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Improving Access to Psychological Therapies for people with Severe Mental Illness (IAPT-SMI): lessons from the South London and Maudsley psychosis demonstration site.

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Abstract (208 words)

Implementation of evidence-based cognitive behavioural therapy for psychosis (CBTp) remains low in routine services. The United Kingdom Improving Access to Psychological Therapies for people with Severe Mental Illness (IAPT-SMI) initiative aimed to address this issue. The project evaluated whether existing services could improve access to CBTp and demonstrate effectiveness using a systematic approach to therapy provision and outcome monitoring (in a similar way to the Improving Access to Psychological Therapies (IAPT) model for people with anxiety and depression).

We report the clinical outcomes and key learning points from the South London and Maudsley NHS Foundation Trust IAPT-SMI demonstration site for psychosis.

Additional funding enabled increased therapist capacity within existing secondary care community mental health services. Self-reported wellbeing and psychotic symptom outcomes were assessed, alongside service use and social/occupational functioning.

Accepted referrals/year increased by 89% (2011/12: n=106/year; 2012-2015: n=200/year); 90% engaged (attended ≥5 sessions) irrespective of ethnicity, age and gender. The assessment protocol proved feasible, and pre-post outcomes (n=280) showed clinical improvements and reduced service use, with medium effects.

We conclude that, with appropriate service structure, investment allocated specifically for competent therapy provision leads to increased and effective delivery of CBTp. Our framework is replicable in other settings and can inform the wider implementation of psychological therapies for psychosis.

Introduction

Psychosis is a severe mental illness characterised by unusual beliefs (delusions) and experiences (hallucinations and other anomalous perceptions), and changes in cognitive, emotional and social functioning. It is distressing and disabling for sufferers and their families, and exacts high societal cost (Andrew, Knapp, McCrone, Parsonage, & Trachtenberg, 2012). The National Institute for Health and Care Excellence (NICE) guideline for schizophrenia and psychosis recommends that CBTp is offered in conjunction with antipsychotic medication (National Institute for Health and Care Excellence, 2014). However, delivery in routine practice is low (Colling et al., 2017; The Schizophrenia Commission, 2012), partly due to unclear treatment pathways and insufficient therapist capacity (Ince, Haddock, & Tai, 2016), presenting a major implementation challenge. The IAPT-SMI initiative aimed to build on the success of IAPT for people with common mental illness (Clark et al., 2009; Clark, 2018) and flagship service provision (Peters et al., 2015) to improve access to NICE-recommended psychological therapies for people with severe mental illness (SMI) (bipolar affective disorder, personality disorders, psychosis) (Department of Health, 2011). The South London and Maudsley NHS Foundation Trust (SLaM) psychosis demonstration site set out to test whether access to CBTp could be improved and effectiveness demonstrated with: (i) appropriate service structure, (ii) trained staff, and (iii) routine outcome monitoring.

Method

Improving Access to Psychological Therapies for people with Severe Mental Illness (IAPT-SMI)

This initiative aimed to enhance delivery of psychological therapies within existing services using a systematic IAPT approach to therapy provision and evaluation, and provided

additional financial resource for therapy and outcome monitoring. IAPT is an English programme that aims to increase the availability of NICE recommended, evidence-based psychological treatments. Key features of the IAPT model include: training therapists to agreed competence criteria, with close, expert clinical supervision; employing routine outcome monitoring; and offering easy access with a prescribed waiting time. The original IAPT initiative provided treatment for adults with depression and anxiety disorders. This template was used to develop models of care for people with long term conditions, including severe mental illness. Six IAPT-SMI demonstration sites ran from 1/11/12 to 31/3/16. They examined i) to what extent the outcomes of clinical trials could be reproduced within routine services; and ii) how treatment pathways supported the delivery of psychological therapies for these patients. Details of the methods have been reported previously (Jolley et al., 2015), and are outlined below.

