CRITICAL TIME INTERVENTION FOR SEVERELY MENTALLY ILL RELEASED PRISONERS: A RANDOMISED CONTROL TRIAL (CrISP)

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Important

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SCIENTIFIC SUMMARY

BACKGROUND: The prevalence of mental illness among prisoners is significantly higher than the general population; a series of national surveys undertaken in Great Britain reported community prevalence of functional psychosis as 4.5 per thousand; for adult prisoners it was 52 per thousand.

In England, mental health in-reach services deliver specialist mental healthcare to prisoner-patients. However, their effectiveness of has been criticised due to inadequate identification and treatment of severe mental illness during early custody and flawed discharge planning upon release.

For prisoners with severe mental illness, transition from institution to community is a vulnerable period, associated with increased risk of relapse, reoffending and suicide. Managing transitions for individuals with complex needs is challenging. Robust discharge planning to seamlessly transfer care to holistic community services is vital; finding suitable accommodation, work and financial support and family contact are all important for success.

Developing a model for integrating health and social services for those leaving institutional care has been challenging in the United Kingdom since the 1970s when large psychiatric hospitals closed and care transferred to community settings. Initially, the Case Management (CM) model was adopted, where care was assigned to a case manager who organised the meeting of needs by multiple providers. A systematic review of CM concluded that it was effective in helping clients maintain contact with services but involved higher rates of hospitalisation. No significant differences between CM and Treatment as Usual (TAU; "control") clients on measures of social functioning or quality of life were observed.

A variant of CM, Assertive Community Treatment (ACT), adopted a multi-disciplinary team approach, with small caseloads of clients. The model has been extensively evaluated, with good evidence for its efficacy.

Critical Time Intervention (CTI; "the intervention") was developed in the United States in the 1990s, based on the main principles of CM and ACT. It is a structured, time-limited, intervention, with the overarching aim of long-term engagement with community services. It was originally designed for the transition from psychiatric hospital to community for homeless people, proving superior to usual treatment in preventing homelessness.

In a pilot study by the current authors, the original intervention model was adapted for implementation with a male prison population. Case managers proactively engaged with prisoners with severe mental illness before release, agreeing a discharge plan, supporting the participant '*through the gate'* and liaising with community providers to ensure suitable support from services to meet an individual's needs. The pilot demonstrated that the adapted model was both feasible to implement and acceptable to clients.

In this study, we conducted a full randomised controlled trial of the intervention involving the delivery of the intervention by trained case managers who undertook assessment and needs identification of clients pre-release; brokered contact with suitable community services; and remained in contact with clients for up to six weeks post-release.

OBJECTIVES: To establish whether the intervention is effective in:
(1) improving engagement with health and social care services;
(2) reducing mental health hospital admissions;
(3) reducing re-offending; and
(4) increasing community tenure through reducing time in prison

for released adult male prisoners with severe mental illness.

Secondary objectives:
(5) establish the cost-effectiveness of the intervention for this population;
(6) develop service manuals and training materials to support implementation of the intervention with criminal justice agencies, the National Health service (NHS) and relevant third sector organisations.; and
(7) facilitate and promote active service user, criminal justice, third sector and health staff participation in the research work programme, thus encouraging greater engagement between the academic community of researchers, the practice community of health and justice staff, and users of criminal justice, community based healthcare and third sector services.

METHOD: A multi-centre, parallel group randomised controlled trial in which the intervention was compared to controls. The original 3-stage intervention model was adapted to become a 4-stage intervention to include an intensive Phase 1: 'Pre-release' when detailed needs assessment is undertaken, a release plan formulated, and most of the case manager's ground work to establish links to community services takes place. There then followed: Phase 2 - 'Transition to community'; Phase 3 - 'Try-out'; and Phase 4 - 'Transfer of care'.

Participants were recruited from 8 prisons in England. Inclusion criteria:
(1) Severely mentally ill (SMI) clients of prison in-reach mental health services;
(2) Male; and
(3) Discharge from prison to occur within 6 months of initial recruitment to the study.

