | 1      | "2013-03-19 00:00:00" | "2013-03-20 00:00:00" | 2       | 1   | 1         | 0       |
| 5  | 4        | "agitation"   | 1      | "2013-03-18 00:00:00" | "2013-03-20 00:00:00" | 2       | 1   | 1         | 0       |
| 1  | 4        | "cannot keep food down- asked him to try and eat. Research team to look into"   | 1      | "2013-03-21 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 5  | 5        | "Not being able to stay seated and focus"                                       | 1      | "2013-03-19 00:00:00" | "2013-03-20 00:00:00" | 2       | 1   | 1         | 0       |
| 12 | 4        | "confusion and insomnia"  | 1      | "2013-03-19 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 1  | 5        | "vommiting at dinner"   | 1      | "2013-03-21 00:00:00" | ""                    | 1       | 1   | 0         | 2       |
| 1  | 6        | "Reported wanting to self-harm and then acted on this. Self-harm by scratching" | 1      | "2013-03-25 00:00:00" | "2013-03-26 00:00:00" | 2       | 1   | 1         | 0       |

|    |   |                                       |   |                       |                       |   |   |   |   |
|----|---|---------------------------------------|---|-----------------------|-----------------------|---|---|---|---|
| 12 | 5 | "over focus and severe sleep issues"  | 1 | "2013-03-25 00:00:00" | "2013-03-26 00:00:00" | 1 | 1 | 1 | 0 |
| 5  | 6 | "Twitching of hand and sweating"      | 1 | "2013-03-27 00:00:00" | "2013-03-29 00:00:00" | 1 | 1 | 0 | 0 |
| 1  | 7 | "vomitting up meals"                  | 1 | "2013-03-28 00:00:00" | "2013-03-29 00:00:00" | 1 | 1 | 0 | 0 |
| 5  | 7 | "very dry skin and lips"              | 1 | "2013-04-04 00:00:00" | "2013-04-04 00:00:00" | 1 | 2 | 0 | 0 |
| 9  | 2 | "dry skin patches"                    | 1 | "2013-04-04 00:00:00" | "2013-04-04 00:00:00" | 1 | 2 | 0 | 0 |
| 9  | 3 | "possible hernia"                     | 1 | "2013-03-27 00:00:00" | ""                    | 1 | 1 | 0 | 0 |
| 31 | 1 | "feeling dizzy related to poor sleep" | 1 | "2013-03-27 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 31 | 2 | "leg pain"                            | 1 | "2013-03-29 00:00:00" | ""                    | 1 | 2 | 1 | 0 |
| 31 | 3 | "leg pain"                            | 2 | "2013-03-31 00:00:00" | ""                    | 1 | 2 | 1 | 0 |
| 31 | 4 | "leg pain"                            | 2 | "2013-04-03 00:00:00" | ""                    | 1 | 2 | 1 | 0 |
| 31 | 5 | "headache"                            | 1 | "2013-04-04 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 31 | 6 | "headache"                            | 1 | "2013-04-09 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 22 | 1 | "ankle injury"                        | 1 | "2013-04-12 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 19 | 1 | "cold symptoms"                       | 1 | "2013-03-28 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 19 | 2 | "flu symptoms"                        | 2 | "2013-03-29 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 19 | 3 | "cold symptoms"                       | 2 | "2013-03-31 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 19 | 4 | "cold symptoms"                       | 2 | "2013-04-12 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 9  | 4 | "abdominal pain"                      | 1 | "2013-04-12 00:00:00" | ""                    | 1 | 2 | 0 | 0 |
| 28 | 1 | "cold symptoms"                       | 1 | "2013-04-12 00:00:00" | "2013-04-12 00:00:00" | 1 | 2 | 0 | 0 |

|    |    |  |   |             |             |   |   |   |   |
|----|----|--|---|-------------|-------------|---|---|---|---|
|    |    |  |   | 04          | 05          |   |   |   |   |
|    |    |  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|    |    |  |   | "2013-04-12 |             |   |   |   |   |
| 28 | 2  | "pain in trsticle"                           | 1 | 00:00:00"   | ""          | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-19 | "2013-03-19 |   |   |   |   |
| 5  | 8  | "twitches"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |  |   | "2013-03-24 | "2013-03-24 |   |   |   |   |
| 5  | 9  | "toothache"                                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-24 | "2013-03-24 |   |   |   |   |
| 5  | 10 | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-25 | "2013-03-25 |   |   |   |   |
| 5  | 11 | "toothache"                                  | 2 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-04-12 | "2013-04-12 |   |   |   |   |
| 5  | 12 | "toothache"                                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-05 | "2013-03-05 |   |   |   |   |
| 1  | 8  | "toothache"                                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-23 | "2013-03-23 |   |   |   |   |
| 1  | 9  | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-25 | "2013-03-25 |   |   |   |   |
| 1  | 10 | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-27 |             |   |   |   |   |
| 1  | 11 | "nausea"                                     | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 0 |
|    |    |  |   | "2013-03-29 | "2013-03-29 |   |   |   |   |
| 1  | 12 | "toothache"                                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-03-29 | "2013-03-29 |   |   |   |   |
| 1  | 13 | "self harm - superficial "                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |  |   | "2013-04-03 | "2013-04-03 |   |   |   |   |
| 1  | 14 | "toothache"                                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-04-04 | "2013-04-04 |   |   |   |   |
| 1  | 15 | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-04-07 | "2013-04-07 |   |   |   |   |
| 1  | 16 | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-04-10 | "2013-04-10 |   |   |   |   |
| 1  | 17 | "headache"                                   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |  |   | "2013-04-10 | "2013-04-10 |   |   |   |   |
| 1  | 18 | "hearing voices telling him to harm himself" | 1 | 00:00:00"   | 00:00:00"   | 2 | 1 | 1 | 2 |
|    |    |  |   | "2013-04-14 | "2013-04-14 |   |   |   |   |
| 1  | 19 | "Self-harmed "                               | 1 | 14          | 14          | 2 | 1 | 1 | 0 |

|    |    |                      |   |             |             |   |   |   |   |
|----|----|----------------------|---|-------------|-------------|---|---|---|---|
|    |    |                      |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|    |    |                      |   | "2013-04-15 |             |   |   |   |   |
| 9  | 5  | "dizziness"          | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 2 |
|    |    | "Voices telling him  |   | "2013-04-16 |             |   |   |   |   |
| 1  | 20 | make weapons         | 1 | 00:00:00"   | ""          | 2 | 1 | 2 | 2 |
|    |    | and hurt others "    |   | "2013-04-29 | "2013-04-30 |   |   |   |   |
| 15 | 1  | "dry skin"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-04-15 | "2013-04-15 |   |   |   |   |
| 5  | 13 | "tooch ache"         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-04-19 | "2013-04-19 |   |   |   |   |
| 5  | 14 | "back pain"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |                      |   | "2013-04-25 | "2013-04-25 |   |   |   |   |
| 5  | 15 | "head ache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |                      |   | "2013-05-03 | "2013-05-03 |   |   |   |   |
| 5  | 16 | "body ache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-04-15 | "2013-04-15 |   |   |   |   |
| 19 | 5  | "head ache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |                      |   | "2013-05-03 | "2013-05-03 |   |   |   |   |
| 15 | 2  | "lump on genitals"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|    |    |                      |   | "2013-05-08 | "2013-05-08 |   |   |   |   |
| 22 | 2  | "Eczema"             | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-04-25 | "2013-04-25 |   |   |   |   |
| 33 | 1  | "head ache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-04-26 | "2013-04-26 |   |   |   |   |
| 33 | 2  | "anal fissure"       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 1 | 0 |
|    |    |                      |   | "2013-05-07 | "2013-05-07 |   |   |   |   |
| 33 | 3  | "head ache "         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-05-14 | "2013-05-14 |   |   |   |   |
| 40 | 1  | "head ache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-05-15 | "2013-05-15 |   |   |   |   |
| 40 | 2  | "15/05/2013"         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-05-16 | "2013-05-16 |   |   |   |   |
| 15 | 3  | "cold symptoms"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-05-19 | "2013-05-21 |   |   |   |   |
| 15 | 4  | "boil on left elbow" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-05-30 | "2013-05-30 |   |   |   |   |
| 15 | 5  | "Eczema, dry scalp"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|    |   |                          |   |                       |                       |   |   |   |   |
|----|---|--------------------------|---|-----------------------|-----------------------|---|---|---|---|
| 15 | 6 | "headache"               | 1 | "2013-06-09 00:00:00" | "2013-06-09 00:00:00" | 1 | 2 | 0 | 0 |
| 19 | 6 | "toothache"              | 1 | "2013-06-16 00:00:00" | "2013-06-16 00:00:00" | 1 | 2 | 0 | 0 |
| 19 | 7 | "hayfever"               | 1 | "2013-06-16 00:00:00" | "2013-06-16 00:00:00" | 1 | 2 | 0 | 0 |
| 33 | 4 | "swollen knuckle"        | 1 | "2013-05-16 00:00:00" | "2013-05-16 00:00:00" | 1 | 2 | 0 | 0 |
| 33 | 5 | "headache"               | 1 | "2013-05-31 00:00:00" | "2013-05-31 00:00:00" | 1 | 2 | 0 | 0 |
| 33 | 6 | "headache"               | 1 | "2013-06-29 00:00:00" | "2013-06-29 00:00:00" | 1 | 2 | 0 | 0 |
| 36 | 1 | "toothache"              | 1 | "2013-06-07 00:00:00" | "2013-06-07 00:00:00" | 1 | 2 | 0 | 0 |
| 40 | 3 | "headache"               | 1 | "2013-05-17 00:00:00" | "2013-05-17 00:00:00" | 1 | 2 | 0 | 0 |
| 40 | 4 | "pain in right shoulder" | 1 | "2013-05-26 00:00:00" | "2013-05-26 00:00:00" | 1 | 2 | 0 | 0 |
| 45 | 1 | "back pain"              | 1 | "2013-07-04 00:00:00" | "2013-07-04 00:00:00" | 1 | 1 | 0 | 0 |
| 48 | 1 | "heartburn"              | 1 | "2013-06-17 00:00:00" | "2013-06-17 00:00:00" | 1 | 2 | 0 | 0 |
| 48 | 2 | "heartburn"              | 1 | "2013-06-30 00:00:00" | "2013-06-30 00:00:00" | 1 | 2 | 0 | 0 |
| 48 | 3 | "heartburn"              | 1 | "2013-07-03 00:00:00" | "2013-07-03 00:00:00" | 1 | 2 | 0 | 0 |
| 48 | 4 | "constipation"           | 1 | "2013-06-19 00:00:00" | "2013-06-19 00:00:00" | 1 | 2 | 0 | 0 |
| 50 | 1 | "headache"               | 1 | "2013-06-29 00:00:00" | "2013-06-29 00:00:00" | 1 | 2 | 0 | 0 |
| 50 | 2 | "headache"               | 1 | "2013-06-07 00:00:00" | "2013-06-07 00:00:00" | 1 | 2 | 0 | 0 |
| 50 | 3 | "cold symptoms"          | 1 | "2013-07-04 00:00:00" | "2013-07-04 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 1 | "toothache"              | 1 | "2013-06-02 00:00:00" | "2013-06-02 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 2 | "hayfever"               | 1 | "2013-06-02 00:00:00" | "2013-06-02 00:00:00" | 1 | 2 | 0 | 0 |