Service and Referrals

SLaM covers four London boroughs, with high rates of ethnic diversity, population movement, drug use, socio-economic deprivation, and psychosis incidence. SLaM services were organised within Clinical Academic Groups (CAGs), and the Psychosis CAG had four Care Pathways: Early Intervention (EI), Promoting Recovery (PR), Complex Care, and Acute Inpatient Care. The IAPT-SMI service operated in the EI and PR pathways, alongside existing psychological therapy provision in Early Intervention and the Community Mental Health Teams (CMHTs), and was coordinated by a standalone psychological interventions clinic for patients with psychosis (PICuP) (Peters et al., 2015). The PR pathway served people with established psychotic disorders, and the EI pathway saw people with a first episode of psychosis. Psychological therapists in existing services worked sessionally in IAPT-SMI, together with four therapists funded as part of the demonstration site. The full

therapist complement was ten whole time equivalents. Patients gave written consent for their measures to be used pseudonymously for service evaluation, approved by SLaM's audit and evaluation committee (PSYCHLO-13-18).

IAPT-SMI therapists saw patients with psychosis whose needs could be met within a psychological therapy service (i.e. people who opted in to a talking intervention; could attend fairly reliably; and who did not present with very high levels of risk or chaotic behaviour). There were no other exclusion criteria, and patients were seen with interpreters when required. Therapy was offered flexibly, with a focus on engagement. Offers were carefully framed to avoid invalidating people who located their problems externally, for example, as 'help to manage current difficulties with other people', rather than 'help with paranoia'. Referrals were accepted from primary and secondary care, with a self-referral option. Medical and social care needs were managed in the CMHT or primary care.

Assessment

Referrals were screened by senior clinical psychologists, and accepted referrals were contacted by an assessor who was independent of therapy delivery (graduate psychology assistant) to explain the service. Patients wishing to proceed ('opting in') were offered a 60-90 minute pre-therapy assessment, and then therapists offered a first therapy appointment within three to four weeks. Independent assessments were repeated at three-months, end of therapy, and follow-up (mean 9.5 months, range 5-18m). A sessional measure was completed at every therapy appointment, with the therapist's help if needed.

Therapy

CBTp is an adaptation of CBT for emotional disorders and draws on cognitive models of psychotic symptoms (Johns, Jolley, Keen, & Peters, 2014). It promotes an individualised

formulation of the person's psychosis, and intervenes with the psychological processes that

are maintaining distress and impeding recovery. Therapy is tailored to personal goals, and the

therapeutic relationship is genuinely collaborative and characterised by explicit warmth and

transparency (Brabban, Byrne, Longden, & Morrison, 2017). Therapy was offered to suit the

person's needs, aiming for at least 16 one-hour sessions in line with NICE guidance. Sessions

occurred weekly to fortnightly over six to nine months, usually in the referring team's base or

a central clinic. Therapy drew on a wide range of published manuals (e.g. Meaden, Keen,

Aston, Barton, & Bucci, 2013; Anthony P. Morrison, 2002 [listed in Johns et al., 2014];

Anthony P. Morrison, 2017) and was adherent to the IAPT-SMI CBTp competence

framework (Roth & Pilling, 2013). IAPT-SMI therapists were trained to competence, using

standardised assessments of therapy skills (Fowler, Rollinson, & French, 2011). Training was

usually 12-24 months of post-qualification, postgraduate study (Jolley et al., 2012),

comprising 226 hours of teaching and supervision, 476 hours of clinical work, and 300 hours

of assignment work. Within IAPT-SMI, group clinical supervision was provided weekly to

fortnightly, with additional fortnightly to monthly individual supervision. This equated to

approximately 0.7 supervisor hours per therapist per week for ongoing supervision.

Supervisors were senior clinicians with 10-20 years of experience of training therapists and

of providing CBTp within NHS services and randomised controlled trials.

