

# An unholy alliance: substance abuse and social exclusion among assertive outreach patients

Fakhoury WKH, Priebe S., and PLAO Study Group. An unholy alliance: substance abuse and social exclusion among assertive outreach patients.

**Objective:** To investigate the relationship between social exclusion and outcomes of mentally ill patients with substance abuse problems receiving assertive outreach treatment in London.

**Method:** Analysis was conducted on data on 580 patients from the 'Pan-London Assertive Outreach Study (PLAO)'. Data were collected using clinician-rated scales of alcohol and drug abuse in the last 6 months before baseline. Outcomes – hospitalization and compulsory hospitalization – were assessed over a 9-month follow-up period.

**Results:** The analysis identified a group of patients with substance abuse who suffer from social exclusion and forensic problems ( $n = 77$ , 15.8%), and had poorer outcomes than the rest of the patients in terms of hospitalization (52% vs. 36% respectively) and compulsory (39% vs. 22% respectively) hospitalization.

**Conclusion:** There is a distinct group of patients whose treatment requires social inclusion and forensic expertise. Future research into which model of service is suitable for these patients and in what setting is recommended.

**W. K. H. Fakhoury, S. Priebe, and PLAO Study Group\***

Unit for Social and Community Psychiatry, Barts and The London School of Medicine, Queen Mary, University of London, London, UK

Key words: substance abuse; social isolation; mental disorders; hospitalization; outcomes assessment

Dr Walid K.H. Fakhoury, Academic Unit, Newham Centre for Mental Health, London E13 8SP, UK.  
E-mail: w.fakhoury@qmul.ac.uk

\*See Appendix for members of the PLAO Study Group.

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## Significant outcomes

- There is a surprisingly low prevalence rate of substance abuse in assertive outreach (AO) teams in London.
- There is a distinct group of patients with substance abuse and social exclusion characteristics who could benefit from specific interventions in dual diagnosis and forensic mental health.
- There is a need to re-think models of care and types of interventions provided for dual diagnosis patients receiving AO care.

## Limitations

- The analyses do not establish the causality of the relationship between substance dependency and social exclusion.
- No formal diagnosis concerning substance abuse was established, as information on substance dependency was obtained from scales rated by care coordinators.
- The study was conducted in London and results may not be generalized to the whole of the UK or other national healthcare systems.

## Introduction

Substance abuse by people with serious mental illness, whether of alcohol or drugs, is a major

concern for mental health professionals. Mentally ill patients with substance misuse problems have greater use of in-patient services (1), poor compliance with treatment (2), worse clinical and

social outcomes (3), a greater incidence of violence and suicide (4, 5), and more contact with the criminal justice system (5). In the US, a higher substance misuse rate was found among those with a diagnosis of schizophrenia and bipolar disorders than in the general population (6). There are similarly increased rates of substance misuse in the UK. The Mental Health Policy Implementation guide published in 2000 by the UK Department of health indicated that substance misuse affects around a third to half of people with severe mental health problems (7).

In the UK, recent governmental mental health policy has mandated the development of assertive outreach (AO) teams as an adjunct to services offered by community mental health teams (8). The AO model is based on assertive community treatment, a service delivery model developed in the US that provides comprehensive locally based treatment and highly individualized out-patient services to people with serious mental illness (9). Patients receiving AO care usually have multiple medical and social needs and are difficult to engage with mental health services. Patients on the caseload of these teams often have a substance abuse problem. The aim of AO is to maintain frequent and regular contact with these patients in order to monitor their clinical condition. At the very least, AO can help the patient deal with the practical problems that prevent them from getting treatment; in addition, stable living conditions, symptom management, daytime activity or distraction, and development of a non-abusing peer group form part of a comprehensive approach to harm minimization and treatment (10).

While the number of AO teams has been on the increase, it was not until recently that these teams were evaluated in terms of their organizational, staff and patient characteristics (11–13). Dual diagnosis patients are thought to make up 20–50% of the caseloads of AO teams in the UK (10). Recent evidence from the Pan-London Assertive Outreach Study (PLAO) showed a 6-month prevalence of substance abuse in AO teams of 29% (13). Little is known, however, about the characteristics and prognosis of dual diagnosis patients receiving AO treatment.

### Aims of the study

We conducted analyses on data collected for the PLAO, the first comprehensive evaluation of AO teams in London. The analyses addressed three main questions:

- i) Are there significant associations between alcohol abuse, drug abuse, and patients' sociodemographic, clinical and service use characteristics?
- ii) Can distinct groups of patients be identified based on patients' substance abuse and social exclusion characteristics? And if so,
- iii) How do these groups differ in their outcomes of care at 9-month follow-up?

