Evaluation of the Threshold Assessment Grid as a means of improving access from primary care to mental health services

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Executive Summary

Background

There is little consensus over how severe mental illness is defined by different primary and secondary mental health services. This lack of clarity can lead to inequalities in access to services due to the lack of a reliable and consistent means of prioritising the most severely mentally ill for specialist mental health care.

The Threshold Assessment Grid (TAG) is a one-page 7-tick staff-rated standardised assessment that has been developed to identify those people whose mental health problems are of sufficient severity to need access to secondary mental health services.

Aims and objectives

This study evaluated the implementation and use of the TAG as a means of improving the referral process between primary and secondary adult mental health services. The **aim** was to reduce access inequities between primary care and secondary mental health services by improving in-system access. The main **objective** was to test whether asking GPs to complete the TAG in addition to usual referral practice improved access. Three **hypotheses** were investigated:

1. Using the TAG will significantly improve the agreement between the GP and the adult mental health team on the appropriateness of the referral.
2. Receiving a TAG with a referral letter will make it significantly easier for the mental health team to identify:

   (a) the urgency of the referral and,

   (b) the most appropriate professional to make the initial assessment, and,
3. Time taken to discuss referrals accompanied by a TAG will be less than that spent on those without a TAG.

Secondary objectives were to determine the cost-effectiveness of using the TAG, and to explore the population-level resource implications for services from using the TAG.

Methods

Design

The study was a multi-site multi-method cluster randomised controlled trial (RCT). General Practitioner (GP) practices were randomised, and the unit of analysis was the mental health referral. A cluster RCT of GP practices was more appropriate than a non-cluster RCT of referrals because the intervention

was focused at a group rather than individual level. In addition, clustering by practice avoided contamination between GPs in the control group and those in the intervention group.

Setting

The sites consisted of one complete London Borough (Croydon) comprising eight adult community mental health teams (CMHTs) and three CMHTs in Manchester. The sites were chosen to ensure a nationally representative population including a range of densely and more sparsely populated areas (Croydon) and high deprivation inner-city areas (Manchester).

Participants

The inclusion criteria for the trial were (i) being a GP practice, and (ii) providing care for patients residing within either the London Borough of Croydon or the 3 CMHT catchment areas in Manchester. 101 GP practices were originally assessed for eligibility (Croydon = 66, Manchester = 35), with 1 (Croydon) failing to meet the criterion. All remaining GP practices were approached and given the opportunity to opt out of the trial and written informed consent gained from participating practices. A total of 28 GP practices opted out of the trial (Croydon = 10, Manchester = 18), leaving 72 GP practices to be randomised (Croydon = 55, Manchester = 17).

Procedure

GPs from practices in the **intervention group** were asked to complete and attach a TAG whenever referring to CMHTs, while those in the **control group** were asked to continue with their usual referral practice. CMHTs completed a rating referral form for each referral received (for those with TAG and without) which included: (a) clinical and socio-demographic details about the referred patient; (b) a Likert scale to rate referrals for quality of information to inform decision-making about (i) appropriateness of the referral, (ii) urgency, and (iii) which professional should make the initial assessment: (c) whether a completed TAG was attached to the referral, and if it contributed to team decision-making about the referral, and: d) time taken to discuss referrals. The appropriateness measure (b(i) above) was the primary outcome measure for the trial.

A sample of referral letters (minus the TAG, where included) from both intervention and control group GPs were independently rated by a panel blinded to allocation status. The referrals were assessed using the same scales given to the CMHTs, and provided information about whether referral letters from intervention group GPs provided more salient information than referral letters from control group GPs.

Qualitative and health economic data

The randomised controlled trial was supplemented with qualitative and health economic data.

Semi-structured interviews were conducted with GPs, Community Mental Health Team leaders and Psychiatrists in order to explore views on access between primary and secondary mental health services.

Referral meetings were audio-recorded for each mental health team 'pre' and 'post' intervention to provide a 'snapshot' of the referrals' decision-making process.

Health economic data were also collected (Croydon only) in order to explore the cost-effectiveness of TAG and the population-level resource implications. This was done by exploring (i) referrals to all key services and agencies; (ii) changes in primary care prescribing patterns and contact rates; and (iii) time to initial appointment with the mental health team (to investigate whether the system operates more efficiently).

Analysis

The primary outcome (appropriateness of referral) and two secondary outcomes (ease of rating urgency and identifying the correct professional) were compared at follow up using chi-squared tests and odds ratios with 95% confidence intervals. The secondary outcomes were on a five-point scale converted to binary variables. An intention-to-treat analysis was performed (analysing all those referrals for which data were available according to the trial arm to which the practice had been assigned). In addition those referrals which had been accompanied by the TAG were compared with those that had not, within the intervention arm in order to compare those referrals where the TAG was actively chosen with those where it was not, despite being available. Since practice was the unit of randomisation and referrals from a given practice were potentially correlated, the analyses were repeated using a random effects logistic regression to estimate adjusted odds ratios, with the practices entered as random effects.