Measures

IAPT-SMI implemented routine outcome monitoring across the service, including activity

(referrals, waiting times), performance (outcomes, service use), user experience and

satisfaction. The IAPT-SMI outcomes battery comprised the four measures described below,

together with patient experience questionnaires and the *Euroqol group's EQ5D* (The EuroQol

Group, 1990) measure of Quality of Life, both of which are reported separately. We

additionally report outcomes on the self-report *Clinical Outcomes in Routine Evaluation-10 (CORE-10)* (Barkham et al., 2012), which generates a mean total distress score based on ten items, each rated from 0 to 4, ranging from 0 (healthy) to 40 (severe). A change of 5 points or more is considered reliable. Functional outcome was rated using IAPT criteria of engaged in meaningful activity (in a work, domestic, voluntary or academic setting) or unoccupied. Demographic, activity, and service use data were collected by self-report and from the electronic health record. Service use data comprised duration of mental health admissions (occupied bed days, OBDs) and number of days under a crisis team (crisis team days, CTDs), calculated as a mean/person/month. Self-reported ethnicity was dichotomised into Black and Minority Ethnic (BME) or other group (non-BME).

IAPT-SMI clinical outcomes

1. Choice of outcome in cognitive therapy for psychoses (CHOICE) (Greenwood et al., 2010): An 11-item version of this self-report measure was completed sessionally. Each item is rated from 0 (worst) to 10 (best), giving a mean total score ranging from 0 to 10. The CHOICE was determined a priori as the primary outcome measure for the psychosis demonstration sites, and reliable improvement / deterioration predetermined as a change of ≥1.45 in mean total score. The 11-item version was based on the highest loading items from the 34-item measure, and it has good reliability and validity.

2. Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Tennant et al., 2007): Fourteen items on this self-report measure are rated from 1 (none of the time) to 5 (all of the time), yielding a total score ranging from 14 to 70. Sensitivity analyses suggest a change of ≥3 to represent meaningful clinical change (Maheswaran, Weich, Powell, & Stewart-Brown, 2012).

3. Work and Social Adjustment Scale (WSAS) (Mundt, Marks, Shear, & Greist, 2002): Five self-report items rate functional impairment from 0 (low) to 8 (very severe), yielding a total score from 0-40. A reduction of ≥13 points is considered to represent reliable change.

4. Psychotic Symptom Rating Scales (PSYRATS) (Haddock, McCarron, Tarrier, & Faragher, 1999): This practitioner-administered structured interview of voices (11 items) and delusions (6 items) is completed with individuals with a recent history of the relevant symptom (during the past month), and each item is rated for increasing severity from 0 to 4. Voices (0-44) and delusions (0-24) scores are reported separately (PSYRATS-V and PSYRATS-D).

Analyses

The data were analysed using SPSS (version 22) and STATA (version 12). Outcomes are reported for therapy engagers (attended ≥5 sessions) from the start of the service on 01/11/12 to the final reporting date of 31/03/16. Therapy dropout was defined *a priori* as attending fewer than five sessions, which was considered too few to receive a meaningful 'dose' of therapy (7). Therapy engagers did not differ significantly from dropouts on gender, ethnicity, care pathway or diagnosis; there was a near-significant effect for age, and dropouts tended to be younger (see Table 1). Primary clinical outcome (CHOICE) and service use (OBDs, CTDs) data were collected for all engagers; functioning and secondary clinical outcomes (CORE-10, WEMWBS, WSAS, PSYRATS) were collected for those attending an assessment session.

Clinical outcome data were analysed by an independent statistician (MK) using linear mixed model analyses including all available data at each time point. Missing data can lead to biased estimates of the treatment effect. A recommended way to reduce potential bias is to analyse all the observed outcome data using a mixed model via the maximum likelihood method under a plausible missing data mechanism such as the missing at random mechanism