### Material and methods

#### Sample

The analysis was conducted on data collected on 580 patients who were sampled from 24 mental health services in London that contained distinct AO teams. The caseload for each team was divided into patients who had been with the team for 3 months or longer – referred to as 'established' patients – and those who had joined the caseload in the previous 3 months – referred to as 'new' patients. The sample consisted of all new patients and a random 0.37 fraction of established patients from each team. There was an over-sampling of newly accepted patients because the initial stage of AO provision may be a 'stabilization' period with a relatively poor outcome (14). Over-sampling of newly accepted patients was carried out to prevent differences between teams being confounded by the length of time patients had been in AO, with exclusively established patients in long-running teams.

The mean age of patients in the sampled AO teams was 36.7 (SD = 11.7). Patients were most frequently male (64.5%), single (72.1%), unemployed (89%), and living alone (52%). A majority had a diagnosis of schizophrenia (73.6%), and had been hospitalized in the last 2 years (71.9%), 55.7% compulsorily. The characteristics of the patients have been reported in more detail elsewhere (13).

#### Data collection

A case note review was conducted by the researchers on the study to obtain data on the patients' sociodemographic characteristics (age, gender, ethnicity, marital status, employment, living situation, type of housing, history of street homelessness over the last 2 years), clinical characteristics (diagnosis, acts of parasuicide in the last 2 years, acts of physical violence in the last 2 years, arrests in the last 2 years, compulsory hospitalization under the Mental Health Act 1983 in the last 2 years), and service use characteristics (number of

hospitalizations in the last 2 years, contact with mental health services in the past 3 months). Information about hospitalization and compulsory hospital admission in the study period was collected after 9 months. In the UK, the grounds for applying compulsory hospital admission, as stated in the Mental Health Act, are that the person is suffering from mental disorder of a nature or degree which warrants the detention of the patient in a hospital for assessment (or for assessment followed by medical treatment) for at least a limited period; and that he/she ought to be detained in the interests of his/her own health or safety or with a view to the protection of other persons.

The reliability of the case note review was checked through triangulation with other data sources, such as information from clinicians at the piloting stage, and all data were checked and cleaned (13). Data were collected between July 2001 and July 2002.

#### Ratings of substance abuse

The categorization of dual diagnosis was based on information collected from staff using clinician-rated scales (CRSs). This was because many of the patient group would have declined to complete self-rated scales. No formal dual diagnosis was undertaken.

Two scales assessing substance abuse were completed at baseline. These were the clinician-rated alcohol use scale and the clinician-rated drug use scale developed by Drake et al. (15). These scales were constructed to assist clinical case managers in assessing substance use by people with severe mental illness. They were developed to help in organizing such multi-modal data as medical examinations, self-reports, or reports from significant others into ratings of severity of addiction. These scales have been widely used by socio-medical researchers, and are valid and reliable (15, 16). The clinician-rated alcohol use scale was found to have a specificity of 100% for either current or lifetime use of alcohol, and a sensitivity ranging from 84.2% for current use to 94.7% for lifetime use of alcohol, in a sample of out-patients with DSM-III-R schizophrenia (16). Both alcohol and drug use scales are based on the criteria of DSM-III-R. The scales are scored on a 5-point scale. Ratings of 1 and 2 describe none and mild problematic substance abuse (rating 1: abstinence, rating 2: use without impairment). A score of 3 is given to individuals with moderate substance use problems and corresponds to DSM-III-R alcohol/drug abuse. Ratings of 4 and 5 indicate severe and extremely severe substance use, respectively, and

correspond to DSM-III-R alcohol/drug dependence. Time periods that can be assessed by the scales vary from several months to an individual's entire life.

For the drug CRS, the drug causing the most functional problems was rated. A separate question was asked about drugs used. The rating period for both CRS scales was the preceding 6 months. In most cases, care coordinators holding responsibility for care programming filled the scales. Where the care coordinator was not available during the rating period (or when a team did not hold responsibility under the Care Programme Approach), the scales were completed by the clinician with the most frequent contact with the patient. Both scales were completed within 1 month of the census dates.

