



## LJMU Research Online

**Harris, J, Dalkin, S, Jones, L, Ainscough, T, Maden, M, Bate, A, Copello, A, Gilchrist, G, Griffith, E, Mitcheson, L, Sumnall, H and Hughes, E**

**Achieving integrated treatment: a realist synthesis of service models and systems for co-existing serious mental health and substance use conditions**

<http://researchonline.ljmu.ac.uk/id/eprint/19817/>

### Article

**Citation** (please note it is advisable to refer to the publisher's version if you intend to cite from this work)

**Harris, J, Dalkin, S, Jones, L, Ainscough, T, Maden, M, Bate, A, Copello, A, Gilchrist, G, Griffith, E, Mitcheson, L, Sumnall, H and Hughes, E (2023) Achieving integrated treatment: a realist synthesis of service models and svstems for co-existing serious mental health and substance use**

LJMU has developed [LJMU Research Online](#) for users to access the research output of the University more effectively. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LJMU Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain.

The version presented here may differ from the published version or from the version of the record. Please see the repository URL above for details on accessing the published version and note that access may require a subscription.

For more information please contact [researchonline@ljmu.ac.uk](mailto:researchonline@ljmu.ac.uk)

<http://researchonline.ljmu.ac.uk/>

1 **Achieving Integrated Treatment: A realist synthesis of service models and systems for**  
2 **co-existing serious mental health and substance use conditions**

3 Jane Harris, PhD<sup>1</sup>, Sonia Dalkin, PhD<sup>2</sup>, Lisa Jones, BSc<sup>1</sup>, Tom Ainscough, PhD<sup>3</sup>, Michelle Maden PhD<sup>4</sup>, Angela  
4 Bate, PhD<sup>2</sup>, Professor Alexandre Copello, PhD<sup>5</sup>, Professor Gail Gilchrist, PhD<sup>6</sup>, Emma Griffith, DClinPsych<sup>7</sup>,  
5 Luke Mitcheson, DClinPsych<sup>8</sup>, Professor Harry Sumnall, PhD<sup>1</sup> and Professor Elizabeth Hughes, PhD<sup>9</sup>

6 **Corresponding author:** Liverpool John Moores University, Public Health Institute, Exchange Station,  
7 Tithebarn Street Liverpool, L2 2QP. Tel: 0151 231 4511 Email: [j.harris@ljmu.ac.uk](mailto:j.harris@ljmu.ac.uk)

8 1.Public Health Institute, Faculty of Health, Liverpool John Moores University, Liverpool, UK 2. Department of  
9 Social Work, Education and Community Wellbeing, Faculty of Health & Life Sciences, Northumbria  
10 University, Newcastle, UK 3. School of Healthcare, Faculty of Medicine and Health, University of Leeds,  
11 Leeds, UK 4. Liverpool Reviews and Implementation Group, Faculty of Health and Life Sciences, University of  
12 Liverpool, Liverpool, UK 5. School of Psychology, College of Life and Environmental Sciences, University of  
13 Birmingham, Birmingham, UK 6. National Addiction Centre, Institute of Psychiatry, Psychology and  
14 Neuroscience, Kings College London, London, UK 7. Specialised Services, Avon and Wiltshire NHS  
15 Partnership Trust, Bristol, UK 8. Department of Psychology and Psychiatry in Addictions, South London and  
16 Maudsley NHS Trust, London, UK 9. School of Health and Social Care, Edinburgh Napier University,  
17 Edinburgh, UK

18 **Abstract (195/200 words)**

19 Approximately 30-50% of people with serious mental illness have co-existing drug/alcohol problems  
20 (COSMHAD), associated with adverse health/social care outcomes. UK guidelines advocate both co-occurring  
21 needs being met within mental health services but uncertainty remains about how to operationalise this to  
22 improve outcomes. Various unevaluated service configurations exist in the UK. A realist synthesis was  
23 undertaken to identify, test and refine programme theories (PTs) explaining how context shapes the mechanisms  
24 through which UK service models for COSMHAD work, for whom, and in what circumstances. Structured and  
25 iterative realist searches of 7 databases identified 5,099 records. A two-stage screening process identified 132  
26 papers. Three broad contextual factors shaped COSMAHD services across 11 PTs: committed leadership; clear  
27 expectations regarding COSMAHD from mental health and substance use workforces; and clear care  
28 coordination processes. These contextual factors led to increased staff empathy, confidence, legitimisation and  
29 multidisciplinary ethos which improved care coordination, and increased people with COSMHAD's motivations  
30 to work towards their goals. Our synthesis highlights that integrating COSMHAD care is complex and both  
31 individual and cultural behavioural shifts in leadership, workforce and service delivery is essential to ensure  
32 people with COSMHAD receive compassionate, trauma informed care that meets their needs.