(White, Horton, Carpenter, & Pocock, 2011). We included demographic variables of age, gender and ethnicity as covariates in all models to assess any potential impact of these factors on outcomes. We also controlled for predictors of missing data in outcomes. To investigate potential predictors, we created a binary indicator (0= no missing data, 1= at least one of four assessments missing) of missing data for each outcome and screened for predictors of missing data using a series of logistic regression analyses. Covariates that were statistically significant at the 5% level in the logistic models (reported below in Results) were controlled for in the respective analyses of the outcome data to minimise potential bias arising from missing data. The analyses of primary and secondary outcomes were performed using linear mixed effects models to take account of the longitudinal (clustered) nature of the data. Random effects for clinical team (EI, CMHT, PICuP) and participant were tested; the former was not significant and was dropped from the analyses. The effectiveness of CBTp was tested by comparing pre-therapy with mid-therapy (3 month assessment), post-therapy (end of therapy assessment or last sessional CHOICE), and follow-up (where available). Comparisons between mid- and post-therapy and between post-therapy and follow-up were also tested using Stata's 'lincom' command following the estimation of the linear mixed models. Effect sizes (ES) were calculated using the user contributed Stata command 'cohend' (Tannenbaum, 2011), and we report Cohen's d corrected for uneven groups (due to missing data at the different time points). All outcome data were analysed, followed by subset analysis by care pathway (EI or PR) using a Time x Pathway interaction.

Wilcoxon matched-pair signed-rank tests and the McNemar test were used to assess the significance of change in service use (OBDs, CTDs) and functional outcome, respectively, over the course of therapy. Within-participant effect sizes (ES, Cohen's d) were calculated using the pooled standard deviation to minimise inflation of effects.

Results

Referrals and therapy completion

On the final day of reporting (31/10/15), there were 5602 people with psychosis being treated in the PR pathway and 767 in the EI pathway. During the referral period (1/11/12 - 31/10/15), 703 people were referred for CBTp within IAPT-SMI, and 599 (85%) were accepted as appropriate referrals. Accepted referrals of 200/year over 2012-2015 compared with 106 in the year before IAPT-SMI, an increase of 89%. Eight-six percent (514/599) of accepted referrals opted in, 89% (456/514) of these attended their assessment, and 88% (402/456) of these had started therapy by the end of the referral period (67% of the original 599 accepted referrals). Those who were not offered therapy opted out after the assessment (n=39) or were referred to or given details of an alternative, more suitable service (n=15). Referrals and attrition are shown in Figure 1. Mean time from referral to assessment was 37 days (SD 27.7), and from assessment to first therapy session was 64 days (SD=57). These waiting times include time to arrange appointments and accommodation of patient preferences and cancellations. By 31/03/16, 342 cases had completed their involvement with IAPT-SMI: 303 engagers (75% of those starting); and 39 (9.7%) who dropped out (received <5 sessions). Fifty-eight were either still in therapy (n=48) or had not completed for other reasons (n=10). Therapy engagers attended, on average, 18 sessions (SD=8.1) over 8 months (SD=4). A full-time therapist completed therapy with 20 patients per year, with a caseload of 15 patients at any one time and weekly therapy sessions. Demographic data, care pathways, and diagnoses of completed cases are shown in Table 1.

Figure 1 and Table 1 here

Primary clinical outcome (CHOICE) (Table 2)

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The paired completion rate (first-last CHOICE over the course of therapy) was 93% (n=280). Predictors of missing CHOICE data were diagnosis and pre-therapy WSAS and WEMWBS (higher WSAS and WEMWBS scores, and 'other' diagnosis predicted fewer missing data). These covariates were controlled for in the analysis to minimise any potential bias. Therapy engagers improved during therapy, with increased post-therapy (or last sessional) scores (ES=0.7), which were maintained at follow-up (ES=0.5). There were no significant differences between EI and PR for any of the comparisons, and no effects of the demographic covariates on outcomes. Forty nine percent of therapy completers showed reliable improvement on the CHOICE (mean score increased by ≥1.45). Fourteen (5%) showed reliable deterioration (mean score reduced by ≥1.45), but none required admission or crisis team referral.