#### Data analysis

Throughout the analysis, patients who abused (rating 3), or were dependent on, alcohol or drugs (rating 4 or 5) were grouped together and referred to as patients with alcohol or drug abuse. These patients were compared with those who did not use (rating 1) or used alcohol or drug without impairment (rating 2). Associations between alcohol abuse, drug abuse, and the patient sociodemographic, clinical, and service use characteristics were tested for statistical significance using *t*-tests for continuous data, and Pearson's chi-square tests for categorical data. Predictors of alcohol abuse, and of drug abuse, were identified using forward stepwise multiple logistic regression (the probability for variable entry to the model was set at 0.05 and the probability for removal was at 0.10). Two models were derived, one for each dependent variable. The independent variables regressed against the dependent variables were those significantly associated with them at the bivariate level of analysis. In order to establish whether patients could be classified into clusters, the variables alcohol abuse, drug abuse, and four factors of social exclusion (street homelessness over the last 2 years; arrests in the last 2 years; physical violence in last 2 years; living alone) were subjected to hierarchical cluster analysis of binary data. The clustering was run with average linkage (between groups). Given that all variables were symmetrical binary, the 'simple matching' procedure was chosen for clustering. The number of clusters was determined by viewing the resulting dendrogram, and comparisons between clusters were conducted on all variables subjected to the hierarchical clustering analysis, and on outcomes of treatment at follow-up. The analysis used the STATISTICAL PACKAGE FOR

SOCIAL SCIENCES (SPSS 11.0; SPSS Inc., Chicago, IL, USA).

## Results

Data collected from the teams showed that 16% ( $n = 85$ ) of all sampled patients had alcohol abuse, and 19% (103) had drug abuse. This resulted in a 6-month prevalence of substance abuse of 29%. Of those who abused drugs, cannabis was reported by 84.8%, cocaine/crack 38.4%, stimulants 10.1%, opiates 7.1%, ecstasy 5.1%, hallucinogens 4%, and solvents/gazes 3%.

Table 1 shows the associations between alcohol abuse, drug abuse, and patient sociodemographic, clinical and service use characteristics. The bivariate analysis indicated that those with alcohol abuse and those with drug abuse were significantly more likely than non-abusers to be male, to be 'newly' on the teams' caseload, to have been physically violent in the last 2 years, to have been arrested in the last 2 years, and to have had a greater number of in-patient hospitalization episodes [for alcohol abuse: mean = 1.5 (SD = 1.7) vs. 1.3 (1.2),  $P < 0.05$ ; for drug abuse: mean = 1.8 (SD = 1.7) vs. 1.3 (1.2),  $P < 0.001$ ]. Patients with alcohol abuse were significantly more likely to have been White, to have been living alone, and to have had contact with other mental health services in the last 3 months. Those with drug abuse were significantly more likely to have been younger [mean age = 31.5 (SD = 8.6) vs. 37.7 (12.1),  $P < 0.001$ ], to have had a history of street homelessness over the last 2 years, to have been younger when first admitted to hospital [mean age = 23.9 (SD = 9.0) vs. 27.5 (9.2),  $P < 0.001$ ], and to have been compulsorily hospitalized in the last 2 years.

Table 1 also shows that there were no significant differences in hospitalization in the last 2 years between those who abused alcohol and those who did not. However, patients with drug abuse were significantly more likely than those without to have been compulsorily admitted to hospital in the last 2 years from baseline, and significantly more likely to have been both hospitalized and compulsorily hospitalized during the follow-up period.

Table 2 shows the predictors of alcohol abuse and those of drug abuse. The analysis using logistic regression showed six variables to predict alcohol abuse. Being 'new' on the AO teams caseload, being White, living alone, having been arrested in the last 2 years, having been physically violent in the last 2 years, and being in contact with other mental health services in the past 3 months all independently predicted alcohol abuse. As for the predictors of drug abuse, there were three: being

younger, having been arrested in the last 2 years and having a history of street homelessness over the last 2 years. The variable 'having been arrested in the last 2 years' was a common predictor of alcohol and drug abuse. It was the strongest predictor of drug abuse (OR = 3.89, 95% CI = 2.27, 6.68), and the second strongest predictor of alcohol abuse (OR = 2.14, 95% CI = 1.10, 4.17). The strongest predictor of alcohol abuse was, however, living alone (OR = 2.30, 95% CI = 1.33, 3.99).

