The Maudsley Addiction Profile
A brief instrument for treatment outcome research

Development and User manual

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PREAMBLE

Welcome to the Development and User manual for the Maudsley Addiction Profile**.** The MAP is a brief, structured interview for treatment outcome research.

This document is in four parts:

Part I: Describes the rationale and development of the instrument.

Part II: Summarises how to administer the MAP and contains suggestions on good interviewing practice.

Part III: Presents the results of the field-testing of the instrument and its psychometric characteristics.

Part IV: Shows an example MAP instrument which can be photocopied or adapted as required.

The authors welcome comments on the instrument and the User Manual. Please direct comments to

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PART I: INTRODUCTION AND USING THE INSTRUMENT

The MAP is a brief, interviewer administered questionnaire for treatment outcome research applications. It measures problems in four domains: substance use, health risk behaviour, physical and psychological health, and personal/social functioning. The MAP is the first brief questionnaire to be developed in the UK for assessing these domains with people with drug and alcohol problems. It is designed as a core research instrument and to be a resource for treatment services wishing to undertake outcome studies. For most subjects, interview completion time is approximately 12 minutes.   The MAP is a public domain research instrument and may be used free of charge for not-for-profit applications. Users are asked to cite the following reference when using the instrument:

> Marsden, J. Gossop, G. Stewart, D. Best, D. Farrell, M. Lehmann, P. Edwards, C. & Strang, J. (1998) The Maudsley Addiction Profile (MAP): A brief instrument for assessing treatment outcome, *Addiction* 93(12): 1857-1867.

We have designed the MAP explicitly for outcome research purposes. All of the problem measures can be repeatedly administered at points during and after an index treatment episode. Changes in these measures can then be attributed to treatment or other processes over the intervening period. A key principle behind the MAP is that, as a core instrument, other measures and items can be added as required according to clinical, operational or research requirement. For example, a measure of drug dependence could be included, as well as questions concerning drug use history.

Rationale
The rationale for the development of the MAP concerns the increased recognition in the UK of the importance of extending research on the outcome of treatment for substance use problems (Task Force to Review Services for Drug Misusers 1996). Significantly, the national strategy on drug misuse has prioritised the expansion of outcome research and performance monitoring of treatment services (Tackling Drugs to Build a Better Britain, 1998). In the United States the value of gathering data on treatment outcome has been widely promoted across the present decade (Institute of Medicine 1990; Center for Substance Abuse Treatment 1995) and several systems have been developed (e.g. Harrison *et al.* 1996; Dennis, *et al.* 1998). In the UK progress towards expanding outcome research efforts is at an early stage. Launched in 1995, the on-going National Treatment Outcome Research Study (NTORS) has

advanced understanding of outcomes for people entering community methadone prescribing services and residential programmes. Little systematic work has been undertaken in other treatment modalities and settings.   In particular, little priority has been given to developing valid and reliable instruments to assess treatment outcome. One obstacle to implementing outcome studies has been the lack of consensus about what constitutes a minimum outcomes data set.

Against this background, we saw the need for a new instrument for assessing treatment outcome, which could provide a minimum outcome data set. Omnibus instruments for treatment research have been developed in other countries (e.g. Addiction Severity Index, ASI, McLellan *et al.* 1980; McLellan *et al.* 1992a; and Opiate Treatment Index, OTI, Darke *et al*. 1992). Partly because of their completion time (approximately 45 minutes), these have not been widely used in the UK. Given the importance of minimising the administrative burden on treatment personnel we considered there to be important benefits from developing a brief, core instrument for outcome research.

Initial development

The content-related validity of the items for the MAP was specifically informed from the outcome domain areas used by a Department of Health Task Force (Task Force on Services for Drug Misusers, 1995) based on recommendations from Marsden 1994 and from the development and implementation of a wider set of outcome measures for the National Treatment Outcome Research Study (NTORS)(Marsden et al., 1998). The items for the instrument were also informed by relevant outcome instruments and outcome monitoring (e.g. McLellan et al., 1995; Darke at al., 1992; Simpson & Chatham 1995; Dennis, *et al.* in press).

In the field-tested version of the MAP, the subject's recall period is the past 30 days (one month) before the entering an index treatment.   As far as possible, we have sought to incorporate continuous measures with a common metric. For example, the measures of frequency of behaviour can be expressed in percentage terms (e.g. percent of days used heroin; percent days in conflict with partner; percent days employed) and these indicators can be clearly interpreted. Categorical measures can also be calculated at follow-up to describe substance use (e.g. the proportion of a sample that are abstinent, infrequent, regular, and daily users) as well as the percentage of subjects who report injecting, sharing needles/syringes, employment and crime. At this initial stage in the development of the MAP, pretreatment means for the physical and psychological health scales can be used to contrast mean scores for individuals and samples measured in future studies. Changes in severity estimates for individual items may also be valuable single indicators of treatment benefit (for example, the frequency of suicidal ideation from

the depression sub-scale). Please note that although the MAP records problems in key areas, that these problems are not necessarily caused or attributed by the subject to his/her use of drugs or alcohol. The subject is not asked to attribute whether problems have been due to or caused by their substance use behaviour.

Practical applications

In practical usage, we recommend that a modular approach to outcome research is adopted in which a primary set of outcome measures is recorded, with other outcome measures included as required. This would allow for a core set of measures to be gathered across different programmes to facilitate the communication of results, whilst promoting flexibility in the set of outcome measures collected. Assessment could also incorporate measures of direct and indirect needle/syringe sharing practices, using for example the Injecting Risk Questionnaire (Stimson, *et al.*, 1998). We have also recently developed the Treatment Perceptions Questionnaire (TPQ, Marsden et al., 1998), a brief 10-item measure of addiction treatment satisfaction, which can be used as an adjunct to the core MAP instrument as required. Other measures of personal and environmental supports and stressors using existing instruments may be usefully added. Measures of treatment itself are also required and there are several instruments available which record different aspects of treatment processes and programme environment (Simpson & Chatham 1995; Moos 1988b; McLellan *et al.* 1992b). As a minimum, the setting, modality and duration of treatment should be recorded. Additional measures of a client's choice of treatment goals, the amount of programme services received, the financial cost of programme services received, treatment discharge status and additional non-index treatments received, could also be used in a comprehensive outcome evaluation.