Table 2 here

Secondary clinical outcomes (Table 3)

Missing data predictors were: diagnosis and pre-therapy employment status for WEMWBS; diagnosis, pre-therapy employment status and WEMWBS scores for WSAS; and diagnosis for PSYRATS-V. Higher WEMWBS scores, not engaged in meaningful activity, and 'other' diagnosis predicted fewer missing data. These were controlled for in the respective analyses to reduce any potential bias arising from missing data. Paired completion rates on the measures (pre-post therapy) ranged from 80-86%. Baseline scores indicated moderate levels of distress and functional impairment, and low subjective wellbeing. Sixty percent of patients reported current positive psychotic symptoms (voices and/or delusions). There were significant improvements on all measures during therapy (ES= 0.45-1.00), most of which were maintained at follow-up (ES= 0.3-0.75). Therapy engagers reported reduced levels of distress, greater subjective wellbeing, improved functioning, and reduced severity of voices

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and delusions. There was a significant pathway difference only for PSYRATS-V scores

(Time x Pathway interaction p= 0.015): the improvement was greater in the EI group post-

therapy, and the improvement within the PR group was not maintained in the follow-up

sample.

Table 3 here

Service use

Paired service use data were available for all therapy engagers. Average use/person/month in

the year preceding therapy was 0.8 occupied bed days (OBDs) (SD=2.2, range 0-14) and 0.5

crisis team days (CTDs) (SD=1.5, range 0-15), which reduced to 0.2 OBDs (SD=1.2, range

0-12) and 0.1 CTDs (SD=0.5, range 0-5) during therapy (Wilcoxon matched-pair signed-rank

test, p<0.001; OBDs: d=0.45; CTDs: d=0.4).

Functioning outcomes

Paired outcomes were available for 89% of therapy engagers (n=269). Improvement (from

unoccupied to meaningful activity) was reported by 18.5% (n=50), no change for 74.5%

(n=200), and a reduction in activity (from meaningful to unoccupied) for 7% (n=19). There

was a significant change in the proportion of patients engaged in meaningful activity before

and after therapy, with a net change of 31 patients from unoccupied to activity (related

samples McNemar test, p<0.001).

Discussion

CBTp is recommended by clinical guidelines, but delivery in routine services is low. The

demonstration site showed that it is possible to enhance delivery of NICE-concordant CBTp

in routine secondary care services using a systematic approach, and to demonstrate

effectiveness with routine outcome monitoring. The large number of patients who were referred and who opted-in showed that demand for CBTp is high. Three main factors facilitated increased access (Jolley et al., 2015). Firstly, SLaM Trust was organisationally ready to be a demonstration site, with strong clinical leadership and a critical mass of staff trained to deliver and supervise CBTp to a high standard. Secondly, funding was ring-fenced (i.e. restricted for IAPT-SMI use) and could be translated almost immediately into increased delivery by the creation of dedicated psychological therapist posts. With regard to treatment pathways, therapy provision was embedded in the team within Early Intervention, facilitating engagement with patients. In Promoting Recovery, IAPT-SMI provided a separate-but-linked psychology service (people who were ambivalent about therapy, or engaged erratically, were offered psychological therapy within their Community Mental Health Team). Thirdly, the specialised focus of the service meant that all staff understood the difficulties facing people with psychosis, and how to accommodate these to engage clients in therapy. The findings are consistent with previous reports (Ince et al., 2016) that a lack of skilled therapist capacity and appropriate service structure contribute to poor implementation, rather than a lack of demand for CBTp. The large number of patients with psychosis in the treatment pathways highlights the size of the need and, despite its success, IAPT-SMI still only saw a percentage of the total caseload.

The site demonstrated effectiveness of CBTp using routine outcome monitoring. Changes on the primary outcome measure compare favourably with those in IAPT services for people with Common Mental Illness, with medium to large pre-post effect sizes (Clark et al., 2009; Gyani, Shafran, Layard, & Clark, 2013). Pre-post changes on secondary measures and the effect sizes are comparable to other effectiveness studies of CBTp in clinical services (Lincoln et al., 2012; A. P. Morrison et al., 2004; Peters et al., 2015). In addition, reductions in service use during therapy, together with improvement in meaningful activity, suggest

potential for cost-effective delivery. Our results provide further evidence that it is possible to reproduce the therapy outcomes of clinical trials within routine services. In particular, the site delivered CBTp and achieved good outcomes at scale across an IAPT-SMI service that included community teams in addition to a specialised psychological therapies service. The patients were symptomatic, presenting with psychotic symptoms and/or emotional problems of moderate severity. Our patient group had rates of ethnic variation similar to those of our catchment areas, and we found no significant demographic inequity in therapy engagement or primary outcome.