|    |   |                     |   |           |           |   |   |   |   |
|----|---|---------------------|---|-----------|-----------|---|---|---|---|
|    |   |                     |   | 09        | 09        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" |   |   |   |   |
|    |   |                     |   | "2013-07- | "2013-07- |   |   |   |   |
| 51 | 3 | "hayfever"          | 1 | 02        | 03        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 51 | 4 | "headache"          | 1 | 15        | 15        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- | "2013-07- |   |   |   |   |
| 51 | 5 | "headache"          | 1 | 02        | 02        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 46 | 1 | "headache"          | 1 | 15        | 15        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 46 | 2 | "hayfever"          | 1 | 30        | 30        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 46 | 3 | "toothache"         | 1 | 30        | 30        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- | "2013-07- |   |   |   |   |
| 46 | 4 | "hayfever"          | 1 | 01        | 01        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- | "2013-07- |   |   |   |   |
| 46 | 5 | "indigestion"       | 1 | 03        | 03        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-07- |   |   |   |   |
| 60 | 1 | "swollen upper lip" | 1 | 23        | 01        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 2 | 2 | 1 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 60 | 2 | "headache"          | 1 | 26        | 26        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 60 | 3 | "headache"          | 1 | 16        | 16        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- | "2013-06- |   |   |   |   |
| 62 | 1 | "cold symptoms"     | 1 | 16        | 16        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-06- |           |   |   |   |   |
| 19 | 8 | "Hayfever"          | 1 | 23        |           |   |   |   |   |
|    |   |                     |   | 00:00:00" | ""        | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- |           |   |   |   |   |
| 19 | 9 | "Headache"          | 1 | 22        |           |   |   |   |   |
|    |   |                     |   | 00:00:00" | ""        | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- |           |   |   |   |   |
| 33 | 7 | "Acne"              | 1 | 01        |           |   |   |   |   |
|    |   |                     |   | 00:00:00" | ""        | 1 | 2 | 0 | 1 |
|    |   |                     |   | "2013-08- | "2013-08- |   |   |   |   |
| 33 | 8 | "Indigestion"       | 1 | 11        | 12        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |   |                     |   | "2013-07- |           |   |   |   |   |
| 33 | 9 | "Acne"              | 1 | 01        |           |   |   |   |   |
|    |   |                     |   | 00:00:00" | ""        | 1 | 2 | 0 | 1 |
|    |   |                     |   | "2013-08- | "2013-08- |   |   |   |   |
| 36 | 2 | "Toothache"         | 1 | 05        | 05        |   |   |   |   |
|    |   |                     |   | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |

|    |    |                      |   |             |             |   |   |   |   |
|----|----|----------------------|---|-------------|-------------|---|---|---|---|
|    |    |                      |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|    |    |                      |   | "2013-07-12 | "2013-08-09 |   |   |   |   |
| 46 | 6  | "Hayfever"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-15 | "2013-07-15 |   |   |   |   |
| 46 | 7  | "Stye on eye"        | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-08-17 | "2013-08-17 |   |   |   |   |
| 46 | 8  | "Toothache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-07 | "2013-07-07 |   |   |   |   |
| 48 | 5  | "Constipation"       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-10 | "2013-07-10 |   |   |   |   |
| 48 | 6  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-12 | "2013-08-09 |   |   |   |   |
| 48 | 7  | "Abdominal cramping" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-17 | "2013-08-14 |   |   |   |   |
| 48 | 8  | "Low Mood"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 1 | 0 |
|    |    |                      |   | "2013-07-19 | "2013-07-20 |   |   |   |   |
| 48 | 9  | "Heartburn"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-27 | "2013-07-27 |   |   |   |   |
| 48 | 10 | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-08-09 | "2013-09-06 |   |   |   |   |
| 48 | 11 | "Abdominal Cramping" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 1 |
|    |    |                      |   | "2013-08-10 | "2013-08-11 |   |   |   |   |
| 48 | 12 | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-08-12 | "2013-08-13 |   |   |   |   |
| 48 | 13 | "Toothache"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-08-14 | "2013-08-15 |   |   |   |   |
| 48 | 14 | "Heartburn"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-13 | "2014-07-14 |   |   |   |   |
| 50 | 4  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-16 | "2013-07-17 |   |   |   |   |
| 50 | 5  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-21 | "2013-07-22 |   |   |   |   |
| 50 | 6  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-07-27 | "2013-07-28 |   |   |   |   |
| 50 | 7  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|    |    |                      |   | "2013-08-01 | "2013-08-02 |   |   |   |   |
| 50 | 8  | "Headache"           | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|    |    |                |   |                       |                       |   |   |   |   |
|----|----|----------------|---|-----------------------|-----------------------|---|---|---|---|
| 50 | 9  | "Headache"     | 1 | "2013-08-01 00:00:00" | "2013-08-02 00:00:00" | 1 | 2 | 0 | 0 |
| 50 | 10 | "Headache"     | 1 | "2013-08-07 00:00:00" | "2013-08-08 00:00:00" | 1 | 2 | 0 | 0 |
| 50 | 11 | "Headache"     | 1 | "2013-08-07 00:00:00" | "2013-08-08 00:00:00" | 1 | 1 | 0 | 0 |
| 51 | 6  | "Hayfever"     | 1 | "2013-07-03 00:00:00" | "2013-07-03 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 7  | "Hayfever"     | 1 | "2013-07-10 00:00:00" | "2013-07-10 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 8  | "Headache"     | 1 | "2013-07-22 00:00:00" | "2013-07-23 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 9  | "Toothache"    | 1 | "2013-07-25 00:00:00" | "2013-07-26 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 10 | "Toothache"    | 1 | "2013-07-27 00:00:00" | "2013-07-28 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 11 | "Toothache"    | 1 | "2013-07-28 00:00:00" | "2013-07-29 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 12 | "Headache"     | 1 | "2013-07-30 00:00:00" | "2013-08-01 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 13 | "Headache"     | 1 | "2013-08-04 00:00:00" | "2013-08-06 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 14 | "Sore Throat"  | 1 | "2013-08-08 00:00:00" | "2013-08-12 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 15 | "Headache"     | 1 | "2013-08-12 00:00:00" | "2013-08-13 00:00:00" | 1 | 2 | 0 | 0 |
| 51 | 16 | "Cough"        | 1 | "2013-08-12 00:00:00" | "2013-08-14 00:00:00" | 1 | 2 | 0 | 0 |
| 57 | 1  | "Mouth Ulcer"  | 1 | "2013-08-02 00:00:00" | "2013-08-07 00:00:00" | 1 | 2 | 0 | 0 |
| 60 | 4  | "Constipation" | 1 | "2013-08-16 00:00:00" | "2013-08-17 00:00:00" | 1 | 2 | 0 | 0 |
| 60 | 5  | "Constipation" | 1 | "2013-08-16 00:00:00" | "2013-08-17 00:00:00" | 1 | 2 | 0 | 0 |
| 67 | 1  | "Stomach ache" | 1 | "2013-06-21 00:00:00" | "2013-06-22 00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 1  | "Toothache"    | 1 | "2013-07-00 00:00:00" | "2013-07-00 00:00:00" | 1 | 2 | 0 | 0 |