Problem domains assessment by the MAP

Attenuation or cessation of drug and/or alcohol consumption is the obvious primary indicator of success for this treatment population. Individuals entering treatment may also suffer from chronic and/or acute medical, psychological and social difficulties. Reflecting this, research studies have used an increasingly broad array of problem measures and outcome evaluations and analyses have become multi-dimensional (eg. McLellan *et al.* 1980; Taylor *et al.* 1985; Simpson, Joe & Lehman 1986; Moos, Finney & Cronkite 1990). Three problem domains are usually assessed: (a) drug and alcohol consumption; (b) health problems; and (c) personal/social functioning; the latter usually spanning relationship problems, employment and crime involvement (McLellan *et al.* 1980; Babor *et al.* 1994; Simpson & Chatham 1995). Since the mid 1980s, the risk of exposure of drug injectors to the Human Immunodeficiency Virus (HIV) and other blood-borne infections (eg. Hepatitis B and C

viruses) has led to the important addition of a fourth domain concerning injecting and other health risk behaviours (Strang 1992). Measures of outcome from these four domains are described in the following section.

Substance use

There is now broad agreement that treatment outcome studies should record, as a minimum, the frequency of use of different substances in 24-hour intervals during a recall period and the intensity of daily consumption (Wells, Hawkins & Catalano 1988; Addiction Research Foundation 1993; Babor *et al.* 1994). These measures reflect the likelihood of harm to the user arising when substances are consumed either with high frequency and/or high intensity (ie. large amounts consumed on a single occasion). In addition it is important to record whether a substance is taken by medical prescription and also the route(s) used for its administration (ie. oral, intranasal, inhalation and injection).

For alcohol, consumption is usually reported by ethanol content, by weight or fluid volume (Miller, Heather & Hall 1991). In contrast, measuring the content of illicit drugs doses can be problematic. Outcome research in the US has tended to focus on frequency rather than intensity measures because of concerns about the accuracy of self-reports of drug purity and the size of drug doses. Nevertheless, an estimate of the usual quantity consumed of used substances is a desirable additional clinical and research measure, not least because at follow-up an individual may have maintained the same frequency of use but achieved a marked reduction in their intensity of consumption. In the UK, concerns over the accuracy of self-reported illicit drug content are offset to some extent by data showing that purity levels of retail seizures of illicit heroin and cocaine have been broadly constant for many years (King 1997; Strang, Griffiths & Gossop 1997).

Health risk behaviour

Injecting drug users may be exposed to blood borne infections through the "sharing" of infected needles/syringes, and potentially through the sharing of certain items used in injection procedures (Gossop *et al.* 1997b). Assessments of the frequency of injecting, sharing and other injecting risk behaviours are acknowledged to be important outcome measures of service interventions. At the population level, HIV is mainly transmitted through sexual intercourse. Since many substance users are sexually active, the assessment of penetrative sexual behaviour without condom use is also an important measure of risk of viral exposure (McKeganey, Bernard & Waston 1989; Magura *et al.* 1990; Donoghoe 1992).

Physical and psychological health

There are a variety of physical and psychological health disorders which may be linked to or concurrent with problem substance use (Wartenberg 1994; Rubin & Benzer 1997). Of all the psychological disorders, a high prevalence of anxiety and depressive thoughts of a transient or chronic nature have most commonly been reported amongst substance users in treatment (eg. Rounsaville *et al.* 1982; Ross, Glaser & Germanson 1988). The management of physical and psychological health problems is a common activity in many treatment programmes. However, there has been relatively less attention to developing and assessing physical and psychological health symptoms in substance using treatment populations as outcome measures.

Personal/social functioning

In this broad domain, three areas are usually assessed: (i) Relationship conflicts and problems. Treatment programmes broadly aim to encourage improved relations between a subject and his/her sexual partner, family and friends. Conflict in these areas has been shown to exert an important negative predictor of outcome (Moos, Fenn & Billings 1988a). (ii) Employment. Involvement in a paid job has been found to be a predictor of retention in treatment and good outcome (Simpson, Joe & Lehman 1986). Although the ability of a treatment programme to secure a job for a subject may be limited, community services will usually seek to support a subject to improve employment opportunities, and securing or maintaining a job is recognised to be an important goal (French *et al.* 1992). (iii) Criminal activity.   For some individuals, crime is an instrumental means of funding drug use (Jarvis & Parker 1989; Hough 1996). A reduction in criminal involvement is an important public safety benefit from treatment, and the number of property crimes (particularly shoplifting, the most frequent property crime), drug-selling and other acquisitive crimes are usually recorded by outcome studies (eg. Anglin & Speckart 1988).

STRUCTURE OF THE MAP

The 30-day period before intake to treatment was used as the recall period for the MAP interview. This period has been used in a variety of research instruments (e.g. McLellan *et al.* 1992a; Simpson & Chatham 1995) and is a compromise between a shorter period (such as seven days) which may fail to capture episodic substance use and other behaviour, and a longer period (such as six months) where a subject may be more likely to experience recall problems.

Structure of the field tested version of the instrument

The Following an introductory section the MAP contains 60 items in four domains.

(a) Substance use. Assessment was limited to five substance types which are associated with clinical problems amongst our clients at the Maudsley Hospital and which are broadly representative of the substances which are currently used by the treatment seeking population in the UK: illicit heroin, non-prescribed methadone and benzodiazepines (usually diazepam and temazepam), cocaine hydrochloride, cocaine base (crack) and alcohol. For use in other settings and countries the substitution or addition of other psychoactive substances to the MAP may be required.   The total number of days of use for a substance before intake is recorded first. The subject is shown a response card with seven common frequency patterns (ranging from "one day per week" to "every day") and is asked which of these summarises the frequency of their use. The corresponding number of days is then recorded. For substances used on an episodic basis, or when there is no typical pattern, the interviewer uses a calendar to prompt recall of the last day that substance was used. This day and any previous days during the recall period is recorded. Intensity of substance use is assessed from the verbatim report of the amount consumed on a typical using day in the past month (usually given by weight or by retail price, with prompting as required). For alcohol, consumption on a typical drinking day is assessed in terms of beverage types, strength of alcohol content and the number and sizes of drinks. Self-reports are recorded verbatim and later converted into standardised units of ethanol (1 unit = 8g -10g; 0.28- 0.35 ounces). In instances where the quantity of alcohol or other substances consumed has varied, the subject is asked to recall the amount used on the two-three most recent days of use during the recall period. These are recorded verbatim and later averaged. With the exception of alcohol, the usual route(s) of administration is recorded using the following categories: oral, intranasal, inhalation and injection.

(b) Health risk behaviour. The number of days on which the subject injected drugs

and the number of injections on a typical day is recorded first. Episodic injecting patterns are recorded using the same procedure described above. The subject is also asked about the number of times they have injected using a needle/syringe which they believe has already been used by someone else. For sexual intercourse, the subject is asked to estimate the number of people and the number of times in total that they have had penetrative sex and not used a condom.