33 **Funding** Study funded by NIHR Health Technology Assessment 128128. The views expressed are those of the  
34 author(s) and not necessarily those of NIHR or Department of Health and Social Care.

35 **Declaration:** We confirm this paper has not been submitted or previously published elsewhere  
36

37 **Achieving Integrated Treatment: A realist synthesis of service models and systems for**  
38 **co-existing serious mental health and substance use conditions**

39 **(4339/3500)**

40 **Introduction**

41 Approximately 30%-50% of people with serious mental illness (SMI) have a co-existing alcohol/drug condition(1,  
42 2). SMI includes conditions that affect daily functioning, quality of life and, require long term support from  
43 services(3) such as schizophrenia, paranoid psychosis; schizoaffective disorders; bipolar affective disorders; and  
44 long term and severe depression. Co-Occurring SMI and Alcohol/Drug use (COSMHAD) is associated with  
45 adverse health/social consequences including: increased risk of suicide, self-harm(4), violence perpetration and  
46 victimisation(5, 6); criminal justice system and forensic mental health contact(7), recidivism, crisis care(8);  
47 overall service costs (9); co-morbid physical health problems(10), and homelessness(7).  
48

49 The importance of integrating effective treatments for COSMHAD is internationally recognised(11) however  
50 there remains a lack of consensus regarding the most appropriate treatment strategies and settings(12). As a  
51 consequence, guidance in many countries has developed without supporting evidence or frameworks for  
52 COSMHAD integration(13). COSMHAD treatment research comprises randomised control trials (RCTs) which  
53 integrate psychosis and addiction treatment approaches (combining cognitive behavioural therapy, motivational  
54 interviewing and relapse prevention)(14, 15); Integrated Treatment models(16), and workforce training  
55 evaluation(17). However there remains a lack of high-quality evidence on how psychosocial services should be  
56 best delivered to improve outcomes due to small sample sizes, high attrition rates, differing ways psychosocial  
57 interventions are delivered and differences in outcome measures(18). Furthermore, the heterogeneous nature of  
58 people with COSMHAD, exclusion of those who are currently mentally unwell from research and participation  
59 barriers (such as childcare or homelessness) mean existing studies provide only partial evidence from a sub-  
60 section of the population with COSMHAD.

61  
62 In the UK, a policy of “mainstreaming”(19) (that people should have both their COSMHAD needs met  
63 primarily within mental health services), has been advocated with the high prevalence of COSMHAD in these  
64 services meaning it should be considered part of routine care(20, 21). Mainstreaming advocates the workforce  
65 have the appropriate capabilities to offer treatment that addresses mental health and substance use  
66 simultaneously and implementation requires support from local clinical leadership. Mainstreaming remains an  
67 ambition of the recent mental health strategies (22-25) and drugs strategies(26-28) of all four devolved UK  
68 nations.

69 Recent UK guidance recommends key agencies work together to develop care pathways that ensure people with  
70 COSMHAD get the right help, in the right place, at the right time(29) with “no wrong door” for people to access  
71 help. However implementing “mainstreaming” in UK mental health services has been variable and hindered by  
72 factors including austerity, public spending reductions, competitive commissioning climates with community drug  
73 and alcohol treatment provided outside of the National Health Service (NHS) and no ring-fenced budget for drug  
74 and alcohol treatment(30). A variety of local models have evolved including senior leadership roles, link workers  
75 and staff network models; which require considerable investment but remain unevaluated(31). Significant  
76 uncertainty remains about how care should be delivered and under what contexts it works to meet the needs of  
77 such a diverse group. A realist synthesis was undertaken to address this gap.