|    |    |               |   |           |           |   |   |   |   |
|----|----|---------------|---|-----------|-----------|---|---|---|---|
|    |    |               |   | 24        | 25        |   |   |   |   |
|    |    |               |   | 00:00:00" | 00:00:00" |   |   |   |   |
|    |    |               |   | "2013-08- | "2013-09- |   |   |   |   |
|    |    |               |   | 14        | 11        |   |   |   |   |
| 81 | 1  | "Acne"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 17        | 18        |   |   |   |   |
| 81 | 2  | "Toothache"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 18        | 19        |   |   |   |   |
| 81 | 3  | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-07- | "2013-07- |   |   |   |   |
|    |    |               |   | 25        | 26        |   |   |   |   |
| 86 | 1  | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 15        | 16        |   |   |   |   |
| 99 | 1  | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 14        | 15        |   |   |   |   |
| 48 | 15 | "Heartburn"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 25        | 26        |   |   |   |   |
| 48 | 16 | "Heartburn"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 26        | 27        |   |   |   |   |
| 40 | 5  | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 28        | 29        |   |   |   |   |
| 51 | 17 | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 20        | 21        |   |   |   |   |
| 46 | 9  | "Toothache"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 25        | 26        |   |   |   |   |
| 46 | 10 | "Toothache"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 26        | 27        |   |   |   |   |
| 46 | 11 | "Sore Throat" | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-09- |   |   |   |   |
|    |    |               |   | 28        | 25        |   |   |   |   |
| 81 | 4  | "Acne"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 1 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 29        | 30        |   |   |   |   |
| 36 | 3  | "Hayfever"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 30        | 31        |   |   |   |   |
| 36 | 4  | "Toothache"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 16        | 17        |   |   |   |   |
| 50 | 12 | "Headache"    | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 21        | 22        |   |   |   |   |
| 50 | 13 | "Sore Throat" | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|    |    |               |   | "2013-08- | "2013-08- |   |   |   |   |
|    |    |               |   | 18        | 19        |   |   |   |   |
| 54 | 1  | "Hand pain"   | 1 |           |           | 1 | 2 | 0 | 0 |

|     |    |                                     |   |             |             |   |   |   |   |
|-----|----|-------------------------------------|---|-------------|-------------|---|---|---|---|
|     |    |                                     |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |                                     |   | "2013-08-08 | "2013-09-05 |   |   |   |   |
| 54  | 2  | "Sleep difficulties and depression" | 1 | 00:00:00"   | 00:00:00"   | 2 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-23 | "2013-08-24 |   |   |   |   |
| 60  | 6  | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-28 | "2013-08-29 |   |   |   |   |
| 57  | 2  | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-21 | "2013-09-18 |   |   |   |   |
| 99  | 2  | "Fungal nail infection"             | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-24 | "2013-08-25 |   |   |   |   |
| 104 | 1  | "Toothache"                         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-13 | "2013-08-14 |   |   |   |   |
| 33  | 10 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-08-26 | "2013-08-27 |   |   |   |   |
| 32  | 1  | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-29 | "2013-09-29 |   |   |   |   |
| 36  | 5  | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-20 | "2013-09-20 |   |   |   |   |
| 40  | 6  | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-21 | "2013-09-23 |   |   |   |   |
| 40  | 7  | "Shoulder Pain"                     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-06 | "2013-10-04 |   |   |   |   |
| 48  | 17 | "Abdominal Cramping"                | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 1 |
|     |    |                                     |   | "2013-09-08 | "2013-09-08 |   |   |   |   |
| 48  | 18 | "Constipation"                      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-22 | "2013-09-22 |   |   |   |   |
| 48  | 19 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-25 | "2013-09-25 |   |   |   |   |
| 48  | 20 | "Constipation"                      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-27 | "2013-09-27 |   |   |   |   |
| 48  | 21 | "Stomach ache"                      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-01 | "2013-09-01 |   |   |   |   |
| 50  | 14 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-08 | "2013-09-08 |   |   |   |   |
| 46  | 12 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                     |   | "2013-09-13 | "2013-09-13 |   |   |   |   |
| 46  | 13 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|    |    |  |   |                          |                          |   |   |   |   |
|----|----|--|---|--------------------------|--------------------------|---|---|---|---|
| 46 | 14 | "Headache"                             | 1 | "2013-09-15<br>00:00:00" | "2013-09-15<br>00:00:00" | 1 | 2 | 0 | 0 |
| 54 | 3  | "Sleep difficulties<br>and depression" | 1 | "2013-09-05<br>00:00:00" | "2013-10-31<br>00:00:00" | 2 | 2 | 0 | 0 |
| 54 | 4  | "Cough"                                | 1 | "2013-09-28<br>00:00:00" | "2013-09-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 83 | 1  | "Coldsore"                             | 1 | "2013-10-18<br>00:00:00" | "2013-10-21<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 2  | "Headache"                             | 1 | "2013-09-03<br>00:00:00" | "2013-09-03<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 3  | "Headache"                             | 1 | "2013-09-20<br>00:00:00" | "2013-09-20<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 4  | "Headache"                             | 1 | "2013-09-23<br>00:00:00" | "2013-09-23<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 5  | "Headache "                            | 1 | "2013-10-06<br>00:00:00" | "2013-10-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 6  | "Headache and<br>Cold symptoms"        | 1 | "2013-10-11<br>00:00:00" | "2013-10-11<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79 | 7  | "Headache"                             | 1 | "2013-10-12<br>00:00:00" | "2013-10-12<br>00:00:00" | 1 | 2 | 0 | 0 |
| 66 | 1  | "Pain in elbow"                        | 1 | "2013-10-21<br>00:00:00" | "2013-10-21<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74 | 1  | "Toothache"                            | 1 | "2013-09-11<br>00:00:00" | "2013-09-11<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74 | 2  | "Groin pain -<br>inguinal hernia"      | 1 | "2013-09-11<br>00:00:00" | "2013-09-18<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74 | 3  | "Headache"                             | 1 | "2013-09-12<br>00:00:00" | "2013-09-12<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74 | 4  | "Groin pain -<br>inguinal hernia"      | 1 | "2013-09-25<br>00:00:00" | "2013-10-05<br>00:00:00" | 1 | 2 | 0 | 0 |
| 86 | 2  | "Headache"                             | 1 | "2013-09-18<br>00:00:00" | "2013-09-18<br>00:00:00" | 1 | 2 | 0 | 0 |
| 96 | 1  | "Headache"                             | 1 | "2013-09-06<br>00:00:00" | "2013-09-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 96 | 2  | "Cold symptoms<br>and headache"        | 1 | "2013-09-23<br>00:00:00" | "2013-09-26<br>00:00:00" | 1 | 2 | 0 | 0 |
| 96 | 3  | "Headache"                             | 1 | "2013-09-18<br>00:00:00" | "2013-09-18<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |   |                   |   |           |           |   |   |   |   |
|-----|---|-------------------|---|-----------|-----------|---|---|---|---|
|     |   |                   |   | 30        | 30        |   |   |   |   |
|     |   |                   |   | 00:00:00" | 00:00:00" |   |   |   |   |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 03        | 03        |   |   |   |   |
| 96  | 4 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 03        | 03        |   |   |   |   |
| 96  | 5 | "Toothache"       | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 07        | 07        |   |   |   |   |
| 96  | 6 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 04        | 04        |   |   |   |   |
| 104 | 2 | "Toothache"       | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 11        | 11        |   |   |   |   |
| 104 | 3 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 12        | 12        |   |   |   |   |
| 104 | 4 | "Toothache"       | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 15        | 15        |   |   |   |   |
| 104 | 5 | "Toothache"       | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 19        | 19        |   |   |   |   |
| 104 | 6 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 22        | 22        |   |   |   |   |
| 104 | 7 | "Toothache"       | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 26        | 26        |   |   |   |   |
| 104 | 8 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 05        | 05        |   |   |   |   |
| 112 | 1 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 15        | 15        |   |   |   |   |
| 110 | 1 | "Muscle Pain"     | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 16        | 17        |   |   |   |   |
| 110 | 2 | "Eye Problem"     | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-09- | "2013-09- |   |   |   |   |
|     |   |                   |   | 29        | 30        |   |   |   |   |
| 110 | 3 | "Cold symptoms"   | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 04        | 08        |   |   |   |   |
| 110 | 4 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 07        | 14        |   |   |   |   |
| 110 | 5 | "Chest Infection" | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   |                   |   | "2013-10- | "2013-10- |   |   |   |   |
|     |   |                   |   | 16        | 16        |   |   |   |   |
| 110 | 6 | "Headache"        | 1 | 00:00:00" | 00:00:00" | 1 | 2 | 0 | 0 |
|     |   | "Wound pains from |   | "2013-10- | "2013-10- |   |   |   |   |
| 110 | 7 | fight"            | 1 | 17        | 17        | 1 | 2 | 0 | 0 |