(c) Health symptoms.
Physical

A 10-item physical health symptom scale was adapted from a 51-item checklist from the Opiate Treatment Index (Darke *et al.* 1991). Treatment intake data from the OTI health scale for 1075 participants in NTORS was used to reduce the number of original items. The drug injecting-related items were removed to make the new scale jointly applicable to drug users (DUs) and alcohol users (AUs). Ten items were removed using a criterion of 20% or less of NTORS participants reporting each symptom in the past 90 days before intake to treatment. Dental problems and loss of sex urge were reported by 54% and 63% of the sample, respectively. We elected to remove these from the new item pool because of a lack of fit with items in the other functional systems. Spearman's rho rank-order correlations were computed for each of the retained pairs of items from each section. Correlations between any two pairs did not exceed 0.41. In each section with more than two items, the pair with the highest rank order correlations were selected. The final five functional systems, component items and rank order correlations ($p < .0001$) are: general (poor appetite and tiredness/fatigue), $r = 0.31$); cardio-respiratory (chest pains and difficulty breathing), $r = 0.39$); gastro-intestinal (nausea and stomach pains), $r = 0.38$); neurological (tremors/shakes and numbness/tingling), $r = 0.41$); and musculo-skeletal (joint pain/stiffness and muscle pain), $r = 0.32$). A five-point Likert-type scale was included to assess the frequency of experiencing each symptom using the following expressions: never, rarely, sometimes, often, always (scored 0-4). The scale is scored by summing the weights 0-4 across the 10 items. Internal reliability of the scale was satisfactory (alpha = 0.77).

Psychological

A 10-item scale to assess psychological health symptoms was also derived from the two six-item anxiety and depression sub-scales of the Brief Symptom Inventory (BSI, Derogatis 1975). Intake data from selected sub-scales from the BSI as used in NTORS was utilised to adapt scale items for the MAP. Internal reliability of the anxiety sub-scale was increased to 0.88 by the removal of one item ("feeling you could not sit still"). The five retained items are as follows: "Feeling tense and keyed

up"; "suddenly scared for no reason"; "feeling fearful"'; "nervousness or shakiness inside"; and, "spells of terror or panic". For the depression sub-scale, an initial item from the BSI, "feeling blue", was judged to be an expression in limited contemporary use in the UK and was removed. The internal reliability of the five items was satisfactory (alpha = 0.81). The retained items are: "Feeling hopeless about the future"; "feelings of worthlessness"; "feeling no interest in things"; "feeling lonely"; "thoughts of ending your life". A five point Likert-type anchoring (never - always) is again used for the overall 10-item psychological health scale.

(d) Personal/Social functioning. The final domain contains nine items in three areas:

(i) *Relationship conflict*. A measure of conflict in personal relationships was taken by recording the number of days on which the subject had contact with his/her sexual partner, relative(s) and friends and the number of days on which there had been serious conflict. These are based on measures of family conflict developed for the Addiction Severity Index (McLellan *et al.* 1992a). The MAP extends the original ASI items by enquiring first about the amount of time the client has spent with their partner, relatives and friends relationship conflict. Contact is defined as face-to-face interactions or telephone calls. Serious conflict is defined as major arguments, verbal abuse and/or violence, but not routine differences of opinion. If the subject was not in a personal sexual relationship, or did not have relatives or friends, a score of zero is recorded reflecting no conflict on these measures.

(ii) *Employment*. Three measures of employment are taken: the number of days of formal unemployment; the number of days on which the subject undertook paid work; and the number of working days on which the subject did not attend work due to sickness or unauthorised absence.

(iii) *Criminal behaviour*. Three categories of criminal activity are recorded: sales of illegal drugs, shoplifting, and "other crime" - including theft from a property, theft from a person, theft from or of a vehicle, and fraud/forgery. The number of days and times on a typical day on which each crime type was committed is recorded.

PART 11: ADMINSTRATION AND SCORING

In this section, we describe how to use and score the MAP for research and outcome monitoring applications.   In this section, notes on scoring the instrument are shown in highlighted boxes. An example of the questionnaire is shown in Part IV (page 37). This example contains the core items of the instrument and has a front sheet with various management and operational measures. In practice, these will need to be tailored to the needs of the particular application and/or treatment setting. Additional measures which may need to be included are: presence of additional health disorders, case re-referral information; treatment funding issues (and duration of episode if known).   The structure of the MAP instrument shown is follows:

Section	Item
A: Management Information	Programme setting, client demographics , non-attributable identifiers and referral details
B: Substance use	Number of days used substances Typical amount used per day when using Main route(s) of administration
C: Health risk behaviour	Days injected Typical times injected per day Times sharing needles or syringes Number of sexual partners when not using condom Times had sex without using condom
D: Health symptoms	Frequency of physical symptoms Frequency of psychological symptoms
E: Personal /social functioning	Days contact/conflict partner, relative, friends Days had paid job. Days missed (sickness/unauthorised) Days unemployed Days committed illegal activities; times/day

It is important to understand the purpose of each question, and we recommend thorough study of the MAP in advance. This is particularly important when clarifying areas of uncertainty or confusion for a subject. When using the MAP for the first few times, it is advisable to include specific question wording for preambles to sections and specific items and to read these out to the subject.   As interviewers become familiar with the structure and will want to use personal phrasing to introduce each section and specific question. Naturally, it is very important to retain the same meaning of the original items to maximise the validity and reliability of the interview.

It is also very important to ensure that all the questions are completed. However, if, the subject refuses to answer a question or section, note "refused" and move on. We have found that it is very rare for a subject to refuse to answer the questions, and this can be minimised by repeatedly assuring the subject of the confidentiality of the interview. For some questions, a response card should be used to assist recall. Use of the response cards for the instrument are described in the relevant sections below.

Preamble

If the MAP is used for treatment programme outcome monitoring it is recommended that the following is conveyed to the subject.

1. "We are gathering information from all of our clients to help learn more about how people respond to treatment and how we can make our services more effective".

2. "I am going to ask you to complete a form with me which asks about your substance use, and various aspects of your life during the past 30 days. The information will remain *confidential* and will only be used for evaluation purposes".

As implemented in practice, subjects may be asked to sign a consent form for participating in the study or outcome monitoring programme. Please note that following good research practice it is important to inform subjects that they can refuse to answer any question.