Results

Quantitative

The study involved GP practices providing care for 407,808 patients (297,756 in Croydon, 110,052 in Manchester), *i.e.* 0.8% of the population of England. 1,061 referrals were made by participating GPs to CMHTs. The characteristics of the referred patients are shown in Table 1.

Table 1 Socio-demographic & clinical characteristics of referred patients from study GP's to CMHTs at baseline

	Total N=1061	Croydon Control N= 455	Croydon Intervention n= 379	Manchester Control N=89	Manchester Intervention N=138
Gender					
Female n (%) (Missing = 5)	578 (54.7%)	250 (54.9%)	208 (55.5%)	48 (53.9)	72 (53.6)
Age					
Mean (sd) (Missing = 3)	36.23 (12.09)	36.46 (12.21)	36.53 (12.15)	35.27 (11.78)	35.29 (11.76)
1° Clinical Diagnosis n (%)					
Psychosis/Schizoph	93 (9%)	34 (8%)	30 (8%)	11 (12%)	18 (13%)
Anxiety Disorder	173 (16%)	88 (19%)	73 (19%)	4 (5%)	8 (6%)
Depressive Disorder	478 (45%)	210 (46%)	197 (52%)	25 (28%)	46 (33%)
Bipolar Disorder	32 (3%)	12 (3%)	14 (4%)	2 (2%)	4 (3%)
Other	146 (14%)	87 (19%)	48 (13%)	5 (6%)	6 (4%)
Unknown/Missing	139 (13%)	24 (5%)	17 (4%)	42 (47%)	56 (41%)
GP contact rates in 6 mths prior to referral* mean (sd)	—	8.64 (7.1)	9.44(7.14)	—	—

***n=384, annualised rates, Croydon only**

Table 2 shows the primary and two secondary outcomes by trial arm on an intention-to-treat basis. There were no significant differences at P=0.05 between the two trial arms in any outcome. There was weak evidence that rating urgency was easier in the intervention arm (p=0.06).

Table 2 Appropriateness of referral, ease of rating urgency and ease of identifying professional by trial arm

	Control n=541	Intervention n=514	OR (95% CI)	χ^2	p
Appropriate referral	326 (60%)	330 (64%)	1.18 (0.91 to 1.53)	1.74	0.19
Urgency rating easy/very easy	253 (76%)	277 (81%)	1.43 (0.97 to 2.1)	3.54	0.06
Professional identification easy/very easy	292 (87%)	303 (89%)	1.21 (0.74 to 1.98)	0.62	0.43

The TAG was used by 25% (14% Manchester, 28% Croydon) of referrals from intervention group practices. Table 3 compares ratings for intervention group referrals with and without a TAG. No outcome differed between these groups at P=0.05.

Table 3 Appropriateness of referral ease of rating urgency and ease of identifying professional by complier status

	TAG available but not used n=386	TAG available and used n=128	OR (95% CI)	χ^2	p
Appropriate referral	247 (64%)	83 (65%)	1.04 (0.67 to 1.62)	0.03	0.86
Urgency rating easy/very easy	208 (81%)	69 (84%)	1.28 (0.64 to 2.72)	0.51	0.47
Professional identification easy/very easy	226 (87%)	77 (94%)	2.18 (0.80 to 7.41)	2.55	0.11

Logistic analysis controlling for site and practice (included as random effects) showed no significant differences at P=0.05 for any of the comparisons reported in Tables 2 and 3, and the trend toward significance of the ease of rating urgency was no longer observed. However there was weak evidence that identifying a professional was easier for referrals in the experimental arm that were accompanied by a TAG compared to those that were not (adjusted OR 2.69, 95% CI 0.96 to 7.52, p=0.06). The intra-class correlation for appropriateness (among referrals from the same practice) was 0.05.

Qualitative

The TAG was inadequately implemented to allow meaningful evaluation of its impact. Reasons for this were explored qualitatively with GP referrers, CMHT leaders and Consultant Psychiatrists. Two types of implementation block were identified: professional (for both referrer and referred-to team) and organisational.

For GPs, forgetting to use the TAG when making a referral (as so few referrals are made that TAG use had not become routine) was not the only reason that TAG was not completed. GPs suggested that TAG was simplistic and so did not reflect the complexity of dealing with patients with mental health problems. Some GPs expressed concern that the TAG score could be manipulated by other GPs to coerce the CMHT to accept referrals. Other GPs feared that TAG would be used by CMHTs to further restrict referrals.