Table 3 lists the variables subjected to clustering, their frequency, for both the total sample and for the two clusters identified from the dendrogram. Hierarchical cluster analyses indicated the presence of two distinct clusters. Cluster 1 had 410 cases (84.2%) while cluster 2 had 77 cases (15.8%). All patients in cluster 2 had a history of arrests in the last 2 years and the majority were physically violent in the last 2 years (92.2%). Patients in cluster 2 (10.4%) were significantly more likely than those in cluster 1 to (2.9%) have had a history of street homelessness over the last 2 years, to have abused alcohol (35.1% vs. 12.2%), and to have abused drug (40.3% vs. 14.1%).

Table 4 shows the difference in outcomes of treatment after the 9-month follow-up between patients in the two clusters. Patients in cluster 2 were significantly more likely to have been hospitalized (52%), and to have been compulsorily admitted to hospital (39%), during the 9-month follow-up period, than those in cluster 1 (36% and 22% respectively). It is important to note that of those who were hospitalized in the last 9 months and who were in cluster 2, 13 abused alcohol, and 14 abused drug. Of those who were admitted compulsorily to hospital in the last 9 months and who were in cluster 2, 11 abused alcohol and 11 abused drug.

## Discussion

This Pan-London survey of AO teams showed a 6-month prevalence rate of substance abuse among patients on these teams of 29%. Although this rate is comparable with prevalence rates of substance abuse in clinical samples (1, 17), it is surprisingly low for AO teams, especially when compared with a 44% prevalence rate of dual diagnosis patients in community mental health teams (18). In the UK, community mental health teams, on the one hand, are multidisciplinary teams that were established to provide support and advice to mentally ill patients and their caregivers and to assist patients and caregivers in accessing such support. AO teams, on the other

Table 1. Associations between alcohol abuse, drug abuse, and patient sociodemographic, clinical and service use characteristics

	Alcohol abuse, % (n)		P-value	Drug abuse, % (n)		P-value
	Yes	No		Yes	No	
New client						
Yes	40.0 (34)	28.8 (126)	0.041	40.8 (42)	28.1 (117)	0.013
No	60.0 (51)	71.2 (311)		59.2 (61)	71.9 (299)	
Gender						
Male	75.3 (64)	61.8 (270)	0.018	78.6 (81)	60.6 (252)	0.001
Female	24.7 (21)	38.2 (167)		21.4 (22)	39.4 (164)	
Ethnicity						
White	58.8 (50)	42.3 (182)	0.005	43.1 (44)	44.6 (183)	0.785
Non-White	41.2 (35)	57.7 (248)		56.9 (58)	55.4 (227)	
Employment						
Paid employment (full-time/part-time)	1.2 (1)	13.5 (58)	0.001	5.0 (5)	13.2 (54)	0.020
Student/no-paid employment	98.8 (82)	86.5 (371)		95.0 (96)	86.8 (354)	
Marital status						
Married (co-habitating)	14.0 (6)	86.0 (37)	0.667	20.9 (9)	79.1 (34)	0.863
Not married	16.5 (77)	83.5 (390)		19.8 (92)	80.2 (372)	
Living alone						
Yes	67.9 (57)	47.1 (203)	<0.0001	59.4 (60)	48.8 (200)	0.056
No	32.1 (27)	52.9 (228)		40.6 (41)	51.2 (210)	
History of homelessness in last 2 years						
Yes	7.1 (6)	3.9 (17)	0.203	10.8 (11)	2.9 (12)	0.001
No	92.9 (79)	96.1 (414)		89.2 (91)	97.1 (399)	
Clinical diagnosis						
Schizophrenia	67.9 (57)	74.4 (320)	0.213	77.7 (80)	72.3 (295)	0.271
Other	32.1 (27)	25.6 (110)		22.3 (23)	27.7 (113)	
Acts of parasuicide in last 2 years						
Yes	14.6 (12)	8.9 (38)	0.113	9.8 (10)	9.5 (38)	0.914
No	85.4 (70)	91.1 (387)		90.2 (92)	90.5 (364)	
Physical violence in last 2 years						
Yes	52.4 (44)	31.9 (137)	<0.0001	54.4 (56)	31.2 (127)	<0.0001
No	47.6 (40)	68.1 (292)		45.6 (47)	68.8 (280)	
History of arrests in last 2 years						
Yes	37.0 (30)	16.8 (71)	<0.0001	45.9 (45)	14.4 (58)	<0.0001
No	63.0 (51)	83.2 (352)		54.1 (53)	85.6 (344)	
Contact with other mental health services						
Yes	45.0 (36)	32.8 (134)	0.037	33.3 (32)	33.9 (132)	0.911
No	55.0 (44)	67.2 (274)		66.7 (64)	66.1 (257)	
Hospitalized in the last 2 years						
Yes	75.0 (63)	71.9 (312)	0.559	85.4 (88)	70.2 (290)	0.002
No	25.0 (21)	28.1 (122)		14.6 (15)	29.8 (123)	
Compulsorily hospitalized in the last 2 years						
Yes	53.0 (44)	55.0 (233)	0.745	68.6 (70)	52.1 (210)	0.003
No	47.0 (39)	45.0 (191)		31.4 (32)	47.9 (193)	
Hospitalized in the follow-up period						
Yes	35.8 (24)	38.2 (141)	0.711	48.8 (42)	36.9 (129)	0.041
No	64.2 (43)	61.8 (228)		51.2 (44)	63.1 (221)	
Compulsorily hospitalized in the follow-up period						
Yes	23.9 (16)	24.1 (90)	0.965	33.7 (29)	23.2 (82)	0.043
No	76.1 (51)	75.9 (283)		66.3 (57)	76.8 (272)	