78  
79 Realist syntheses are a form of theory-based literature review pioneered by Pawson and Tilley(32) with reporting  
80 standards developed under the RAMESES (Realist and Meta-Narrative Evidence Synthesis) project(33). Realist  
81 approaches are theory driven and attend to the ways complex social interventions may have different effects for  
82 different people, depending on the contexts they are introduced in. Realist reviews systematically and  
83 transparently synthesise relevant literature to produce an explanatory framework of how programmes lead to their  
84 outcomes using context-mechanism-outcome (CMO) configurations which are tested and refined as the synthesis  
85 progresses. Data are relevant if they address the theory under test (relevance) and if the inference drawn has  
86 sufficient weight to contribute to development, testing and refining of programme theories (PTs, rigour. The worth  
87 of studies is thus established during the synthesis rather than through a pre-qualification exercise (34).

88 Services for people with COSMHAD typically require involvement of multiple agencies who deliver a  
89 combination of interventions as part of an individual’s treatment pathway. They are complex systems with  
90 numerous compounding factors that can impact on outcomes including the severity of mental health or  
91 drug/alcohol condition, individual characteristics, previous experience of health seeking and service factors.  
92 Realist approaches offer the potential to describe why services for COSMHAD are successful or unsuccessful, in  
93 complex social systems(32) through focusing on ‘what works, for who, in which circumstances and why’.

94 The realist synthesis aim was to identify, test and refine PTs to explain how context shapes the mechanisms  
95 through which UK service models for COSMHAD work, for whom and in what circumstances (PROSPERO  
96 protocol CRD42020168667(35)).

## 97 **Methods**

98 To develop initial programme theories (IPTs) to be tested and refined in the review, we began our realist  
99 synthesis by triangulating findings from articles describing COSMHAD service provision in the UK, key UK  
100 policy(20, 29) and a two-hour online workshop with clinicians, policy makers, managers and academic experts  
101 (n=14). This produced a COSMHAD programme sketch and 16 potential programme theories in the form of  
102 ‘if...then’ statements.(36). The research team (n=9) worked to refine these ‘if...then’ statements into 11 Context

103 (C), Mechanism (M, including resource and reasoning) and Outcome (CMO) statements (referred to as IPTs) by  
104 revisiting the key literature, policy and workshop transcript and engagement with formal theory. Mechanisms  
105 are a combination of resources offered by the programme under study and the stakeholders reasoning in  
106 response.(32) For the purpose of this review, we have disaggregated mechanisms into resource (the component  
107 introduced in context) and reasoning as this can assist in with the identification of relevant contexts and  
108 mechanisms and avoids conflating programme strategy (resource) with mechanism(37, 38).

#### 109 *Search strategy and selection criteria*

110 Figure 1 details our approach to literature searching. Our search strategy combined terms from five categories 1)  
111 SMI, 2) substance use, 3) co-occurrence, 4) service integration and 5) delivery of health services (see appendix  
112 page 1). Seven health and social sciences databases (Medline, Cochrane Library, EMBASE, Web of Science all  
113 databases, CINAHL, PsycInfo and HMIC) were searched up to 13<sup>th</sup> March 2020 (n=7640). We adopted an  
114 iterative approach to searching through CLUSTER searching for sibling studies, citation tracking and  
115 complementary theory searches as the review progressed(39) (n=368). After removal of duplicates, 5,099  
116 manuscripts went through a two-stage screening process. Titles and abstracts were screened by two reviewers (JH,  
117 TA) and included if they described services, treatment models or pathways (intervention) for adults (aged over 16  
118 years) with SMI and problematic use of alcohol/drugs (population) in high income countries (context) published  
119 in the English language. Due to the large number of papers identified and the contextual differences in specialist  
120 services, we excluded studies delivered in specialist settings such as for veterans, prisoners, homeless populations,  
121 and people living with HIV. Services providing care to these population within non-specialist mental health and  
122 substance use services were still included in the review. Stage one selected 817 manuscripts which were  
123 considered an “*initial sampling frame of papers*” (p.151) on service provision for COSMHAD(39).

124 The 817 full manuscripts were screened against the 11 initial programme theories (IPTs) (see panel) according to  
125 their capacity to enable testing and refinement of the IPTs. Papers were selected when they 1) reported on  
126 integration of services for COSMHAD 2) described features and functions of integrated service architecture  
127 relevant to the IPT 3) provided causal insights into one or more IPT statements. All texts were screened by JH  
128 with TA and LJ independently screening 10%. The three reviewers met regularly to discuss their decisions and  
129 resolve disagreements. As a result, 132 manuscripts were included in the realist synthesis (summary table in  
130 appendix page 4).