Section A: Management Information

As required, the MAP interview may contain a brief introductory section to record the subject's demographic details, treatment setting, referral details and the client's interview point (for example intake, 3 months, 6 months or 12 months after intake or at departure from the index treatment, and 3,6 and 12 months after departure). This content of this section will reflect local concerns and research applications.

Section B: Substance use

This section contains a list of drug types. The example instrument shown in Part IV lists alcohol, heroin, illicit (non-prescribed) methadone, one type of benzodiazepine, cocaine hydrochloride (powder), cocaine in smokable form (crack/rock) cocaine and amphetamines. Please note that other substances can be added according to clinical and research requirements. For each, the MAP asks the subject to recall: (i) the total number of days used in the past month; (ii) the typical amount used across a day when using; and (iii) their main route(s) of drug use administration. Introduce the section by telling the subject that you want to begin by looking at their use of different substances in the past month. State that you will take the last month to be the **past 30 days beginning from yesterday**. We take this to be an approximate month (ie. 30 days divided by 7 = 4.29 weeks). Complete section B as follows:

1.   Show *Card 1* and ask the subject to recall the number of days on which he/she used alcohol in the past month. Card 1 has been prepared to assist the subject to recall this.

Card 1

Every day	30
6 days a week	26
5 days a week	21
4 days a week	17
3 days a week	13
2 days a week	9
Seven days	7
Six days	6
Five days	5
Four days	4
Three days	3
Two days	2
One day only	1
Some other number	__
None	0

e.g.   Subject estimates alcohol use to be "two days per week" in the past month. Enter 9 in the days used column on the alcohol row (2 x 4.29 = 8.6)

2. After the total days of use has been entered, ask the subject to think of a typical day when they used in the past month, and estimate the **total amount consumed across the day (i.e. the morning, afternoon and evening)**.

3. Some subjects may have difficulty with recall of substance use in the past month, particularly if their use has been highly irregular. If this is the case, the quickest alternative is to use an averaging method over the three most recent days on which the subject used, (or two if less than three days used) , as follows:
   (i)   ask subject to recall most recent day when used and record amount consumed across that day;
   (ii)   then ask subject to recall the next previous day used and record amount.
   (iii)   then ask subject to recall the next previous day used and record amount.

The mean amount consumed across these three recent days can be calculated later.

4.   Repeat procedure for each drug type listed. For **methadone,** the formulation must be described, i.e. liquid/tablets/ampoules. If the subject has taken more than one formulation enter verbatim (e.g. 40 ml of mixture + 10mg ampoule). For **benzodiazepines** enter the drug name and amount; if the subject has used several benzodiazepine types enter the main ones only. Note that the example MAP shown in Part IV lists one benzodiazepine only. Space can be added for others as required.

7.   Ask the subject to recall the routes of administration in the past month. Enter the numbers from the box above the grid.
       e.g. Route used heroin was by injection; enter 4 in box. Route used benzodiazepine was oral (enter 1) and by injection (enter 4).

Section C: Health Risk Behaviour
Items C1-C5 ask about the frequency of injecting, sharing needles and syringes and having unprotected (non-condom) penetrative sex during the past month.

Item C1   If subject has injected drugs during the past month, use **Card 1** again to assist recall of total number of days injected.

Item C2   Enter the total number of injections across a typical day. If the subject has difficulty recalling this, follow the procedure described in the drug grid and ask for the three most recent days when she/he has injected and enter the number of injections on each of these days.

Item C3   This asks the subject to estimate the total number of times she/he has used a needle and syringe in the past month which has been used by someone else.

Ask the respondent if they have had penetrative sex in the past 30 days.

Item C4-C5 These concern risky sexual behaviour. For the purposes of the MAP we are focussing on penetrative sex (i.e. vaginal or anal) only. Given the nature of these items, it is advisable to state in a preamble that the "next questions are very personal and are about your sexual behaviour. Please remember that we ask these questions to all our clients"

Section D: Health Symptoms
Physical health – items D1a–D1j

This item contains 10 physical health problems in 6 areas (general, injection-related, gastro-intestinal, cardio-vascular, musculo-skeletal, and neurological). Ask the subject to think back over the past month, and show subject Card 2 which lists the frequency of experiencing each symptom (never, rarely, sometimes, often, always). Read out each symptom to the subject and tick the box to indicate frequency of experiencing it in the past month.

Card 2

Never

Rarely

Sometimes

Often

Always

SCORING NOTES

Items on the physical health scale are scored as follows:

Never = 0 ; Rarely = 1; Sometimes = 2; Often = 3; Always = 4

The scale scored by summing the item weights (0-4); the total can therefore range from 0–40.

Psychological health – items D2a–D2j

This section contains 10 items. The first 5 measure symptoms of anxiety; the second five measure depressive ideation. Use Card 2 again to help subject assess frequency of having these feelings and experiences in the past month.

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SCORING NOTES

Items on the psychological health scale are scored in the same way as the physical health scale:

Never = 0 ; Rarely = 1; Sometimes = 2; Often = 3; Always = 4

The scale scored by summing the item weights (0–4); the total can therefore range from 0–40.

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Section E: Personal/social functioning

This final section addresses three areas: relationship problems, employment and illegal activity.

Relationships

Item E1-E6: Concern contacts and conflicts between the subject and her/his partner(s), relatives, children up to 18 years and friends or acquaintances. Contacts means face–to–face interactions or telephone calls. The items refer to conflicts by which we mean serious arguments; verbal abuse and/or violence and not routine differences of opinion. Enter the number of days experiencing conflict with partner(s), relatives and acquaintances in the boxes. If subject does not have any relatives or report having any friends or acquaintances in the past month, move to the next item.

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SCORING NOTES

After recording both the number of days of contact and, of these, the number of conflict days scoring is as follows:

$$\frac{\text{conflict days}}{\text{contact days}} \times 100 = \% \text{ time in contact}$$

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Employment

Item E7: A paid job will include casual work as well as formal contract work. Enter the number of days the subject had one or more jobs in the past month. Days in employment include days *attended* as well as holidays (annual leave and public holidays) and other paid days where the subject was not at work (e.g. training). *Item E8:* Enter any days missed from the subject's job through sickness and unauthorised absence (i.e. unauthorised absence being an absence which has not received prior agreement by the employer). Enter this number, ensuring it does not exceed 30 days. *Item E9:* Concerns days of formal unemployment during the past month. By "unemployed" we mean that the subject was not in paid work or in full-time education. The subject may or may not be receiving state benefit. Include long-term sickness and disability as days of unemployment.