Routine outcome monitoring was feasible and acceptable to patients. Assistant psychologists conducted pre, mid- and post-therapy assessments, which reduced the burden on therapists. The initial assessment also served as a cost-effective triage system, reducing therapist time spent chasing referrals who eventually opted-out. Rates of attendance at post-therapy assessments were good for engagers (80%), showing that patients are willing to complete assessments. The sessional measurement achieved the high rates of paired outcomes obtained in IAPT-CMI (>90%). Patients mostly found outcome monitoring satisfactory (Fornells-Ambrojo et al., 2017), and sharing this information helped to allay therapists' reservations about sessional measurement.

Limitations

The primary limitations of the evaluation are its site-specificity and the uncontrolled design. Assessments were independent of therapy but not blind, and the primary outcome measure was novel. Reported effects are within-participant and pre-post, so we cannot infer that changes definitely occurred as a result of therapy, although findings from the PICuP service using a similar design have shown no changes during a waiting list period (Peters et al., 2015). The within-participant effect sizes cannot be compared directly with the smaller

between-group or meta-analytic effect sizes for CBTp, which range from 0.2 to 0.4. Follow-up assessments were only implemented across the service 18-months into the pilot, and there was loss to follow-up, especially in the Early Intervention group. Hence, we cannot assume that the maintenance of therapy gains in the follow-up sample would generalise to the rest of the patient group.

Implications

The challenge within the NHS is to deliver, at scale, evidence-based therapies that reproduce the outcomes achieved in therapy trials. This IAPT-SMI demonstration site demonstrated that a systematic approach, whereby psychological therapies are prioritised and evaluated, can operate effectively in routine community services, within or alongside the CMHT, and can produce good clinical outcomes. Our experience shows that once referral pathways and expert supervision structures are established, the recruitment of well-trained, or trainable, therapists into specialist posts will result in increased and potentially cost-effective delivery.

The UK Early Intervention in Psychosis Access and Waiting Time Standard (NHS England, the National Collaborating Centre for Mental Health, & National Institute for Health and Care Excellence, 2016) has facilitated access to CBTp within EI teams through additional funding for posts and training. However, there remains a need to support dedicated therapy posts in teams, and to ensure that therapists who complete CBTp training have the time to deliver therapy. Previous attempts to train up case managers have had limited success, due to lack of protected time (Brooker & Brabban, 2004), and widening access to psychological therapies requires roles that are dedicated, at least in part, to therapy delivery (Garety et al., 2018). Our findings can inform the work of NHS England to meet the commitments set out in the Five Year Forward View for Mental Health (NHS England, 2016) to improve access to NICE-recommended psychological therapies for people with severe

mental illness. The IAPT-SMI approach is also compatible with the Coordinated Specialty Care (CSC) model for first episode psychosis in the US (Heinssen, Goldstein, & Azrin, 2014), and offers a framework for therapy provision and evaluation within the CSC program. With the key facilitators of implementation in place, new investment translates readily into efficient and effective therapy delivery (Jolley, 2018).

Conclusion:

The SLaM IAPT-SMI demonstration site showed that NICE-recommended individual CBTp can be delivered successfully at scale in community services, with routine outcome monitoring, and good clinical outcomes. Our framework is replicable in other services. The first step is a therapist champion to facilitate organisational change and service development. Ready organisations can use funding to build a critical mass of supervisors and therapists to deliver therapy, and also to support further workforce development and therapy innovations. Dedicated assessment and administrative resources make efficient use of therapist time.

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Figure 1: Consort diagram showing referrals and retention over 41 months

Table 1: Demographic characteristics of closed cases.