|     |   |                                       |   |                          |                          |   |   |   |   |
|-----|---|---------------------------------------|---|--------------------------|--------------------------|---|---|---|---|
|     |   |                                       |   | 00:00:00"                | 00:00:00"                |   |   |   |   |
| 110 | 8 | "Pain in Sternum from fighting"       | 1 | "2013-10-18<br>00:00:00" | "2013-10-21<br>00:00:00" | 1 | 2 | 0 | 0 |
| 111 | 1 | "Headache"                            | 1 | "2013-09-28<br>00:00:00" | "2013-09-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 111 | 2 | "Leg cramp"                           | 1 | "2013-10-02<br>00:00:00" | "2013-10-02<br>00:00:00" | 1 | 2 | 0 | 0 |
| 111 | 3 | "Headache"                            | 1 | "2013-10-05<br>00:00:00" | "2013-10-05<br>00:00:00" | 1 | 2 | 0 | 0 |
| 111 | 4 | "Headache"                            | 1 | "2013-10-12<br>00:00:00" | "2013-10-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 111 | 5 | "Flu"                                 | 1 | "2013-10-15<br>00:00:00" | "2013-10-19<br>00:00:00" | 1 | 2 | 0 | 0 |
| 105 | 1 | "Pains and swelling from fighting"    | 1 | "2013-10-05<br>00:00:00" | "2013-10-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 105 | 2 | "Headache"                            | 1 | "2013-10-08<br>00:00:00" | "2013-10-08<br>00:00:00" | 1 | 2 | 0 | 0 |
| 105 | 3 | "Complaints of pains"                 | 1 | "2013-10-16<br>00:00:00" | "2013-10-17<br>00:00:00" | 1 | 2 | 0 | 0 |
| 105 | 4 | "Dry Skin"                            | 1 | "2013-10-18<br>00:00:00" | "2013-11-15<br>00:00:00" | 1 | 2 | 0 | 0 |
| 105 | 5 | "Cold"                                | 1 | "2013-10-18<br>00:00:00" | "2013-10-19<br>00:00:00" | 1 | 2 | 0 | 0 |
| 123 | 1 | "Headache"                            | 1 | "2013-09-16<br>00:00:00" | "2013-09-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 123 | 2 | "Headache"                            | 1 | "2013-09-21<br>00:00:00" | "2013-09-21<br>00:00:00" | 1 | 2 | 0 | 0 |
| 123 | 3 | "Headache"                            | 1 | "2013-09-24<br>00:00:00" | "2013-09-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 40  | 8 | "Foot pain"                           | 1 | "2013-10-31<br>00:00:00" | "2013-10-31<br>00:00:00" | 1 | 2 | 0 | 0 |
| 40  | 9 | "Headache"                            | 1 | "2013-11-06<br>00:00:00" | "2013-11-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74  | 5 | "Moles and dry skin"                  | 1 | "2013-10-25<br>00:00:00" | "2013-11-08<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74  | 6 | "Back pain from fall a few years ago" | 1 | "2013-10-25<br>00:00:00" | "2013-11-08<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |    |                                     |   |                          |                          |   |   |   |   |
|-----|----|-------------------------------------|---|--------------------------|--------------------------|---|---|---|---|
| 96  | 7  | "Headache"                          | 1 | "2013-11-10<br>00:00:00" | "2013-11-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 54  | 5  | "Cough and cold symptoms"           | 1 | "2013-10-30<br>00:00:00" | "2013-11-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 54  | 6  | "Sleep Difficulties and depression" | 1 | "2013-10-31<br>00:00:00" | "2013-11-28<br>00:00:00" | 2 | 2 | 0 | 0 |
| 54  | 7  | "Headache"                          | 1 | "2013-11-10<br>00:00:00" | "2013-11-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 86  | 3  | "Toothache"                         | 1 | "2013-10-28<br>00:00:00" | "2013-10-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 109 | 1  | "Hand Injury"                       | 2 | "2013-09-30<br>00:00:00" | "2013-11-04<br>00:00:00" | 1 | 2 | 0 | 0 |
| 74  | 7  | "Intermittent Heart Palpatations "  | 1 | "2013-11-13<br>00:00:00" | "2013-11-14<br>00:00:00" | 1 | 1 | 0 | 0 |
| 79  | 8  | "Headache"                          | 1 | "2013-10-31<br>00:00:00" | "2013-10-31<br>00:00:00" | 1 | 2 | 0 | 0 |
| 79  | 9  | "Headache"                          | 1 | "2013-11-24<br>00:00:00" | "2013-11-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 110 | 9  | "Wax in ear canal"                  | 1 | "2013-10-21<br>00:00:00" | "2013-10-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 110 | 10 | "Backache"                          | 1 | "2013-10-22<br>00:00:00" | "2013-10-23<br>00:00:00" | 1 | 2 | 0 | 0 |
| 110 | 11 | "Complaints of pains"               | 1 | "2013-10-23<br>00:00:00" | "2013-10-23<br>00:00:00" | 1 | 2 | 0 | 0 |
| 110 | 12 | "Headache"                          | 1 | "2013-10-26<br>00:00:00" | "2013-10-27<br>00:00:00" | 1 | 2 | 0 | 0 |
| 110 | 13 | "Complaints of pains"               | 1 | "2013-10-30<br>00:00:00" | "2013-10-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 109 | 2  | "Toothache"                         | 1 | "2013-11-18<br>00:00:00" | "2013-11-23<br>00:00:00" | 1 | 2 | 0 | 0 |
| 109 | 3  | "Hand Injury "                      | 2 | "2013-11-22<br>00:00:00" | "2013-11-29<br>00:00:00" | 1 | 2 | 0 | 0 |
| 135 | 1  | "Acne"                              | 2 | "2013-11-13<br>00:00:00" | "2013-01-08<br>00:00:00" | 1 | 2 | 0 | 2 |
| 50  | 15 | "Headache"                          | 1 | "2013-11-15<br>00:00:00" | "2013-11-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 16 | "Fungal                             | 1 | "2013-11-                | "2013-11-                | 1 | 2 | 0 | 0 |

|     |    |                                |   |                                    |                                    |   |   |   |   |
|-----|----|--------------------------------|---|------------------------------------|------------------------------------|---|---|---|---|
|     |    | dermatosis - rash<br>on chest" |   | 15<br>00:00:00"<br>"2013-11-<br>27 | 29<br>00:00:00"<br>"2013-11-<br>28 |   |   |   |   |
| 50  | 17 | "Headache"                     | 1 | 00:00:00"<br>"2013-10-<br>28       | 00:00:00"<br>"2013-10-<br>28       | 1 | 2 | 0 | 0 |
| 62  | 2  | "Headache"                     | 1 | 00:00:00"<br>"2013-11-<br>07       | 00:00:00"<br>"2013-11-<br>07       | 1 | 2 | 0 | 0 |
| 62  | 3  | "Toothache"                    | 1 | 00:00:00"<br>"2013-11-<br>15       | 00:00:00"<br>"2013-12-<br>13       | 1 | 2 | 0 | 0 |
| 62  | 4  | "Dry Skin"                     | 1 | 00:00:00"<br>"2013-12-<br>02       | 00:00:00"<br>"2013-12-<br>02       | 1 | 2 | 0 | 0 |
| 62  | 5  | "Headache"                     | 1 | 00:00:00"<br>"2013-12-<br>06       | 00:00:00"<br>"2013-12-<br>06       | 1 | 2 | 0 | 0 |
| 62  | 6  | "Toothache"                    | 1 | 00:00:00"<br>"2013-11-<br>01       | 00:00:00"<br>"2013-11-<br>01       | 1 | 2 | 0 | 0 |
| 110 | 14 | "n/a"                          | 1 | 00:00:00"<br>"2013-11-<br>02       | 00:00:00"<br>"2013-11-<br>02       | 1 | 2 | 0 | 0 |
| 110 | 15 | "n/a"                          | 1 | 00:00:00"<br>"2013-11-<br>22       | 00:00:00"<br>"2013-11-<br>22       | 1 | 2 | 0 | 0 |
| 110 | 16 | "n/a"                          | 1 | 00:00:00"<br>"2013-11-<br>23       | 00:00:00"<br>"2013-11-<br>23       | 1 | 2 | 0 | 0 |
| 110 | 17 | "n/a"                          | 1 | 00:00:00"<br>"2013-10-<br>25       | 00:00:00"<br>"2013-10-<br>25       | 1 | 2 | 0 | 0 |
| 111 | 6  | "Backache"                     | 1 | 00:00:00"<br>"2013-10-<br>30       | 00:00:00"<br>"2013-10-<br>30       | 1 | 2 | 0 | 0 |
| 111 | 7  | "Cold symptoms"                | 1 | 00:00:00"<br>"2013-11-<br>01       | 00:00:00"<br>"2013-11-<br>01       | 1 | 2 | 0 | 0 |
| 111 | 8  | "Headache"                     | 1 | 00:00:00"<br>"2013-11-<br>02       | 00:00:00"<br>"2013-11-<br>02       | 1 | 2 | 0 | 0 |
| 111 | 9  | "Cough"                        | 1 | 00:00:00"<br>"2013-11-<br>22       | 00:00:00"<br>"2013-11-<br>22       | 1 | 2 | 0 | 0 |
| 111 | 10 | "Headache"                     | 1 | 00:00:00"<br>"2013-11-<br>23       | 00:00:00"<br>"2013-11-<br>23       | 1 | 2 | 0 | 0 |
| 111 | 11 | "Sore lips"                    | 1 | 00:00:00"<br>"2013-11-<br>24       | 00:00:00"<br>"2013-11-<br>24       | 1 | 2 | 0 | 0 |
| 111 | 12 | "Headache"                     | 1 | 00:00:00"<br>"2013-12-             | 00:00:00"<br>"2013-12-             | 1 | 2 | 0 | 0 |
| 111 | 13 | "Leg pain"                     | 1 | 11                                 | 21                                 | 1 | 2 | 0 | 0 |