#### 131 *Data analysis*

132 The final 132 manuscripts were mapped to the 11 IPT statements using a data extraction form, with some  
133 aligning to multiple IPTs. The selected manuscripts were coded to each IPT using the linked memo function in  
134 Nvivo (version 12) to create a transparent audit trail of data analysis decisions(40). We identified CMO  
135 configurations directly from the literature as dyads (C-M/ M-O/ C-O) or triads (CMO)(41) following data  
136 reduction processes described by Byng et al(42) (further detail included on appendix page 3).

137 Following refinement of the PTs, we undertook purposive searching to identify compatible formal theories to  
138 assist in interpreting our realist synthesis at the micro, meso or macro level. Shortlisting of theories according to  
139 Shearn et al’s guidance (43) identified the Sustainable Integrated Chronic Care Models for multimorbidity  
140 (SELFIE) framework. SELFIE is an international taxonomy of promising integrated care for persons with  
141 multimorbidity which presents six components at the micro, meso and macro levels(44). Our synthesis found  
142 evidence across three contextual components of the SELFIE framework which were used to group our PTs  
143 according to 1) leadership: clear, committed leadership across all organisations involved in providing  
144 COSMHAD care 2) workforce: clear expectations that staff are responsible for people with COSMHAD 3)  
145 service delivery: structured coordination of pathways and protocols across involved organisations to assist in  
146 integrating COSMHAD care.

## 147 **Results**

148 Eleven PTs explaining how care models are integrated were identified (see panel): first contact and assessment  
149 (PT1), staff attitudes (PT2), encouraging collaborative case management (PT3), continuous exposure to  
150 COSMHAD from undergraduate training (PT4), continuous workforce development (PT5), opinion leaders  
151 (PT6), formalised staff networks (PT7), coordinated care pathways (PT8), mental health led services (PT9),  
152 evaluation and quality improvement (PT10) and recruiting and retaining skilled staff (PT11). Our overall PT

153 (figure 2) identified several contextual factors shaping the mechanisms through which services achieved  
154 outcomes for people with COSMHAD (e.g., better service engagement, increased motivation towards treatment  
155 goals). (44) Our 11 PTs are presented under three contextual headings taken from the SELFIE model.

156 *Leadership theories (PTs 3, 5, 6, 8, 10, 11)*

157 The SELFIE framework proposes supportive leaders with clear accountability, visions and ambitions can  
158 stimulate successful integration for multi-morbidities(44). Six PTs demonstrated supportive leadership as an  
159 important context for integrating care (PTs 3, 5, 6, 8, 10, 11). These PTs highlighted that integration for  
160 COSMHAD requires leaders who were: committed and had authority to implement integrated care (PTs 6, 10),  
161 effectively communicating a shared vision for treating COSMHAD (PT6), willing to develop and put formal  
162 policies and pathways in place (PTs 3, 6, 8), appreciated the need for continuous workforce development (PTs 5,  
163 11), and committed to work jointly across organisations (PTs 3, 8, 10, 11).

164 The realist synthesis identified leaders with effective COSMHAD service visions (context) who took action to  
165 develop relevant policies, processes and procedures (mechanism- resources) lead staff to feel supported in taking  
166 a whole person approach (PTs 3, 6). Seeing interventions work in practice increased staff empathy and reduced  
167 scepticism, increased staff confidence in their skills to treat COSMHAD (PTs 5, 8), ensured staff felt valued and  
168 secure (PTs 10, 11), and facilitated a multidisciplinary ethos (PT5) (mechanism – reasoning). For example, when  
169 leaders implement (context) care protocols (PT3) that clearly describe coordination from initiation of care through  
170 to referral/discharge(45-48) (mechanism – resource), staff felt supported in their roles(49) and enabled them to  
171 use their skills and knowledge. Furthermore, it provided permission for staff to take a more pre-emptive,  
172 preventative, whole-person approach to people with COSMHAD(50) (mechanism – reasoning). Similarly,  
173 numerous studies(51-57) highlighted leadership that supports continuous workforce development for COSMHAD  
174 (context) (PT5), combining more traditional “classroom-based” methods with sustained supervision and practice-  
175 based learning (mechanism resource), can produce lasting changes in staff skills, values and confidence(51-57).  
176 However, “attitudes did not change until staff began to see evidence that clients responded to new  
177 interventions”(54) (p.7) (mechanism reasoning). The literature suggests workforce policies that ensure staff  
178 retention (PT11), including clear job descriptions requiring practise-based experience (mechanism resource)(57-  
179 60) ensured staff felt encouraged, legitimised and secure in their roles (mechanism – reasoning). These PTs are  
180 supported by the SELFIE framework, which highlights that successful collaboration between organisations and  
181 professionals requires belief and willingness in the collaboration, trust in one another, and mutual respect(44).