Variable	All (n=342)	Therapy engagers (n=303)	Dropped out from therapy (n=39)	Group comparisons
Mean age in years (SD, range)	38.1 (11.4, 18-70)	38.5 (11.4, 18-70)	34.7 (11.0, 19-65)	t=1.94 (df 340), p =.053
Gender				
Male	174 (51%)	155 (51%)	19 (49%)	χ^2=0.014, df 1, p=0.91
Female	168 (49%)	148 (49%)	20 (51%)	
Ethnic group				
Black/Minority Ethnic (BME)	187 (55%)	164 (54%)	23 (59%)	χ^2=0.16, df 1, p=0.69
Non-BME	155 (45%)	139 (46%)	16 (41%)	
Pathway				
Early Intervention	87 (25%)	74 (24%)	13 (33%)	χ^2=1.02, df 1, p=0.31
Promoting Recovery	255 (75%)	229 (76%)	26 (67%)	
Diagnosis				
Schizophrenia spectrum (ICD F20-29)	213 (62.5%)	188 (62.5%)	25 (64%)	χ^2=0.4, df 3, p=0.94
Bipolar (ICD F30/31)	29 (8.5%)	25 (8%)	4 (10%)	
Psychotic depression	33 (9.5%)	30 (10%)	3 (8%)	
Other	66 (19.5%)	59 (19.5%)	7 (18%)	

Key: ICD: International Classification of Disease (World Health Organisation, 1992).

Table 2: Primary clinical outcome for therapy engagers

	Whole Sample (n=302[1])				EI Pathway (n=73[1])				PR Pathway (n=229)			
	Unadjusted Mean (SD)											
	Pre (302)	Mid (186)	Post (280)	Follow-up (100)	Pre (73)	Mid (39)	Post (67)	Follow-up (7)	Pre (229)	Mid (147)	Post (213)	Follow-up (93)
CHOICE	4.51 (2.16)	5.39 (2.23)	6.09 (2.24)	5.55 (2.27)	5.05 (2.17)	6.16 (2.0)	6.85 (1.90)	6.60 (1.57)	4.34 (2.13)	5.19 (2.25)	5.86 (2.28)	5.47 (2.31)
Comparisons	Coeff.	95% CI	p-value	ES	Coeff.	95% CI	p-value	ES	Coeff.	95% CI	p-value	ES
Pre-therapy vs mid-therapy	0.86	0.60-1.12	<0.001	0.4	1.19	0.61-1.77	<0.001	0.5	0.77	0.48-1.07	< 0.001	0.4
Pre-therapy vs post-therapy	1.55	1.32-1.78	<0.001	0.7	1.68	1.20-2.16	<0.001	0.9	1.51	1.25-1.77	< 0.001	0.7
Pre-therapy vs follow-up	1.27	0.94-1.60	<0.001	0.5	2.12	0.96-3.27	<0.001	0.7	1.19	0.84-1.53	< 0.001	0.5
Mid- vs post-therapy	0.69	0.42-0.95	<0.001	0.3	0.49	-0.10-1.08	0.10	0.35	0.73	0.44-1.03	< 0.001	0.3
Post-therapy vs follow-up	-0.28	-0.61-0.10	0.10	0.2	0.44	-0.72-1.59	0.46	0.15	-0.32	-0.67-0.03	0.073	0.15
Pre – Post CHOICE	n/280 (%)				n/67 (%)				n/213 (%)			
Any improvement	211 (75%)				56 (83.5%)				155 (73%)			
Reliable Improvement[2]	137 (49%)				38 (56.5%)				99 (47%)			
No change	5 (2%)				1 (1.5%)				4 (2%)			

No reliable change	129 (46%)	26 (39%)	103 (48%)
Any deterioration	64 (23%)	10 (15%)	54 (25%)
Reliable Deterioration[2]	14 (5%)	3 (4.5%)	11 (5%)
Between group (EI vs PR) χ^2 test	Any change: χ^2=3.26 df=2, NS; Reliable change: χ^2=2.15 df=2, NS.		