|     |   |                                     |   |             |             |   |   |   |   |
|-----|---|-------------------------------------|---|-------------|-------------|---|---|---|---|
|     |   |                                     |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |   |                                     |   | "2013-11-02 | "2013-11-02 |   |   |   |   |
| 105 | 6 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-27 | "2013-11-27 |   |   |   |   |
| 105 | 7 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-23 | "2013-11-23 |   |   |   |   |
| 54  | 8 | "Sore throat"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-28 | "2013-12-26 |   |   |   |   |
| 54  | 9 | "Sleep difficulties and depression" | 2 | 00:00:00"   | 00:00:00"   | 2 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-10-30 | "2013-11-02 |   |   |   |   |
| 115 | 1 | "Cold symptoms"                     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-10 | "2013-11-10 |   |   |   |   |
| 115 | 2 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-18 | "2013-11-18 |   |   |   |   |
| 115 | 3 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-25 | "2013-11-25 |   |   |   |   |
| 115 | 4 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-02 | "2013-12-02 |   |   |   |   |
| 115 | 5 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-08 | "2013-12-08 |   |   |   |   |
| 115 | 6 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-09 | "2013-12-09 |   |   |   |   |
| 138 | 1 | "Allergic reaction to egg"          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-08 | "2013-11-08 |   |   |   |   |
| 129 | 1 | "Gastric reflux"                    | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-06 | "2013-12-06 |   |   |   |   |
| 136 | 1 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-06 | "2013-12-09 |   |   |   |   |
| 136 | 2 | "Sore throat"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-12 | "2013-12-12 |   |   |   |   |
| 136 | 3 | "Headache"                          | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-11-25 | "2013-12-23 |   |   |   |   |
| 153 | 1 | "Heartburn"                         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-18 | "2014-02-12 |   |   |   |   |
| 145 | 1 | "Acne on face and upper back"       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |   |                                     |   | "2013-12-23 | "2013-12-24 |   |   |   |   |
| 122 | 1 | "Genital warts"                     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|     |    |                                      |   |                          |                          |   |   |   |   |
|-----|----|--------------------------------------|---|--------------------------|--------------------------|---|---|---|---|
| 109 | 4  | "Headache"                           | 1 | "2013-12-27<br>00:00:00" | "2013-12-27<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 18 | "Toothache"                          | 1 | "2013-12-13<br>00:00:00" | "2013-12-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 19 | "Sore throat"                        | 1 | "2013-12-14<br>00:00:00" | "2013-12-14<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 20 | "Headache"                           | 1 | "2014-01-02<br>00:00:00" | "2014-01-02<br>00:00:00" | 1 | 2 | 0 | 0 |
| 62  | 7  | "Headache"                           | 1 | "2014-01-03<br>00:00:00" | "2014-01-03<br>00:00:00" | 1 | 2 | 0 | 0 |
| 129 | 2  | "Stomach ache"                       | 1 | "2013-12-20<br>00:00:00" | "2013-12-20<br>00:00:00" | 1 | 2 | 0 | 0 |
| 136 | 4  | "Sore throat"                        | 1 | "2013-12-29<br>00:00:00" | "2013-12-29<br>00:00:00" | 1 | 2 | 0 | 0 |
| 150 | 1  | "Sore thumb"                         | 1 | "2013-12-24<br>00:00:00" | "2013-12-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 150 | 2  | "Toothache"                          | 1 | "2013-12-27<br>00:00:00" | "2013-12-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 83  | 2  | "Toothache"                          | 1 | "2014-01-06<br>00:00:00" | "2014-01-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 83  | 3  | "Toothache"                          | 1 | "2014-01-02<br>00:00:00" | "2014-01-02<br>00:00:00" | 1 | 2 | 0 | 0 |
| 123 | 4  | "Toothache"                          | 1 | "2014-01-11<br>00:00:00" | "2014-01-11<br>00:00:00" | 1 | 2 | 0 | 0 |
| 123 | 5  | "Toothache"                          | 1 | "2013-11-12<br>00:00:00" | "2013-11-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 36  | 6  | "Headache"                           | 1 | "2014-01-05<br>00:00:00" | "2014-01-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 166 | 1  | "Fungal skin rash - dermatophytosis" | 1 | "2014-01-10<br>00:00:00" | ""                       | 1 | 2 | 0 | 0 |
| 50  | 21 | "Sore throat"                        | 1 | "2014-01-13<br>00:00:00" | "2014-01-15<br>00:00:00" | 1 | 2 | 0 | 0 |
| 62  | 8  | "Toothache"                          | 1 | "2014-01-04<br>00:00:00" | "2014-01-04<br>00:00:00" | 1 | 2 | 0 | 0 |
| 62  | 9  | "Dry skin"                           | 2 | "2014-01-10<br>00:00:00" | ""                       | 1 | 2 | 0 | 0 |
| 105 | 8  | "Cold symptoms"                      | 1 | "2014-01-10<br>00:00:00" | "2014-01-10<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |    |                                  |   |             |             |   |   |   |   |
|-----|----|----------------------------------|---|-------------|-------------|---|---|---|---|
|     |    | with headache "                  |   | 08          | 17          |   |   |   |   |
|     |    |                                  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |                                  |   | "2014-01-06 | "2014-01-06 |   |   |   |   |
| 115 | 7  | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-06 | "2014-01-06 |   |   |   |   |
| 129 | 3  | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-11 | "2014-01-11 |   |   |   |   |
| 136 | 5  | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-12-31 |             |   |   |   |   |
| 136 | 6  | "Bruising to body from fighting" | 1 | 00:00:00"   | ""          | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-04 | "2014-01-05 |   |   |   |   |
| 150 | 3  | "toothache"                      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-09 | "2014-01-10 |   |   |   |   |
| 150 | 4  | "Cold symptoms"                  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-12 | "2014-01-12 |   |   |   |   |
| 150 | 5  | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-11-28 | "2013-11-28 |   |   |   |   |
| 138 | 2  | "headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-10 | "2014-01-10 |   |   |   |   |
| 135 | 2  | "Tootache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-09-01 | "2013-09-01 |   |   |   |   |
| 105 | 9  | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-10 | "2014-01-10 |   |   |   |   |
| 105 | 10 | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-16 | "2014-01-16 |   |   |   |   |
| 138 | 3  | "Complaints of pains"            | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-12-14 | "2013-12-14 |   |   |   |   |
| 111 | 14 | "Headache"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-11-01 | "2013-11-01 |   |   |   |   |
| 86  | 4  | "IGNORE WRONG ENTRY"             | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2013-11-01 | "2013-11-01 |   |   |   |   |
| 113 | 1  | "Feeling unwell"                 | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|     |    |                                  |   | "2014-02-05 | "2014-02-06 |   |   |   |   |
| 189 | 1  | "Paranoia"                       | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 1 | 0 |
|     |    |                                  |   | "2014-01-14 | "2014-01-14 |   |   |   |   |
| 136 | 7  | "Toothache"                      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                                  |   | "2014-01-23 | "2014-01-23 |   |   |   |   |
| 136 | 8  | "Sore throat"                    | 1 | 23          | 23          | 1 | 2 | 0 | 0 |

|     |    |  |   |             |             |   |   |   |   |
|-----|----|--|---|-------------|-------------|---|---|---|---|
|     |    |  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |  |   | "2014-01-31 | "2014-01-31 |   |   |   |   |
| 136 | 9  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-02-07 | "2014-02-07 |   |   |   |   |
| 136 | 10 | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-02-09 | "2014-02-09 |   |   |   |   |
| 136 | 11 | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-02-13 | "2014-02-16 |   |   |   |   |
| 136 | 12 | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-16 | "2014-01-16 |   |   |   |   |
| 83  | 4  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-14 | "2014-01-14 |   |   |   |   |
| 150 | 6  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-14 | "2014-01-18 |   |   |   |   |
| 150 | 7  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-22 | "2014-01-22 |   |   |   |   |
| 150 | 8  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-14 | "2014-01-22 |   |   |   |   |
| 129 | 4  | "Dental abscess "  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 1 | 0 |
|     |    |  |   | "2014-01-24 | "2014-01-31 |   |   |   |   |
| 129 | 5  | "Blocked and painful ears"                               | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-25 | "2014-01-25 |   |   |   |   |
| 96  | 8  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-25 | "2014-01-25 |   |   |   |   |
| 96  | 9  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-31 | "2014-01-31 |   |   |   |   |
| 123 | 6  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-02-07 | "2014-02-07 |   |   |   |   |
| 123 | 7  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-02-11 | "2014-02-11 |   |   |   |   |
| 123 | 8  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-19 | "2014-01-20 |   |   |   |   |
| 171 | 1  | "Toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-01-23 | "2014-02-04 |   |   |   |   |
| 171 | 2  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Toothache (result of being hit round face with guitar)" |   | "2014-02-08 | "2014-03-22 |   |   |   |   |
| 171 | 3  |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 1 | 0 |