Illegal activities

The final section of the MAP concerns illegal activities undertaken in the past month. This is a sensitive area and the interviewer should re-state that the interview is confidential. A prompt card (**Card 3**) should be used and this lists eight categories of illegal activities.

Card 3

Selling drugs
Fraud/forgery
Theft from a property
Theft from a person
Shoplifting
Theft from a vehicle
Theft of a vehicle
Other theft (specify)

Some users may wish to add additional crime types for certain applications (e.g. driving a car whilst under the influence of alcohol or other drugs; domestic violence; etc.)

Item E10: For each crime ask the subject whether they have done this at any time in the past month and enter a T in the box to indicate "yes", or a Ξ to indicate "no". If "yes" use **Card 1** to assist recall of the total number of days the subject has

committed each offence in the past month. Then ask subject to estimate number of times committed on a typical day. For some subjects certain crimes may be committed only on one occasion. In this situation, simply enter 1 day in the days committed box and 1 in the time on typical day box.

If the subject has difficulty in estimating the typical number of times committed an offence, follow the averaging procedure as described previously and record the number of times committed on the three most recent days.

SCORING NOTES

Items on the crime involvement section (number of days and number of times on a typical day) can be used as individual scores or the product of the two taken as an estimate of the total number of crimes committed.

PART II: FIELD TESTING INFORMATION

In this section, the reliability and validity of the MAP is described from our field testing studies.

Reliability and validity assessments

These assessments were made on a sample of 240 clients of the Maudsley treatment services. Five objectives were set for the development and testing of the instrument: (i) good content and face validity (informed by a review of the relevant literature research summarised above); (ii) brief administration; (iii) simple scoring with clear interpretation; (iv) acceptable reliability; and (v) acceptable concurrent validity (where such assessment was feasible in the study).

Two male and two female researchers and two male and two female clinical nurses acted as interviewers for field testing. Stratified subject recruitment was used to achieve a sample of 160 DUs (80 in community and 80 in-patient) and 80 AUs (40 in community and 40 in-patient) with each interviewer recruiting 30 subjects (20 DUs and 10 AUs).

The community programmes were an opioid substitution and detoxification service for DUs, and an assessment, brief intervention and detoxification service for AUs. The two in-patient programmes were a four-week detoxification and relapse prevention service for DUs and a 10-day assessment and detoxification service for AUs.   A three-day interval was selected as the most practical for the test-retest study. A single two-hour training session inducted the interviewers into the use of the questionnaire. Meetings were held during the course of field testing to discuss and resolve any difficulties encountered with the protocol. Concurrent validity was assessed for the following measures: self-reported drug use, physical and psychological health symptom scales and the measures of relationship conflict. Additional items from relevant instruments for comparative purposes were added to the researcher-administered interview with 95 subjects.

A three-day retest interval was selected as the most practical for the reliability study. The test-retest reliability of the instrument was assessed across the two client groups (DUs and AUs), the two interviewer groups (researchers and clinician nurses), and the two treatment settings (community and in-patient treatment).

The intra-class correlation coefficient (ICC) was used as the index of test-retest reliability (Bartko 1966). ICCs were calculated as ratios of variance components using a fixed-effects analysis of variance. A general case ICC formula, described by Shrout and Fleiss (1979) in which each subject is rated by each of a set of k judges, was adapted for the present design. Three ICCs were computed for each outcome

measure and scale: (i) an overall coefficient corrected for error attributable to intra and inter-subject variability across the test and retest interview; (ii) a coefficient to assess the impact on reliability due to interviewer type (ie. researcher or clinician); and (iii) a coefficient to assess variation in reliability attributable to the four interviewers within each of the two professional groups. F-ratios for the second and third ICCs were computed to assess for significant differences from the overall ICC. It has been suggested that an ICC above 0.75 indicates excellent reliability; 0.65-0.74 good reliability; 0.40-0.60 fair, and below 0.40 poor reliability (Fleiss 1991). Test-retest reliability of categorical measures was assessed with Cohen's Kappa (*5*) (Bishop, Finberg & Holland 1975). A K of 0.40 is suggested to be a minimum acceptable value, with a value of 0.60 or above indicating good to excellent reliability (Landis & Koch 1977).

It was also feasible to assess the concurrent validity of the following measures: self-reported drug use, the physical and psychological health symptom scales and the measures of relationship conflict.

Field testing results

The items in the MAP were found to be highly acceptable to a majority of the clients. There were 23 non-responses (where a client could not recall their behaviour or declined to do so) by 16 clients. The average completion time for the test interview was 11.7 minutes (s.d. = 3.8; 95% confidence interval [CI] = 11.2 - 12.2 minutes; range = 6-27 minutes). Average completion time for the clinician interviews was greater than for interviews by the researchers (12.4 minutes [s.d. = 3.9] versus 11.1 minutes [s.d. = 3.7]; $F_{[1,232]}$ = 5.84; $p < 0.05$).

The personal and demographic characteristics of the sample are shown in Table 1. AUs in in-patient treatment were older than the DUs in this setting and were also older than AUs treated in the community programme ($F_{[3, 235]}$ = 33.10, $p < 0.0001$; Student-Numan-Keuls test, $p < 0.05$). There were few differences in scores on the MAP between male and female clients across all the problem domains.

Table 1: Characteristics of the sample by main problem substance and treatment setting (n = 240)

Demographic characteristic	Primary problem drug users		Primary problem alcohol users	
	Community (n = 80)	In-patient (n = 80)	Community (n = 40)	In-patient (n = 40)
% Female	37.5	37.5	27.5	25.0
Average age (s.d.) †	31.0 (6.7) [a,b]	32.6 (7.8) [c,d]	42.7 (9.8) [a,c]	43.2 (10.3) [b,d]
% non-white UK ethnic group	10.0	11.3	5.0	7.5
% in relationship/past month	63.8	50.0	45.0	50.0
% unemployed in past month	83.8	86.3	85.0	82.5

† Groups sharing the same superscript letter are significantly different via post-hoc Student-Numan-Keuls test ($p < .05$).

Substance use. The substance use profile of the DUs before treatment is shown in Table 2. There were no observed differences in the frequency and intensity of substance use between the in-patient and community treatment groups (non-significant *t* values did not exceed 1.24 for any pairwise comparison; $p > 0.05$).