hand, were essentially developed to deliver specialist community care services to difficult-to-engage mentally ill patients, including those with substance abuse problems. A low prevalence rate of substance abuse in AO teams may be due to the fact that fewer patients are referred to these teams or that, once referred, fewer of them are accepted by these teams. Future research could address this.

As for the profile of mentally ill patients with substance abuse, the data from PLAO showed

that they were more likely to have been male, White, unemployed, living alone, and to have a history of homelessness, physical violence and arrests. These findings are similar to those reported in the literature (1, 5, 17, 19, 20). Alcohol and cannabis were found to be the most widely used substances among the mentally ill patients, a finding also in agreement with the literature (17). What our analyses have added to the literature, however, is the identification of a distinct group of patients who might benefit from specific

Table 2. Prediction using multiple regression of alcohol abuse, and of drug abuse

	Unstandardized regression coefficient (SE)	Odds ratio (95% CI)	P-value	Model $\chi^2$ (d.f., P value)	% Cases correctly classified
<i>Alcohol abuse</i>					
New vs. established patient	+0.57 (0.28)	1.76 (1.01, 3.08)	0.046	44.37 (6, <0.0001)	84.1
White vs. non-White	+0.78 (0.28)	2.14 (1.24, 3.68)	0.006		
Living alone vs. living with others	+0.83 (0.28)	2.30 (1.33, 3.99)	0.003		
Arrests in the last 2 years (yes vs. no)	+0.76 (0.34)	2.14 (1.10, 4.17)	0.025		
Contact with other mental health services (yes vs. no)	+0.60 (0.27)	1.83 (1.06, 3.13)	0.029		
Physical violence in the last 2 years (yes vs. no)	+0.63 (0.31)	1.87 (1.02, 3.44)	0.044		
<i>Drug abuse</i>					
Age of patient (years)	-0.05 (0.01)	0.95 (0.92, 0.97)	<0.0001	60.41 (3, <0.0001)	80.2
Arrests in the last 2 years (yes vs. no)	+1.36 (0.28)	3.89 (2.27, 6.68)	<0.0001		
History of homelessness over the last 2 years (yes vs. no)	+1.33 (0.52)	3.79 (1.37, 10.49)	0.010		

Table 3. Variables in the clusters, and description of the two clusters identified from between-groups linkage hierarchical cluster analysis

Variables	Cluster 1, % (n)	Cluster 2, % (n)	P-value
Living alone			
Yes	51.5 (211)	45.5 (35)	0.333
No	48.5 (199)	54.5 (42)	
History of homelessness over the last 2 years			
Yes	2.9 (12)	10.4 (8)	0.002
No	97.1 (398)	89.6 (69)	
Arrests in the last 2 years			
Yes	3.9 (16)	100 (77)	-
No	96.1 (394)	0	
Physical violence in the last 2 years			
Yes	24.1 (99)	92.2 (71)	<0.0001
No	75.9 (311)	7.8 (6)	
Alcohol abuse			
Yes	12.2 (50)	35.1 (27)	<0.0001
No	87.8 (360)	64.9 (50)	
Drug abuse			
Yes	14.1 (58)	40.3 (31)	<0.0001
No	85.9 (352)	59.7 (46)	

Table 4. Difference in outcomes after the 9-month follow-up between patients in the two clusters identified from hierarchical cluster analysis