Participants were excluded if they:
- Did not have SMI;
- Were to be released outside of the agreed geographical discharge area;
- Posed security/safety issues that comprised safety ;
- Were unable to give informed consent; and/or
- Had participated in the trial during an earlier period in custody.

Severe mental illness was defined as major depressive disorder, hypomania, bipolar disorder, and/or any form of psychosis including schizophrenia, schizo-affective disorder and any other non-affective, non-organic psychosis.

Prisoners on the prison in-reach caseload meeting the inclusion criteria were approached and informed consent sought for inclusion. Individual randomisation in a ratio of 1 to 1 to intervention or control was carried out by the King's Clinical Trials Unit, using an online system. Individual participants were allocated using block randomisation, with randomly varying block sizes of two and four, stratified by prison. Data were entered onto the online InferMed MACRO data entry system, hosted at the Clinical Trials Unit.

Participants randomised to the intervention were assigned to a member of the prison in-reach team designated as case manager who undertook the intervention; the case manager worked only with the intervention group throughout the life of the trial to avoid contamination of the control group.

The intervention started up to six months prior to each prisoner's known release date and continued for six weeks after. For suitable prisoners on remand, the intervention began immediately following recruitment, due to their unpredictable length of stay in custody. During Phase 1, prisoners in the intervention arm of the trial underwent a detailed needs assessment by their case manager to identify the services required both whilst in prison and upon discharge to the community. In addition, registration with a local general practitioner was arranged; housing needs assessed; key source of income identified; and family and peer group networks were contacted, as appropriate. The case manager arranged appointments with community service providers to ensure receipt of services or income were in place as soon after release as possible and accompanied the prisoner to those appointments to aid engagement.

As the intervention progressed, the case manager reviewed and adjusted service provision in real-time to ensure that the 'best fit' of provider to participant need was in place. As the person settled in the community, gathered confidence living independently and was more able to advocate for themselves to address changing need, the case manager withdrew gradually. At the end of the intervention period the case manager, participant and service providers agreed longer term goals, strategies to achieve those goals and the person's care was signed over fully to community services.

Participants randomised to the control group were cared for by other members of the prison in-reach health team and underwent the prison's usual discharge planning process and follow-up care.

In addition to formally establishing a diagnosis of severe mental illness, all participants underwent a baseline assessment for evidence of personality disorder, lifetime use of alcohol and/or drugs and a comprehensive summary of the participant's socio-demographic details and service receipt was obtained.

The primary outcome measure was the proportion of participants still engaged with their Community Mental Health Team (CMHT; "team") six weeks after release. Secondary outcomes included contact with mental health services at six and 12 months. The cost of intervention *vs.* control was calculated using measures of service use over time. We intended to establish reconviction rates but, due to the externally created delays in the study, these data will be collected and analysed after the report submission.

A subset of 14 prisoners (eight receiving the intervention and six control); three in-reach case managers delivering the intervention; and five other professionals involved in supporting participants took part in a complementary qualitative study of their experiences.

Public and Patient Involvement

People with previous contact with criminal justice and mental health services were involved in study design and methods development; were steering committee members; and formed, alongside professionals, the working group which developed the intervention manual and training resources.

RESULTS: Eight prisons participated. One hundred and fifty male prisoners meeting the study criteria consented to take part; 72 were randomised to the intervention, 78 to control. Seventeen participants in the intervention and control arms of the trial were lost to follow-up at the six week stage. A further eight intervention and10 control participants were lost to follow-up at six months; a further six intervention and seven control at 12 months. Of the remaining participants, 53% of the intervention group were in contact with their team at six weeks compared to 27% of the control group [p = 0.012; confidence interval (CI) 0.13-0.78]. At six months follow up, intervention participants showed a continued increase in engagement with teams compared to the control group [p = 0.029; confidence interval (CI) 0.12-0.89]; there were no significant differences at 12 months follow up for the primary outcome.