Table 2: Average number of days of substance use and typical daily amounts reported by problem drug users during past 30 days before intake to treatment (n =160)

Substance use in past 30 days (number of users)	Percent days used (s.d.)	Amount used on typical day (s.d.)
Illicit heroin (n = 136)	77.4 (32.6)	0.4g (0.3)
Prescribed methadone (n = 103)	94.9 (15.8)	48.5mg (26.7)
Non-prescribed methadone (n = 35)	47.3 (38.1)	49.6mg (35.5)
Alcohol (n =90)	57.8 (38.4)	11.4 units (9.9)
Prescribed benzodiazepines (n = 42)		
- Valium (n = 33)	87.0 (26.9)	31.8mg (19.2)
- temazepam (n = 9)	71.9 (42.8)	38.3mg (26.0)
Non-prescribed benzodiazepines (n = 31)		
- valium (n = 19)	51.4 (36.8)	50.3mg (51.9)
- temazepam (n = 12)	61.4 (38.1)	32.5mg (21.2)
Cocaine hydrochloride (n = 13)	33.8 (32.8)	1.2g (1.0)
Cocaine base (crack) (n = 53)	44.9 (41.3)	0.55g (0.4)

In order to assess the validity of self-reported drug use, the 64 DUs who participated in the concurrent validation interview were asked if they had used

heroin, methadone, benzodiazepines or cocaine during the 48-hour period before intake. Results from urine drug screening using homogenous Enzyme Multiplied Immunoassay Tests (EMIT), conducted as part of the treatment intake procedure, could be traced for 56 of these clients (88%) and these results are shown in Table 3.

The cut-off for distinguishing positive from negative samples (test sensitivity) for EMIT assays was set at 300ng/ml for each the four drug types tested. Concordance for each substance was calculated as the percentage of clients who reported use in the test period who tested positive plus the percentage of clients who did not report use and who tested negative, divided by the total number of tests conducted.

Table 3: Validity of self-reported drug use during 48 hours before intake to treatment (n = 56)

Drug type	Concordance (%) (Self-report agrees with test result)	kappa *	Disagreement with urinalysis (%) False negative (self report negative, test result positive)	False positive (self report positive, test result negative)
Heroin	93	.74	2	5
Methadone	84	.65	11	5
Cocaine	93	.76	5	2
Benzodiazepines	91	.79	5	4

* All kappa coefficients significant at $p < .001$

Few problems were encountered by the clients in estimating their frequency and intensity of use and their usual route of administration. Among the DUs, 74% of the heroin users endorsed one of the seven frequency expressions from the response card, while 26% reported some other pattern. Twenty-two percent of crack users reported some other pattern. For the AUs, 15% reported some other pattern for their drinking frequency. Overall, the AUs consumed alcohol on an average of 82% of days (s.d. = 3.5%), with an average of 28.1 units (s.d. = 1.9 units) on a drinking day. Use of the other substances assessed was rare. Just two of these clients reported smoking heroin on 1 and 2 days in the past month. Fifty-seven percent (n = 91) of the DUs reported injecting during the previous month. These clients injected drugs on 80% of these days (s.d. = 30.6) and injected on average 2.7 times on a typical day (s.d. = 2.0). In-patient clients reported a higher level of injecting frequency in the previous month than the community treatment clients (54% of days in the month before intake [s.d. = 47.1) and 37% [s.d. = 43.5] respectively; $t_{[158]} = -2.29$; $p < 0.05$).

Health risk behaviour.   The proportion of injecting DUs who reported sharing needles/syringes in the past month before intake to treatment was 16.5% (n = 15). This proportion is similar to reports from the NTORS sample (Gossop *et al.* 1997a) and falls within the upper range reported by the treatment incident reporting databases in the UK . The average number of sharing occasions for these clients was 5.5 (s.d. = 7.4; range 1-30). For risky sexual behaviour, 44% of the DUs (n = 71) reported having had penetrative sex without using a condom in the 30 days before intake to treatment. These clients had sex when not using a condom with an average of one partner (s.d. = 0.6; range 0 - 4) and had sex on average 9.3 times (s.d = 10.1). The proportion of AUs reporting penetrative sex was 36% (n = 29). These clients had sex when not using a condom on an average with one partner (s.d. = 0.6; range 0 - 3) and had sex on an average of 5.1 times (s.d. = 6.6).

Physical and psychological health. Pre-treatment mean scores from the physical and psychological health scales are shown in Table 4. Scores on the physical health scale were approximately normally distributed (mean = 15.5; s.d. = 7.3; median = 15.0; range = 0-34). The internal reliability of the health scale was satisfactory (alpha = 0.79). Higher means were observed for the AUs (17.1, s.d. = 7.8) than DUs (14.7, s.d. = 6.9)($F_{[1,236]}$ = 6.37, *p* < 0.05). Whilst means for the DUs were similar in the two treatment settings, the AUs in in-patient treatment reported higher scores than either the DUs or the community AU group ($F_{[1,236]}$ = 9.09, *p* < 0.01). Means on the psychological health scales were also approximately normally distributed. The mean score on the anxiety scale for the whole sample was 8.5 (s.d. = 4.8; median = 9.0; range = 0-20) and the mean for the depression scale was 9.3 (s.d. = 5.2; median = 9.0; range = 0-20). Internal reliability of the anxiety and depression scales were good (alpha = 0.88 and 0.86 respectively).

There were no significant group differences on the depression scale. For the anxiety scale, the AUs scored higher than the DUs, with means of 9.9 (s.d. = 4.6) and 7.7 (s.d. = 4.8) respectively ($F_{[1,236]}$ = 10.98, *p* < 0.01).

Table 4: Pre-treatment scores on physical and psychological health and relationship conflict scales by treatment group and setting (n = 240)

Measure	Problem drug users		Problem alcohol users		F ratios (1,236)	
	Community (n = 80)	In-patient (n = 80)	Community (n = 40)	In-patient (n = 40)	Group	Setting
Physical health	14.9 (6.9)	14.4 (6.9)	14.4 (8.1)	19.8 (6.5)	6.37 *	6.50*
Anxiety	7.7 (4.7)	7.8 (5.0)	9.0 (4.6)	10.8 (4.5)	10.98 **	1.97
Depression	8.9 (5.1)	9.4 (5.6)	9.5 (5.0)	9.7 (4.7)	0.40	0.24

The concurrent validity of the physical and psychological health measures was assessed against the number of self-reported days in the month preceding intake to treatment on which the client experienced medical problems and anxiety and depressive thoughts, using items adapted from the ASI (McLellan *et al.* 1992a). Pearson correlations were as follows: health scale and days of medical problems ($r = 0.73$; $p < 0.0001$); anxiety scale and days experienced anxious thoughts ($r = 0.74$; $p < 0.0001$), and depression scale score and days experienced depressive thoughts ($r = 0.69$; $p < 0.0001$).