	Cluster 1, % (n)	Cluster 2, % (n)	P-value
Hospitalization			
Yes	36.0 (126)	52.5 (32)	0.015
No	64.0 (224)	47.5 (29)	
Compulsory hospitalization			
Yes	22.0 (78)	39.3 (24)	0.004
No	78.0 (276)	60.7 (37)	

Chi-square test for categorical data was used to assess statistical difference between groups.

interventions in dual diagnosis and forensic mental health. In this group, all patients were dependent on alcohol and drugs and had a history of arrests in the last 2 years and the overwhelming majority had over the same period been physically violent and experienced street homelessness. They also had poorer outcomes than the rest in terms of hospitalization and compulsory hospitalization

during the follow-up period. Our data may indicate a need to increase the skills of AO staff in dual diagnosis and forensic mental health to provide a focused and more integrated approach to treatment for this group of patients. Treatment in this case would still be provided by outreach teams catering for those both with and without substance abuse problems. There is another view suggesting that it might be more beneficial for dual diagnosis patients to be treated in smaller specialist teams dedicated solely to dual diagnosis patients. These teams would have staff skills in both dual diagnosis and forensic mental health. This second model of care would be appropriate in urban areas where levels of dual diagnosis are higher than average.

Some argue, however, that a reasonable alternative to specialized AO teams could be the re-integration of the staff and the specialist competency found in AO teams into the community mental health teams, so that patients stay with the same team for long time and get an integrated treatment from one source. In the US, research on approaches to reducing system fragmentation for dual diagnosis patients has focused either on global effort to integrate numerous agencies in a community or on highly focused efforts to develop specialized teams. However, there is currently a new opinion advocating the need to foster constructive relationships between selected pairs or subsets of agencies dealing with dual diagnosis patients (21). It is important to note that US research favours the integrated team approach to treatment for dual diagnosis patients (21, 22). There is evidence from Germany that integrated treatment that addresses both psychosis and substance misuse works for patients with first-episode psychosis (23). In the UK, however, AO treatment is still in the process of evolving, and would benefit from discussion about what models of treatment should be designed for dual diagnosis patients, taking into account the US

experience but also the cross-cultural limitations of adopting US models, or indeed other international models, of outreach treatment. In addition, while clinical outcomes of the hardcore group of patients might be difficult to improve – as shown in our study – AO teams might have more success in improving their social conditions (employment, housing, social support, etc.). Hence, one could argue that targeted interventions in these areas should be the focus of these teams' service provision for this group of patients – after all there is evidence showing a link between the wider social environment, including socioeconomic status (24), and mental health service use (25).

The Social Exclusion Unit at the Office of the Deputy Prime Minister in the UK emphasized that creating sustainable, inclusive communities is about everyone having a stake, indicating that people with mental health problems have much to offer, and that if they are able to fulfil their potential, the impact of mental illness on individuals, their families and society can be significantly reduced (26). To be able to achieve this, services, social and health, will have to communicate effectively and coordinate their services efficiently, to be able to meet the needs of people with complex needs, and who are socially excluded, given the limited financial resources under which both mental health trusts and social services departments function. This applies to all services, including AO teams.

Finally, the analyses must be viewed in terms of the limitations of the PLA0 study itself. The teams were taken from across London and results cannot be generalized directly to the whole of the UK (whether urban or non-urban areas) or to other international health care systems. The analyses do not allow establishing the direction of the association (cause and effect) between substance abuse and factors of social exclusion investigated in the paper. Finally, no formal research diagnosis concerning substance abuse was established, as information on this was obtained from scales rated by the care coordinators (or clinicians).

The analyses presented in this paper have, however, highlighted a number of important issues relating to outreach treatment interventions for mentally ill patients with alcohol or drug abuse. The findings may encourage the search for improvements in the help and treatment for dual diagnosis patients. Future research into which model of service and in what setting (e.g. large teams with better trained staff vs. small specialized teams; more focus on social vs. more focus on clinical conditions) is recommended.

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### Appendix

Tom Burns, Christine Wright, Peter James, Adele Greaves, Christine Benfell, Nan Greenwood (St George's Hospital Medical School, London); Paul Bebbington, Sonia Johnson, Joanne Billings (University College London and Camden and Islington Mental Health and Social Care Trust); Stefan Priebe, Walid Fakhoury, Joanna Watts (Unit for Social and Community Psychiatry, Barts' and The London School of Medicine); Matt Muijen, Ian Ryrie, Rebecca Walwyn (Sainsbury Centre for Mental Health); Ian White (Medical Research Council Biostatistics Unit, Cambridge).