In the six weeks after release the intervention group made more use of care co-coordinators and psychiatrists than the control group. Psychiatrist and care co-ordinator costs were around twice as much for the intervention group (£63.01) compared to the control group (£33.80), use of these two professional groups remained higher for the intervention group at all follow up points. The overall average contact (excluding in-patient services) was higher for the intervention group. Cost-effectiveness analysis indicated an extra cost of £15,426 would be incurred for every extra person engaged at 1 year after release. .This, coupled with an association between high service use costs in the intervention arm (including the cost of the intervention) provides tentative evidence of increased service use by the intervention group. However limitation with the cost data, e.g. a short time horizon and small number of service use categories collected mean we make only tentative economic conclusions.

Qualitative interviews with participants identified five main themes: uncertainty; support; accommodation; mental health and medication and stigma. All participants commented on uncertainty about post-release plans and experienced increasing levels of stress and anxiety. Participants' reported their reliance on others for practical help, particularly in terms of accommodation and financial support. Financial reliance on families reinforced their perceptions of being seen as '*other*' and deviant. Embarrassment at needing financial help increased the risk of re-offending. Both intervention and control participants stated that a lack of suitable accommodation had serious implications for re-offending. Similarly, not having a permanent address restricted access to benefits and services. Both groups of participants reported feeling coerced into taking psychotropic medication and complained about a lack of access to psychological interventions. This, together with stigma, caused some participants not to disclose their mental health problems to professionals.

Members of the intervention group who had experienced previous incarcerations reported less uncertainty and a sense that, on this release, care would be more integrated; this was linked to reduction in stress, anxiety and potential for re-offending. The intervention group also reported better continuity of care and improved access to services attributed, at least in part, to case managers advocating on their behalf. From these participants' perspectives, there was a direct correlation between improved discharge planning, increased levels of support, greater continuity of care provided by case managers and a reduction in the likelihood of re-offending.

The qualitative interviews with health and justice professionals identified two main themes: liaison and transition. Professionals reported barriers to effective planning and delivery of services as linked to increasingly limited resources, leading to raised thresholds for access to services and more robust gate-keeping.

Perceptions and experiences of the intervention were positive. However, interviewees raised concerns about the availability of funding to roll out services Supportive relationships, such as those provided by case managers alongside family and friends, were regarded as vital for effective transition. In common with service users, professionals frequently complained about the lack of suitable accommodation, highlighting the increased risk of re-offending and exacerbation of mental illness within this vulnerable group caused by unsuitable housing.

CONCLUSIONS: The intervention was effective in increasing engagement with services at six weeks; this is important as the days and weeks following release are particularly risky in terms of deaths by suicide and drug overdose. Further, the difference between the intervention and control group was maintained at the six, but not 12, month follow up points. Overall, staff and participants interviewed as part of the qualitative arm of the study were positive about the intervention. Analysis in regard to cost showed intervention group had higher levels of service use and costs than the control group.

Limitations: Severe delays out with the research team's control hampered our ability to achieve all our original objectives. Delays were encountered gaining research and governance permissions for the study, even though all required procedures were

rigorously adhered to. During the study, some prisons changed their role leading to delays/end of participant recruitment and the need to find new sites. The delays encountered prevented us from fully examining the intervention's impact on re-offending at all, and use of NHS services longer-term.

Implications for healthcare: The intervention *was* demonstrated as effective at improving initial engagement with mental health services. Consideration needs to be given as to how teams interact with this complex group longer term, including an understanding that additional efforts are likely required to maintain close contact with clients after the initial intense intervention phase ends. Maintaining contact is likely to reduce re-offending, admissions to hospital and use of out of hours healthcare services. Health commissioners, providers and policy makers should consider the role the intervention can play in better meeting the needs of offenders with severe mental illness.

Recommendations for research: Variation in duration of the intervention; might a nine month follow up period like the original study increase the length of engagement. Adaptation and trial of the intervention in other groups with different needs, e.g., women prisoners and older or younger people. Investigation of the utility of the model at other transition points: following arrest and short term custody, at points of transition between different mental health services, e.g., in-patient care to community, adolescent to adult services, etc.

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