Relationship conflict. Table 5 shows the percentage of contact time that the clients reported having serious conflict with partners, relatives and friends. On average, clients from in-patient treatment reported more conflict with their partner ($F_{[1,236]} = 4.54$; $p < 0.05$). DUs were also more likely than the AUs to report conflict with their relatives ($F_{[1,236]} = 5.16$; $p < 0.05$). There were no reported differences in conflict with friends. The relationship stressors sub-scales of the Adult Form of the Life Stressors and Social Resources Inventory (LISRES, Moos 1988a) were included in the concurrent validity interview (n = 95).

Each five-item scale from the LISRES records the frequency with which the respondent has experienced specific stressors such as, "Is he or she critical or disapproving of you?" rated on a five-point scale (1 = never to 5 = all the time), with similar items used to assess stressors in two other relationship domains. Pearson correlations between the mean scores on the LISRES scales and the conflict measures (n = 95) were high: partner stressors and partner conflict (PC) ($r = .76$; $p < 0.0001$), relatives stressors and relatives conflict (RC) ($r = .77$; $p < 0.0001$), and friends stressors and friends conflict (FC) ($r = .70$; $p < 0.0001$).

Table 5: Pre–treatment scores on physical and psychological health and relationship conflict scales by treatment group and setting (n = 240)

Measure	Problem drug users		Problem alcohol users		F ratios (1,236)	
	Community (n = 80)	In-patient (n = 80)	Community (n = 40)	In-patient (n = 40)	Group	Setting
Partner conflict	20.7 (36.3)	9.5 (23.9)	18.1 (33.6)	11.1 (30.2)	0.20	5.28 *
Relatives conflict	10.7 (25.5)	12.9 (28.7)	2.8 (9.0)	6.3 (14.5)	1.60 *	1.21
Friends conflict	5.4 (17.3)	10.5 (26.3)	8.0 (23.6)	2.3 (7.4)	0.67	0.09

p< .05

Employment. Substantial employment difficulties were reported. The rate of formal unemployment among the DUs was 85% (n = 136). Only 33 DUs (21%) reported having had paid work. For these clients an average of 13% (s.d. = 29.9) of work days were missed through sickness or other absence. Amongst the AUs, 84%(n = 67) were unemployed before treatment. Fifteen percent (s.d. = 29.6) of working days were reported as being missed due to sickness or unauthorised absence.

Crime. Eighty–nine (56%) of the DUs reported committing a total of 5,630 individual offences during the past month. A summary of the DUs' involvement in selling drugs, shoplifting and "other crime" is shown in Table 6. Reported criminal behaviour during the past month was very rare amongst the AUs. Only one client reported that they had shoplifted on a single day in the month.

Table 6: Crime involvement in past 30 days amongst problem drug users before intake to treatment (n = 160)

Offence type	n (%)	% days committed	Average number of offences	Total number of offences
Selling drugs	24 (15)	42.6 (34.8)	93.0 (127.9)	2,233
Shoplifting	40 (25)	47.8 (40.3)	42.2 (61.4)	1,686
Other crime †	25 (16)	40.9 (37.0)	68.4 (112.9)	1,711

Note: Other crime category composed of the following offence types: theft from a property, theft from a person, and theft from or of a vehicle, and fraud/forgery.

Retest administration and reliability

MAP interviews were readministered to clients after 3.1 days (s.d. = 2.7). Table 6 presents the ICC reliability coefficients for the frequency and intensity of substance use. ICCs are shown for the overall sample and for those clients reporting use of

each substance during the month before treatment. Test-retest reliability for all substances was high, averaging .94 overall and .88 for clients reporting use. For the users of each substance, ICCs for frequency were highest for heroin (0.92). The lowest ICCs, still within a margin reflecting excellent reliability, were for crack cocaine users (percentage of days used = 0.77 and intensity 0.77). ICCs to assess variability in test-retest reliability between and within the two interviewer professional groups were uniformly high (averaging 0.84). F ratios for differences from the overall ICC did not exceed 1.29 for any pairwise comparison ($p > 0.05$). For the usual route of drug administration, test-retest reliability was also excellent. Kappa coefficients were as follows: heroin (0.93); methadone (1.0), benzodiazepines (1.0) and cocaine (1.0). Table 8 shows the ICCs for the health risk, health problems, relationship conflict, employment and crime measures. Coefficients were again uniformly high (averaging 0.81) and F ratios for differences from the overall ICC did not exceed 1.84 for any pairwise comparison ($p > 0.05$).

Table 7: Three day test-retest ICC reliability estimates for substance use (n = 240)

Drug	Percent days used		Intensity on using day	
	Overall ICC (95% CI)	Users ICC (95% CI)	Overall ICC (95% CI)	Users ICC (95% CI)
Heroin	0.96 (0.95-0.97)	0.92 (0.89-0.95)	0.96 (0.95-0.97)	0.95 (0.93-0.97)
Illicit methadone	0.89 (0.86-0.92)	0.91 (0.84-0.96)	0.90 (0.87-0.92)	0.84 (0.72-0.92)
Prescribed methadone	0.97 (0.96-0.98)	0.79 (0.71-0.85)	0.96 (0.94-0.97)	0.92 (0.88-0.94)
Cocaine hydrochloride	0.89 (0.86-0.92)	0.91 (0.70-0.98)	0.90 (0.87-0.92)	0.79 (0.40-0.96)
Cocaine base (crack)	0.96 (0.95-0.97)	0.77 (0.64-0.87)	0.89 (0.86-0.91)	0.77 (0.64-0.87)
Pres. benzodizepines	0.96 (0.95-0.97)	0.92 (0.85-0.96)	0.94 (0.92-0.95)	0.86 (0.75-0.93)
Illicit benzodiazepines	0.91 (0.88-0.93)	0.83 (0.67-0.92)	0.84 (0.80-0.88)	0.78 (0.59-0.90)
Alcohol (drug clients)	0.94 (0.91-0.95)	0.95 (0.93-0.97)	0.95 (0.93-0.96)	0.93 (0.89-0.95)
Alcohol (alcohol clients)	0.95 (0.94-0.96)	0.94 (0.92-0.96)	0.96 (0.95-0.97)	0.95 (0.93-0.97)

Table 8: Three day test–retest ICC reliability estimates (95% CI) for health risk behaviour, health problems, relationship conflict, employment and crime (n = 240)