For CMHT respondents, the view was expressed that GPs were neither willing to complete schedules nor reliable in their completion of TAGs. However, they also reported that TAGs accompanying referrals had not been considered in their referral meetings, so TAG scores had not in fact affected their decision-making.

At the organisational level, the two sites used differing approaches to implementation. In Croydon, the evaluation was called a service development, and directly supported by the mental health trust. In Manchester, the evaluation was labelled as research and so practices were more able to initially refuse to participate in the study and to later opt out of using TAG. This may account for a lower GP practice participation rate and lower use of TAG in Manchester.

Health economic

The cost of the TAG was estimated at £5 per referral. This includes the material costs of the TAG plus staff time spent reading and completing it.

In Croydon there was a 12% reduction in referrals to CMHTs from control group practices but only a 2% reduction from intervention group practices. In Manchester there were opposite trends – a 17% reduction from control group practices but a 16% increase from intervention group practices. Croydon saw a 7% and 17% fall in referrals to counselling and psychology services from control group practices and intervention group practices respectively.

In Croydon, prescriptions for antipsychotic medication and SSRIs fell for the whole sample, with no clear difference between control and intervention practices. GP contact rates were higher for Croydon intervention group patients (11 per year) compared to Croydon control group patients (9 per year), a difference that was statistically significant ($p=0.012$). However, the difference between referrals accompanied by a TAG and those without a TAG was not significant ($p=0.985$).

The only statistically significant differences between the groups in waiting times was for the time between the referral being made and it being received, which was shorter in both sites for the intervention group, and shorted for TAG accompanied referrals compared to referrals without a TAG in Croydon.

Conclusions

This multi-site multi-method study investigated the introduction of a standardised assessment of mental health problem severity into the referral process from primary to secondary care. The use of TAG did not appear to impact on CMHT views about the 'appropriateness' of the referral. The TAG had only modest costs, but cannot be seen to be cost-effective given the outcome on referral appropriateness. Control group practices in both Croydon and Manchester decreased referrals substantially more than intervention group practices. If referrals result in secondary care service contacts, then

service costs for the intervention group would be relatively higher than for the control group practices.

The simplest explanation for the lack of impact of TAG on CMHT views about the 'appropriateness' of the referral is that the intervention was inadequately implemented to allow evaluation. We would argue, however, that the study was methodologically rigorous, and its sampling frame is adequate both in size and socio-demographic representativeness. The main weakness is the 'black-box' assumption embedded in trial methodology, that variation in how an intervention is implemented is undesirable.

The research has two important messages. First, caution should be exercised over the introduction of new processes (*e.g.* referral forms). In this case, the new assessment had been carefully developed over a ten-year period within a research programme to develop a standardised mental health referral form. Four research grants funded a systematic review, Delphi Consultations, expert consensus workshops, and a previous ten-site prospective cohort study. Since most new processes will be less tested before introduction, the likelihood of benefits arising may be even lower.

Second, the qualitative component explained the low use of the TAG by referring GPs. Narratives from both GP referrers and referred-to team leaders and Psychiatrists concentrated on the relationships between the health professionals, and how this influenced the referral process and outcome for both patient and professional. This indicates that, in mental health, the referral forms (*i.e.* the paperwork) are embedded in a rich interpersonal context. Organisation factors were also identified: in this study GPs who referred without TAG still had their referral considered, and CMHTs did not feel they needed the TAG data to make decisions. Future research into improving agreement on referrals will need to take account of these professional and organisational factors, by viewing any process change as only one part of a multi-level intervention to improve communication and mutual understanding across the interface.

Dissemination

Dissemination and communication of study outcomes has been undertaken at both a local and national level. Locally, GP practices have been provided with a two-page summary of the study results and can request further individualised information. Additionally, reports have been produced and presented to mental health services in Croydon and Manchester. Nationally, a number of academic papers are currently in preparation. These papers will be targeted at a variety of journals in order to achieve maximum readership. In addition, the study was presented at the UK Mental Health Research Network Conference 2005 and an abstract has been submitted for an oral presentation at the Society for Academic Primary Care Conference in July 2006.

Recommendations for future research

Future TAG research should be more focussed on its use for fostering discussion between individual referrers and teams about the role of severity in decision-making about referrals. This is likely to involve individual case studies and development of best practice guidelines, rather than large-scale trials of an invariant intervention.

Future research into management of the primary – secondary care interface in mental health will require more explicit and detailed consideration of process issue, including professional and organisational factors. Changing the process of referral is unlikely in itself to improve access.

Randomised controlled trials, especially those which are multi-site and investigating complex interventions, should routinely include multi-method exploration of process issues.

Disclaimer

This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the SDO programme or the Department of Health

Addendum

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene and Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact sdo@southampton.ac.uk