|     |    |  |   |                          |                          |   |   |   |   |
|-----|----|--|---|--------------------------|--------------------------|---|---|---|---|
| 171 | 4  | "Headache"                                 | 1 | "2014-02-14<br>00:00:00" | "2014-02-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 169 | 1  | "Cold aggravates symptom"                  | 1 | "2014-01-25<br>00:00:00" | "2014-01-26<br>00:00:00" | 1 | 2 | 0 | 0 |
| 169 | 2  | "Headache"                                 | 1 | "2014-02-23<br>00:00:00" | "2014-02-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 176 | 1  | "Headache"                                 | 1 | "2014-01-28<br>00:00:00" | "2014-01-29<br>00:00:00" | 1 | 2 | 0 | 0 |
| 176 | 2  | "Headache"                                 | 1 | "2014-02-23<br>00:00:00" | "2014-02-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 191 | 1  | "Back pain"                                | 1 | "2014-02-05<br>00:00:00" | "2014-04-02<br>00:00:00" | 1 | 2 | 0 | 0 |
| 192 | 1  | "Pityriasis simplex (dry and itchy scalp)" | 1 | "2014-02-09<br>00:00:00" | "2014-02-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 192 | 2  | "Pain in mouth due to small spot"          | 1 | "2014-02-05<br>00:00:00" | "2014-02-06<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 22 | "Sore throat"                              | 1 | "2014-02-07<br>00:00:00" | "2014-02-08<br>00:00:00" | 1 | 2 | 0 | 0 |
| 50  | 23 | "Headache"                                 | 1 | "2014-02-07<br>00:00:00" | "2014-02-08<br>00:00:00" | 1 | 2 | 0 | 0 |
| 62  | 10 | "Cough"                                    | 1 | "2014-02-03<br>00:00:00" | "2014-02-04<br>00:00:00" | 1 | 2 | 0 | 0 |
| 54  | 10 | "Cold aggravates symptoms and cough"       | 1 | "2014-02-10<br>00:00:00" | "2014-02-18<br>00:00:00" | 1 | 2 | 0 | 0 |
| 54  | 11 | "Tonsillitis"                              | 1 | "2014-02-13<br>00:00:00" | "2014-02-20<br>00:00:00" | 1 | 2 | 1 | 0 |
| 54  | 12 | "Gum pain"                                 | 1 | "2014-01-17<br>00:00:00" | "2014-01-18<br>00:00:00" | 1 | 2 | 0 | 0 |
| 115 | 8  | "Headache"                                 | 1 | "2014-01-26<br>00:00:00" | "2014-01-27<br>00:00:00" | 1 | 2 | 0 | 0 |
| 115 | 9  | "Headache"                                 | 1 | "2014-02-08<br>00:00:00" | "2014-02-09<br>00:00:00" | 1 | 2 | 0 | 0 |
| 115 | 10 | "Headache"                                 | 1 | "2014-02-09<br>00:00:00" | "2014-02-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 115 | 11 | "Toothache"                                | 1 | "2014-02-09<br>00:00:00" | "2014-02-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 115 | 12 | "Headache"                                 | 1 | "2014-02-09<br>00:00:00" | "2014-02-10<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |    |                 |   |             |             |   |   |   |   |
|-----|----|-----------------|---|-------------|-------------|---|---|---|---|
|     |    |                 |   | 13          | 14          |   |   |   |   |
|     |    |                 |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |                 |   | "2014-02-20 | "2014-02-21 |   |   |   |   |
| 115 | 13 | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-01-24 | "2014-01-25 |   |   |   |   |
| 152 | 1  | "Toothache"     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-02-07 | "2014-02-08 |   |   |   |   |
| 152 | 2  | "Cough"         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-01-15 | "2014-01-25 |   |   |   |   |
| 164 | 1  | "Cough"         | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-01-22 | "2014-01-23 |   |   |   |   |
| 141 | 1  | "Knee pain"     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-02 | "2014-03-02 |   |   |   |   |
| 191 | 2  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-02 | "2014-03-03 |   |   |   |   |
| 191 | 3  | "Toothache"     | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-02-22 | "2014-02-23 |   |   |   |   |
| 164 | 2  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-10 | "2014-03-11 |   |   |   |   |
| 123 | 9  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-21 | "2014-03-02 |   |   |   |   |
| 123 | 10 | "Swollen ankle" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-10 | "2014-03-11 |   |   |   |   |
| 145 | 2  | "Stomach ache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-02 | "2014-03-03 |   |   |   |   |
| 135 | 3  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-02-25 | "2014-02-26 |   |   |   |   |
| 171 | 5  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-08 | "2014-03-09 |   |   |   |   |
| 171 | 6  | "Cold symptoms" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-09 | "2014-03-10 |   |   |   |   |
| 171 | 7  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-15 | "2014-03-16 |   |   |   |   |
| 171 | 8  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-03-21 | "2014-03-22 |   |   |   |   |
| 171 | 9  | "Headache"      | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |                 |   | "2014-04-05 | "2014-04-06 |   |   |   |   |
| 171 | 10 | "Headache"      | 1 | 05          | 06          | 1 | 2 | 0 | 0 |

|     |    |   |   |             |             |   |   |   |   |
|-----|----|---|---|-------------|-------------|---|---|---|---|
|     |    |   |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |   |   | "2014-02-28 | "2014-03-01 |   |   |   |   |
| 169 | 3  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-15 | "2014-03-16 |   |   |   |   |
| 176 | 3  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-15 | "2014-03-16 |   |   |   |   |
| 176 | 4  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-28 | "2014-03-29 |   |   |   |   |
| 190 | 1  | "Cold symptoms"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-04 | "2014-03-05 |   |   |   |   |
| 192 | 3  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-27 | "           |   |   |   |   |
| 212 | 1  | "Dental abcess and toothache"                                 | 3 | 00:00:00"   | "           | 1 | 2 | 1 | 0 |
|     |    |   |   | "2014-03-31 | "2014-04-01 |   |   |   |   |
| 212 | 2  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-06 | "2014-04-07 |   |   |   |   |
| 212 | 3  | "Hayfever"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-09 | "2014-03-19 |   |   |   |   |
| 184 | 1  | "Back pain"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-06 | "2014-03-27 |   |   |   |   |
| 177 | 1  | "Acne vulgaris (complain of spots on 6/3/14, referred to GP)" | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-25 | "2014-03-27 |   |   |   |   |
| 237 | 1  | "Abdominal Pain, referred to GP then medication given"        | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-04 | "2014-05-06 |   |   |   |   |
| 230 | 1  | "Watery eyes"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-02 | "2014-04-16 |   |   |   |   |
| 54  | 13 | "Rash on neck"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-04 | "2014-04-05 |   |   |   |   |
| 54  | 14 | "Finger pain"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-06 | "2014-04-20 |   |   |   |   |
| 54  | 15 | "Dry and cracked lips"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-02 | "2014-04-03 |   |   |   |   |
| 115 | 14 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-03-10 | "2014-03-11 |   |   |   |   |
| 152 | 3  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|     |    |                 |   |                          |                          |   |   |   |   |
|-----|----|-----------------|---|--------------------------|--------------------------|---|---|---|---|
| 152 | 4  | "Sore throat"   | 1 | "2014-03-09<br>00:00:00" | "2014-03-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 5  | "Headache"      | 1 | "2014-02-28<br>00:00:00" | "2014-03-01<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 6  | "Cough"         | 1 | "2014-03-15<br>00:00:00" | "2014-03-17<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 7  | "Headache"      | 1 | "2014-03-15<br>00:00:00" | "2014-03-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 8  | "Headache"      | 1 | "2014-04-11<br>00:00:00" | "2014-04-12<br>00:00:00" | 1 | 2 | 0 | 0 |
| 199 | 1  | "headache"      | 1 | "2014-03-07<br>00:00:00" | "2014-03-08<br>00:00:00" | 1 | 2 | 0 | 0 |
| 199 | 2  | "Hand pain"     | 1 | "2014-03-08<br>00:00:00" | "2014-03-09<br>00:00:00" | 1 | 2 | 0 | 0 |
| 145 | 3  | "headache"      | 1 | "2014-05-14<br>00:00:00" | "2014-05-15<br>00:00:00" | 1 | 2 | 0 | 0 |
| 145 | 4  | "back pain"     | 1 | "2014-05-18<br>00:00:00" | "2014-05-19<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 11 | "headache"      | 1 | "2014-04-15<br>00:00:00" | "2014-04-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 12 | "toothache"     | 1 | "2014-04-24<br>00:00:00" | "2014-04-25<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 13 | "toothache"     | 1 | "2014-04-26<br>00:00:00" | "2014-04-27<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 14 | "toothache"     | 1 | "2014-04-27<br>00:00:00" | "2014-04-28<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 15 | "pain in wrist" | 1 | "2014-05-03<br>00:00:00" | "2014-05-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 16 | "headache"      | 1 | "2014-05-06<br>00:00:00" | "2014-05-07<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 17 | "toothache"     | 1 | "2014-05-12<br>00:00:00" | "2014-05-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 18 | "headache"      | 1 | "2014-05-13<br>00:00:00" | "2014-05-14<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 19 | "headache"      | 1 | "2014-05-16<br>00:00:00" | "2014-05-17<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 20 | "earache"       | 1 | "2014-05-16<br>00:00:00" | "2014-05-17<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |    |  |   |             |             |   |   |   |   |
|-----|----|--|---|-------------|-------------|---|---|---|---|
|     |    |  |   | 17          | 18          |   |   |   |   |
|     |    |  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |  |   | "2014-05-18 | "2014-05-19 |   |   |   |   |
| 171 | 21 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-06 | "2014-05-07 |   |   |   |   |
| 169 | 4  | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-30 | "2014-05-01 |   |   |   |   |
| 176 | 5  | "Pain in testicle"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-02 | "2014-05-03 |   |   |   |   |
| 176 | 6  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-08 |             |   |   |   |   |
| 190 | 2  | "Hayfever"   | 1 | 00:00:00"   | "           | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-14 | "2014-05-12 |   |   |   |   |
| 192 | 4  | "Corns and callosities"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-26 | "2014-04-27 |   |   |   |   |
| 212 | 4  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-17 |             |   |   |   |   |
| 212 | 5  | "Hayfever"   | 1 | 00:00:00"   | "           | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-24 | "2014-04-25 |   |   |   |   |
| 184 | 2  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-14 | "2014-05-15 |   |   |   |   |
| 184 | 3  | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-16 | "2014-05-23 |   |   |   |   |
| 184 | 4  | "Sleeping difficulties"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-04 | "2014-05-07 |   |   |   |   |
| 177 | 2  | "Constipation"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-07 | "2014-05-08 |   |   |   |   |
| 177 | 3  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Back disorder - mechanical (for previous back pain but been getting worse and now being treated)" |   | "2014-04-24 | "           |   |   |   |   |
| 241 | 1  |  | 1 | 00:00:00"   | "           | 2 | 2 | 2 | 0 |
|     |    |  |   | "2014-05-16 | "2014-05-19 |   |   |   |   |
| 241 | 2  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-15 | "2014-04-16 |   |   |   |   |
| 230 | 2  | "Headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-04-18 | "2014-04-19 |   |   |   |   |
| 223 | 1  | "Toothache"  | 1 | 18          | 19          | 1 | 2 | 0 | 0 |