Key: [1]n=1 did not complete a CHOICE in EI group; [2]a change in mean score of 1.45 or more on the CHOICE; ES=Effect Size; SD=Standard deviation

Table 3: Secondary clinical outcomes for therapy engagers

Measure	Unadjusted Mean (SD)				Whole Sample								
					Pre-post change								
	Pre	Mid	Post	Follow-up	Pre- – Post-therapy				Pre-therapy – Follow-up			
					Coeff.	95% CI	p-value	ES	Coeff.	95% CI	p-value	ES
CORE-10	N=299 17.39 (8.40)	N=197 14.52 (7.92)	N=240 12.45 (7.97)	N=0	-4.59	-5.41 to -3.77	< 0.001	0.6				
WEMWBS	N=294 38.56 (11.53)	N=196 43.16 (10.92)	N=240 46.42 (11.83)	N=101 42.51 (13.35)	7.57	6.26 to 8.88	< 0.001	0.65	4.24	2.41 to 6.08	< 0.001	0.3
WSAS	N=291 20.52 (9.87)	N=197 18.28 (10.20)	N=235 15.68 (10.63)	N=98 17.60 (11.02)	-4.62	-5.80 to -3.43	< 0.001	0.45	-3.81	-5.46 to -2.16	< 0.001	0.3
PSYRATS-V	N=122 23.32 (7.91)	N=81 19.97 (10.48)	N=99 17.66 (10.88)	N=43 19.33 (11.44)	-5.81	-7.85 to -3.77	< 0.001	0.6	-4.24	-6.99 to -1.48	0.003	0.35
PSYRATS-D	N=141 13.88 (4.75)	N=100 10.65 (6.49)	N=110 7.95 (7.03)	N=52 9.88 (7.63)	-5.70	-6.94 to -4.46	< 0.001	1.00	-4.23	-5.86 to -2.60	< 0.001	0.75

Key: CORE-10: Clinical Outcomes in Routine Evaluation (10 item) Barkham et al., 2013; WEMWBS: Warwick Edinburgh Mental Wellbeing Scale (Tennant et al., 2007); WSAS: Work and Social Adjustment Scale (Mundt et al., 2002); PSYRATS: Psychotic Symptoms Rating Scale (Haddock et al., 1999); V: Voices; D: Delusions; CI=95% Confidence Interval; ES=Effect Size; SD=Standard deviation.

IAPT-SMI Referrals

Referral not accepted n=97 (14 EI, 83 PR)
1. No current or history of F2 spectrum psychosis n=11 (1 EI, 10 PR)
2. PR: needs MDT input, or other service, or high risk n=62
3. EI: offered therapy in team n= 11
4. Out of area n=2
5. Inpatient n=4 (2 EI, 2 PR)
6. Other n=7

Referred
n= 703
(139 EI, 564 PR)

In progress: n=7 (PR)

Accepted
n= 599 (125 EI, 474 PR)

Opted out:
n= 74 (19 EI, 55 PR)

Opted-in
n= 514
(106 EI, 408 PR)

Awaiting opt-in:
n= 11 (PR)

Opted out: n= 41, (5 EI, 36 PR)
Refused or missed initial assessment: n=5 (EI)

Awaiting assessment: n=12 (PR)

Assessed
n= 456
(96 EI, 360 PR)

Opted out: n= 39 (6 EI, 33 PR)
Referred on: n= 15 (PR)

On hold/waiting:
n=5 (1 EI, 4 PR)

Started therapy
n= 402
(94 EI, 308 PR)

Dropout (<5 sessions):
n=39 (13 EI, 26 PR)
Discontinued/lost to contact:
n=10 (1 EI, 9 PR)

Completed mid/3 month
n= 248 (46 EI, 202 PR)

Therapy ongoing: n= 48
(6 EI, 42 PR)
On hold: n= 2 (PR)

Completed therapy
n= 303 (74 EI, 229 PR)

Completed follow-up
n= 100 (7 EI, 93 PR)

Highlights:

- Individual CBTp delivered in routine services achieves good clinical outcomes

- Only a small investment in therapy provision is needed for increased delivery

- Strong clinical leadership is a key facilitator for implementation of CBTp at scale

- Routine and sessional outcome measurement is acceptable to clients with psychosis

- No demographic inequity in therapy engagement or primary outcome