Measure	Problem drug users	Problem alcohol users
Times "shared" needles	0.97 (0.95-0.98)	-
No. of sexual partners	0.92 (0.90-0.95)	0.96 (0.91-0.98)
Times non-condom sex	0.88 (0.82-0.91)	0.82 (0.64-0.92)
Physical health problems	0.86 (0.82-0.89)	0.89 (0.85-0.93)
Anxiety symptoms	0.88 (0.84-0.91)	0.87 (0.81-0.91)
Depression symptoms	0.86 (0.82-0.89)	0.92 (0.89-0.95)
Partner conflict	0.83 (0.78-0.87)	0.91 (0.89-0.93)
Relatives conflict	0.78 (0.72-0.83)	0.77 (0.69-0.84)
Friends conflict	0.67 (0.59-0.74)	0.77 (0.68-0.83)
% days worked	0.99 (0.99-0.99)	0.99 (0.99-1.0)
No. of work absences	0.98 (0.96-0.99)	0.98 (0.94-0.99)
% days unemployed	0.89 (0.86-0.92)	0.96 (0.94-0.97)
% days drug selling	0.94 (0.93-0.96)	-
% days shoplifting	0.89 (0.87-0.92)	-
% days other crime	0.85 (0.81-0.89)	-

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PART IV: THE MAUDSLEY ADDICTION PROFILE

MAUDSLEY ADDICTION PROFILE (MAP)

SECTION A: MANAGEMENT INFORMATION

Include the study specific information as required (e.g. participant identification, programme codes; interview point)

SECTION B: SUBSTANCE USE

CARD 1

None	1 day only	2 days only	3 days only	1 day a week	2 days a week	3 days a week	4 days a week	5 days a week	6 days a week	Every day	Some other number
0	1	2	3	4	9	13	17	21	26	30	

CARD 2

Oral	Snort/sniff	Smoke/chase	Intravenous	Intramuscular
1	2	3	4	9

a. Enter number of days used in past 30 days [Card 1] – enter "0" for no use;
b. Enter amount used on a typical day in the past 30 days [verbatim]
c. Record route(s) of administration [Card 2]

SUBSTANCE	DAYS USED	AMOUNT USED ON TYPICAL DAY	ROUTE(S)
B1. Alcohol			
B2. Heroin			
B3. Illicit methadone			
B4. Illicit benzodiazepine		Drug:	
B4. Cocaine powder			
B5. Crack cocaine			
B6. Amphetamine			
B7. Cannabis			
B8. Other:			

SECTION C: HEALTH RISK BEHAVIOUR

If <u>no illicit drugs injected</u> in the past 30 days, skip to sexual behaviour questions

C1. <u>Days injected drugs</u> in the past 30 days **[card 1]**   Days

C2. <u>Times injected</u> on a typical day in the past 30 days   Times

C3. <u>Times injected</u> with a needle/syringe already used by someone else   Times

If <u>no</u> penetrative sex in the past 30 days, skip to Section D

C4. Number of people had sex with and not used condom   People

C5. <u>Total number of times</u> had sex with and not used condom   Times

SECTION D: HEALTH SYMPTOMS

CARD 3

Never	Rarely	Sometimes	Often	Always
0	1	2	3	4

D1. How often experienced the following <u>physical health symptoms</u>

	Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Always (4)
a. <u>Poor appetite</u>	☐	☐	☐	☐	☐
b. <u>Tiredness/fatigue</u>	☐	☐	☐	☐	☐
c. <u>Nausea</u> (feeling sick)	☐	☐	☐	☐	☐
d. <u>Stomach pains</u>	☐	☐	☐	☐	☐
e. <u>Difficulty breathing</u>	☐	☐	☐	☐	☐
f. <u>Chest pains</u>	☐	☐	☐	☐	☐
g. <u>Joint/bone pains</u>	☐	☐	☐	☐	☐
h. <u>Muscle pains</u>	☐	☐	☐	☐	☐
i. <u>Numbness/tingling</u>	☐	☐	☐	☐	☐
j. <u>Tremors/shakes</u>	☐	☐	☐	☐	☐

D2. How often experienced the following <u>emotional or psychological symptoms</u> **[card 3]**

	Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Always (4)
a. <u>Feeling tense</u>	☐	☐	☐	☐	☐
b. <u>Suddenly scared for no reason</u>	☐	☐	☐	☐	☐
c. <u>Feeling fearful</u>	☐	☐	☐	☐	☐
d. <u>Nervousness of shakiness inside</u>	☐	☐	☐	☐	☐
e. <u>Spells of terror or panic</u>	☐	☐	☐	☐	☐
f. <u>Feeling hopeless about the future</u>	☐	☐	☐	☐	☐
g. <u>Feelings of worthlessness</u>	☐	☐	☐	☐	☐
h. <u>Feeling no interest in things</u>	☐	☐	☐	☐	☐
i. <u>Feeling lonely</u>	☐	☐	☐	☐	☐
j. <u>Thoughts of ending your life</u>	☐	☐	☐	☐	☐

SECTION E: PERSONAL/SOCIAL FUNCTIONING

If <u>not in a relationship in the past 30 days</u>, skip to relatives questions

E1. <u>Days had contact</u> with partner in the past 30 days **[card 1]**
(ie. say them or talked on the telephone)   Days

E2. <u>Number of these days</u> were there was conflict with partner   Days
(ie. had major arguments)

If <u>not relatives or any contact with relatives in past 30 days</u>, skip to friends questions

E3. <u>Days had contact</u> with relatives in the past 30 days **[card 1]**   Days
(ie. say them or talked on the telephone)

E4. <u>Number of these days</u> were there was conflict with relatives   Days
(ie. had major arguments)

If <u>not friends or any contact with friends in past 30 days</u>, skip to Section E7

E5. <u>Days had contact</u> with friends in the past 30 days **[card 1]**   Days
(ie. say them or talked on the telephone)

E6. <u>Number of these days</u> were there was conflict with friends   Days
(ie. had major arguments)

E7. Number of days of paid work in past 30 days **[card 1]** [ ] Days

E8. Days missed from work because of sickness or unauthorised absence in the past 30 days [ ] Days

E9. Days formally unemployed in the past 30 days [ ] Days

CARD 4

Selling drugs	Fraud/forgery	Shoplifting	Theft from a property	Theft from a vehicle	Theft of a vehicle	Other crimes

E10. Crimes committed in the past 30 days **[card 4 and card 1]**

	Days committed **[card 1]**	Number of times committed on a typical day **[card 2]**
a. Selling drugs		
b. Fraud/forgery		
c. Shoplifting		
d. Theft from a property		
e. Theft from a vehicle		
f. Theft of a vehicle		
Other crimes: ----------------------------- ----------------------------- -----------------------------		

END OF INTERVIEW