|     |    |   |   |             |             |   |   |   |   |
|-----|----|---|---|-------------|-------------|---|---|---|---|
|     |    |   |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |   |   | "2014-05-19 | "2014-05-20 |   |   |   |   |
| 223 | 2  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-02 | "2014-05-03 |   |   |   |   |
| 253 | 1  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-15 | "2014-05-17 |   |   |   |   |
| 253 | 2  | "Toothache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-20 | "2014-05-21 |   |   |   |   |
| 253 | 3  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-19 | "2014-05-20 |   |   |   |   |
| 281 | 1  | "Hayfever symptoms"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-21 | "2014-04-22 |   |   |   |   |
| 115 | 15 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-27 | "2014-04-28 |   |   |   |   |
| 115 | 16 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-04 | "2014-05-05 |   |   |   |   |
| 115 | 17 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-07 | "2014-05-08 |   |   |   |   |
| 115 | 18 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-10 | "2014-05-11 |   |   |   |   |
| 115 | 19 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-11 | "2014-05-12 |   |   |   |   |
| 115 | 20 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-19 | "2014-05-20 |   |   |   |   |
| 115 | 21 | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-22 | "2014-04-23 |   |   |   |   |
| 199 | 3  | "Rib pain"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-04-23 | "2014-04-24 |   |   |   |   |
| 199 | 4  | "Back pain"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "cough and blood in phlegm, chest pain, referred to GP, vital signs monitored, dx as Chest infection" | 1 | "2014-05-07 | "2014-05-27 |   |   |   |   |
| 198 | 1  |   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |   |   | "2014-05-20 | "2014-05-21 |   |   |   |   |
| 235 | 1  | "Headache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Cold symptoms - headache and sore throat"  | 1 | "2014-04-18 | "2014-05-05 |   |   |   |   |
| 188 | 1  |   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |

|     |    |   |   |                          |                          |   |   |   |   |
|-----|----|---|---|--------------------------|--------------------------|---|---|---|---|
| 263 | 1  | "Abcess"  | 1 | "2014-04-17<br>00:00:00" | "2014-04-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 2  | "Headache"  | 1 | "2014-04-23<br>00:00:00" | "2014-04-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 244 | 1  | "Damaged toe nail, saw podiatry, nails cut and filed"   | 1 | "2014-05-01<br>00:00:00" | "2014-05-01<br>00:00:00" | 1 | 1 | 0 | 0 |
| 68  | 1  | "Ankle Pain"  | 1 | "2014-05-16<br>00:00:00" | "2014-05-16<br>00:00:00" | 1 | 2 | 0 | 0 |
| 68  | 2  | "Headache"  | 1 | "2014-05-24<br>00:00:00" | "2014-05-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 270 | 1  | "Shoulder pain, seen by physio and doctor"  | 1 | "2014-05-16<br>00:00:00" | "2014-06-13<br>00:00:00" | 1 | 2 | 0 | 0 |
| 114 | 1  | "Right side of face slightly swelling, referred to doctor, serum, calcium and thyroid levels checked by doctor" | 1 | "2014-03-20<br>00:00:00" | "2014-04-03<br>00:00:00" | 1 | 1 | 0 | 0 |
| 114 | 2  | "Right side of face intermittent swelling"  | 1 | "2014-04-30<br>00:00:00" | "2014-04-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 112 | 2  | "Lower back pain, referred to physio"   | 1 | "2014-04-08<br>00:00:00" | "2014-05-02<br>00:00:00" | 1 | 1 | 0 | 0 |
| 112 | 3  | "Fight"   | 1 | "2014-01-19<br>00:00:00" | "2014-01-19<br>00:00:00" | 1 | 1 | 1 | 0 |
| 176 | 7  | "Restraint, no injury"  | 1 | "2014-02-22<br>00:00:00" | "2014-02-22<br>00:00:00" | 1 | 1 | 1 | 0 |
| 152 | 9  | "Headache"  | 1 | "2014-04-11<br>00:00:00" | "2014-04-11<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 10 | "Pain in right knee"  | 1 | "2014-04-21<br>00:00:00" | "2014-04-21<br>00:00:00" | 1 | 2 | 0 | 0 |
| 152 | 11 | "Musculoskeletal pain"  | 1 | "2014-04-30<br>00:00:00" | "2014-04-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 145 | 5  | "Rashes all over body and face, referred to GP"   | 1 | "2013-12-16<br>00:00:00" | "2013-12-16<br>00:00:00" | 1 | 1 | 0 | 0 |
| 135 | 4  | "visible scars from acne, advised to continue taking medication as prescribed"                                  | 1 | "2014-02-22<br>00:00:00" | "2014-02-22<br>00:00:00" | 1 | 1 | 0 | 0 |
| 135 | 5  | "complaint about spots on back,"  | 1 | "2014-04-28<br>00:00:00" | "2014-04-28<br>00:00:00" | 1 | 1 | 0 | 0 |

|     |    |   |   |                          |                          |   |   |   |   |
|-----|----|---|---|--------------------------|--------------------------|---|---|---|---|
|     |    | referred to GP"   |   | 00:00:00"                | 00:00:00"                |   |   |   |   |
| 169 | 5  | "Lumps on throat getting bigger, advised to gargle with salt water, seen by GP"   | 1 | "2014-05-12<br>00:00:00" | "2014-05-16<br>00:00:00" | 1 | 1 | 0 | 0 |
| 212 | 6  | "Dry skin on face, neck and arms, referred to GP"   | 1 | "2014-05-09<br>00:00:00" | "2014-05-09<br>00:00:00" | 1 | 1 | 0 | 0 |
| 184 | 5  | "neck pain following exercise, pain worsened since onset, referred to GP"   | 1 | "2014-04-24<br>00:00:00" | "2014-04-24<br>00:00:00" | 1 | 1 | 0 | 0 |
| 184 | 6  | "Verbally abusive to nursing staff"   | 1 | "2014-05-20<br>00:00:00" | "2014-05-20<br>00:00:00" | 1 | 1 | 0 | 0 |
| 253 | 4  | "Loose dentures, staff to find out if fixedent supplied by pharmacy"  | 1 | "2014-04-26<br>00:00:00" | "2014-04-26<br>00:00:00" | 1 | 1 | 0 | 0 |
| 241 | 3  | "Diagnosed HSV in sexual health clinical"   | 1 | "2014-05-16<br>00:00:00" | "2014-05-16<br>00:00:00" | 1 | 1 | 0 | 0 |
| 226 | 1  | "low mood, referred to psychologist"  | 1 | "2014-05-23<br>00:00:00" | "2014-05-23<br>00:00:00" | 1 | 1 | 0 | 0 |
| 62  | 11 | "Broken, painful teeth, seen by dentist temporary filling given"  | 1 | "2013-12-12<br>00:00:00" | "2013-12-12<br>00:00:00" | 1 | 1 | 0 | 0 |
| 62  | 12 | "dry skin and spots, seen by nurse, request repeat prescription from GP"  | 1 | "2014-02-28<br>00:00:00" | "2014-02-28<br>00:00:00" | 1 | 1 | 0 | 0 |
| 62  | 13 | "Fight, nose bleed, seen by nurse"  | 1 | "2014-04-15<br>00:00:00" | "2014-04-15<br>00:00:00" | 1 | 1 | 1 | 0 |
| 54  | 16 | "fight, no injury"  | 1 | "2013-07-09<br>00:00:00" | "2013-07-09<br>00:00:00" | 1 | 1 | 1 | 0 |
| 54  | 17 | "sore throat, referred to GP"   | 1 | "2014-02-07<br>00:00:00" | "2014-02-07<br>00:00:00" | 1 | 1 | 0 | 0 |
| 54  | 18 | "ACCT document open (because individual is seen as a risk to self or other) due to low mood, self harm and tied kettled cord around neck" | 1 | "2014-01-17<br>00:00:00" | "2014-01-29<br>00:00:00" | 1 | 1 | 1 | 0 |

|     |    |  |   |                       |                       |   |   |   |   |
|-----|----|--|---|-----------------------|-----------------------|---|---|---|---|
| 54  | 19 | "tied ligature around neck, restrained, no injuries"   | 1 | "2014-01-18 00:00:00" | "2014-01-18 00:00:00" | 1 | 1 | 2 | 0 |
| 54  | 20 | "fight, no injuries"   | 1 | "2013-12-26 00:00:00" | "2013-12-26 00:00:00" | 1 | 1 | 1 | 0 |
| 66  | 2  | "cyst in mouth, seen by GP"  | 1 | "2014-03-24 00:00:00" | "2014-04-04 00:00:00" | 1 | 1 | 0 | 0 |
| 66  | 3  | "sweaty palms, seen by GP"   | 1 | "2014-04-04 00:00:00" | "2014-04-04 00:00:00" | 1 | 1 | 0 | 0 |
| 66  | 4  | "lump in left testicle, seen by GP referred for scan"  | 1 | "2013-11-13 00:00:00" | "2013-11-22 00:00:00" | 1 | 1 | 0 | 0 |
| 66  | 5  | "cut lip from play fighting"   | 1 | "2013-10-31 00:00:00" | "2013-10-31 00:00:00" | 1 | 1 | 0 | 0 |
| 199 | 5  | "ACCT document (a document that is opened when individual poses a risk to self or other) review, kept open upon review on 13/2/14"   | 1 | "2014-02-13 00:00:00" | "2014-02-20 00:00:00" | 1 | 1 | 1 | 0 |
| 199 | 6  | "ACCT document (a document that is opened when individual poses a risk to self or other) reopened due to suicide note found in cell" | 1 | "2014-02-28 00:00:00" | "2014-03-11 00:00:00" | 1 | 1 | 1 | 0 |
| 199 | 7  | "ACCT document (a document that is opened when individual poses a risk to self or other) reopened"                                   | 1 | "2014-03-14 00:00:00" | ""                    | 1 | 1 | 1 | 0 |
| 199 | 8  | "deliberate self harm - superficial cuts to lower left arm"  | 1 | "2014-05-19 00:00:00" | "2014-05-19 00:00:00" | 1 | 1 | 1 | 0 |
| 263 | 3  | "Chest pain"   | 1 | "2014-04-25 00:00:00" | ""                    | 1 | 2 | 1 | 2 |
| 263 | 4  | "Musculoskeletal pain (not specified)"   | 1 | "2014-04-26 00:00:00" | "2014-04-27 00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 5  | "Wrist pain"   | 1 | "2014-05-02 00:00:00" | "2014-05-03 00:00:00" | 1 | 2 | 0 | 0 |

|     |    |  |   |                          |                          |   |   |   |   |
|-----|----|--|---|--------------------------|--------------------------|---|---|---|---|
| 263 | 6  | "Pain in upper limb"                         | 1 | "2014-05-03<br>00:00:00" | "2014-05-04<br>00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 7  | "Headache"                                   | 1 | "2014-05-04<br>00:00:00" | "2014-05-05<br>00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 8  | "Wrist pain"                                 | 2 | "2014-05-12<br>00:00:00" | "2014-05-14<br>00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 9  | "Headache"                                   | 1 | "2014-05-17<br>00:00:00" | "2014-05-18<br>00:00:00" | 1 | 2 | 0 | 0 |
| 263 | 10 | "Restraint, handcuffed - wrist pain"         | 1 | "2014-05-12<br>00:00:00" | "2014-05-12<br>00:00:00" | 1 | 1 | 1 | 0 |
| 135 | 6  | "Headache"                                   | 1 | "2014-06-10<br>00:00:00" | "2014-06-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 22 | "Pain in elbow"                              | 1 | "2014-05-24<br>00:00:00" | "2014-05-24<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 23 | "Headache and earache"                       | 1 | "2014-05-30<br>00:00:00" | "2014-05-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 171 | 24 | "Toothache"                                  | 1 | "2014-06-14<br>00:00:00" | "2014-06-14<br>00:00:00" | 1 | 2 | 0 | 0 |
| 212 | 7  | "Chest pains in response to exercise"        | 1 | "2014-06-09<br>00:00:00" | "2014-06-09<br>00:00:00" | 1 | 2 | 0 | 0 |
| 212 | 8  | "Headache"                                   | 1 | "2014-05-28<br>00:00:00" | "2014-05-29<br>00:00:00" | 1 | 2 | 0 | 0 |
| 177 | 4  | "stomach pain"                               | 1 | "2014-05-30<br>00:00:00" | "2014-05-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 177 | 5  | "abdominal pain"                             | 1 | "2014-05-31<br>00:00:00" | "2014-05-31<br>00:00:00" | 1 | 2 | 0 | 0 |
| 177 | 6  | "headache"                                   | 1 | "2014-06-14<br>00:00:00" | "2014-06-14<br>00:00:00" | 1 | 2 | 0 | 0 |
| 237 | 2  | "Insomnia"                                   | 1 | "2014-05-30<br>00:00:00" | "2014-05-30<br>00:00:00" | 1 | 2 | 0 | 0 |
| 237 | 3  | "Headache"                                   | 1 | "2014-06-09<br>00:00:00" | "2014-06-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 230 | 3  | "Fight, cuts to right side of face and neck" | 1 | "2014-06-01<br>00:00:00" | "2014-06-01<br>00:00:00" | 1 | 1 | 1 | 0 |
| 253 | 5  | "Headache"                                   | 1 | "2014-06-10<br>00:00:00" | "2014-06-10<br>00:00:00" | 1 | 2 | 0 | 0 |
| 253 | 6  | "headache"                                   | 1 | "2014-06-10<br>00:00:00" | "2014-06-10<br>00:00:00" | 1 | 2 | 0 | 0 |

|     |    |  |   |             |             |   |   |   |   |
|-----|----|--|---|-------------|-------------|---|---|---|---|
|     |    |  |   | 13          | 13          |   |   |   |   |
|     |    |  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |  |   | "2014-06-14 | "2014-06-14 |   |   |   |   |
| 253 | 7  | "hayfever symptoms"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Pain in jaw from falling out of bed 5 days ago, referred to GP, x-ray done" |   | "2014-05-31 | "2014-06-11 |   |   |   |   |
| 226 | 2  |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-14 | "2014-06-15 |   |   |   |   |
| 226 | 3  | "Hayfever "  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-06-05 |             |   |   |   |   |
| 62  | 14 | "Adjudication for various things"  | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 0 |
|     |    | "wrist injury, restrained when taken to segrgation"                          |   | "2014-06-06 | "2014-06-06 |   |   |   |   |
| 54  | 21 |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-06 |             |   |   |   |   |
| 54  | 22 | "Segregation"  | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-05-27 | "2014-05-27 |   |   |   |   |
| 115 | 22 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-31 | "2014-06-01 |   |   |   |   |
| 115 | 23 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-06-03 | "2014-06-03 |   |   |   |   |
| 115 | 24 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-06-05 | "2014-06-05 |   |   |   |   |
| 115 | 25 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-06-15 | "2014-06-15 |   |   |   |   |
| 115 | 26 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-25 | "2014-05-25 |   |   |   |   |
| 199 | 9  | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "deliberate self harm - superficial cuts to lower left arm"                  |   | "2014-05-29 | "2014-05-29 |   |   |   |   |
| 199 | 10 |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 1 | 0 |
|     |    |  |   | "2014-05-31 | "2014-05-31 |   |   |   |   |
| 199 | 11 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "deliberate self harm - superficial cuts to left wrist"                      |   | "2014-06-05 | "2014-06-05 |   |   |   |   |
| 199 | 12 |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 1 | 0 |
|     |    |  |   | "2014-06-15 |             |   |   |   |   |
| 199 | 13 | "Hayfever"   | 1 | 00:00:00"   | ""          | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-05-29 | "2014-05-29 |   |   |   |   |
| 198 | 2  | "toothache"  | 1 | 29          | 29          | 1 | 2 | 0 | 0 |

|     |    |  |   |             |             |   |   |   |   |
|-----|----|--|---|-------------|-------------|---|---|---|---|
|     |    |  |   | 00:00:00"   | 00:00:00"   |   |   |   |   |
|     |    |  |   | "2014-05-24 | "2014-05-24 |   |   |   |   |
| 263 | 11 | "Sore lips"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Difficulty breathing and pain in nostrils, referred to GP"            |   | "2014-06-03 |             |   |   |   |   |
| 263 | 12 | "Pain in wrist from restraint 3 weeks ago, seen by physio"             | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-04 | "2014-06-04 |   |   |   |   |
| 263 | 13 |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-07 | "2014-06-07 |   |   |   |   |
| 263 | 14 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    |  |   | "2014-06-09 | "2014-06-09 |   |   |   |   |
| 263 | 15 | "toothache"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "deliberate self harm superficial cuts to left forearm"                |   | "2014-06-11 | "2014-06-11 |   |   |   |   |
| 263 | 16 |  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 1 | 0 |
|     |    |  |   | "2014-06-11 | "2014-06-11 |   |   |   |   |
| 263 | 17 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Nosebleed and symptoms of sinusitis query, referred to GP"            |   | "2014-06-13 | "2014-06-13 |   |   |   |   |
| 263 | 18 | "ACCT document (for when individual poses risk to self or other) open" | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-15 |             |   |   |   |   |
| 263 | 19 |  | 1 | 00:00:00"   | ""          | 1 | 1 | 0 | 0 |
|     |    |  |   | "2014-06-15 | "2014-06-15 |   |   |   |   |
| 263 | 20 | "headache"   | 1 | 00:00:00"   | 00:00:00"   | 1 | 2 | 0 | 0 |
|     |    | "Possibly hearing voices - to be investigated ASAP"                    |   | "2014-06-30 | "2014-06-30 |   |   |   |   |
| 190 | 3  |  | 1 | 00:00:00"   | 00:00:00"   | 2 | 1 | 1 | 2 |
|     |    |  |   | "2014-06-03 | "2014-07-03 |   |   |   |   |
| 270 | 2  | "Severe appetite reduction"  | 1 | 00:00:00"   | 00:00:00"   | 1 | 1 | 0 | 0 |

**PRINCIPAL OR COORDINATING  
INVESTIGATOR(S) SIGNATURE(S)  
OR SPONSOR'S RESPONSIBLE MEDICAL OFFICER**

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STUDY TITLE: A pilot study of Concerta XL in adult offenders with ADHD

STUDY AUTHOR(S): Clare Evans, Andrew Forester, Susan Young, Philip Asherson

*I have read this report and confirm that to the best of my knowledge it accurately describes the conduct and results of the study*

INVESTIGATOR: Philip Asherson  
OR SPONSOR'S  
RESPONSIBLE  
MEDICAL OFFICER

SIGNATURE(S) 

AFFILIATION: Kings College London

DATE: 28th February 2016