182 Outcomes commonly associated with the leadership PTs were improved care co-ordination and consistency,  
183 leading to better individual engagement and motivation to work towards goals. Collaborative case management  
184 (PT3), continuous workforce development (PT5) and recruitment and retention of skilled staff (PT11) lead to  
185 improved therapeutic relationships. Retention of skilled staff was also identified as an outcome following the  
186 development of workforce policies (PT11). These outcomes are supported by the SELFIE framework, where  
187 shared-decision making is key at the micro-level of leadership to ensure care integration for comorbidities. This  
188 shared decision making facilitates individualised care planning tailored to complex needs(44), reflected in the  
189 synthesis’ focus on developing good therapeutic relationships and motivation to achieve individuals’ self-  
190 identified treatment goals.

191 *Workforce theories (PTs 2, 4)*

192 The SELFIE framework identifies continuous professional development as an important aspect of integrated care  
193 for multi-morbidity, including the creation of new professional roles (for example, consultant nurse for  
194 COSMHAD) and continuous professional development(61). The two workforce related PTs identify that staff in  
195 both mental health and substance use services must accept that offering comprehensive care to people presenting  
196 with COSMHAD is part of routine care (and their role). This is facilitated by training to address staff attitudes  
197 (PT2) and continuous supervised exposure to working with people with COSMHAD through pre-qualification,  
198 post qualification and continuous professional development (PT4).

199 Mixed attitudes towards COSMHAD were identified among health care professionals, which varied according to  
200 health discipline and experience (PT2)(62). For staff working in mental health services, this could be influenced  
201 by how much exposure they have to people with COSMHAD during their undergraduate and postgraduate training  
202 (PT4)(49, 63, 64). Positive staff attitudes described were: being highly interested in working with people with  
203 COSMHAD, expressing non-punitive beliefs about substance use, commitment to therapeutic relationships, and

204 pragmatic, flexible and individually tailored approaches(49, 62, 65-72). The literature also identified a required  
205 desire to reconcile the structural, political and philosophical differences between mental health and substance use  
206 services at an organisational level to develop an appropriate and relevant approach to workforce development  
207 (mechanism – resource, PTs 2, 4). Differences in use of pharmacotherapies, ontological understandings of health,  
208 understandings of aetiology for COSMHAD, symptom classification frameworks and views on client autonomy  
209 manifest themselves in how substance use and mental health services structure delivery and set outcomes for  
210 treatment(47, 67, 68, 70, 71, 73-76). As Adams et al(62) summarised:

211 *“mental health professionals and allied workers may have a willingness to work with people with comorbidity,*  
212 *but experience deficiencies in knowing what to offer them, either because of structural problems with services or*  
213 *paucity of training” (p.106)*

214 The synthesis suggests acknowledging that treatment for people with COSMHAD is part of routine care is  
215 required at individual and organisational level (context) and presents fertile ground for workforce development  
216 (mechanism – resource). Several studies highlighted that team-based, immersive approaches to workforce  
217 development (mechanism – resource, PT2) allow staff to learn through practice. Team-based approaches were  
218 described as combining formal education, ongoing training, clear policy and procedure and changes to workplace  
219 culture(49, 59, 66, 77, 78). The synthesis highlighted that mental health staff undertaking professional  
220 qualifications, needed immersive workforce development from pre-qualification undergraduate level including  
221 experience working with people with COSMHAD during clinical placement/rotation (mechanism – resource,  
222 PT4)(49, 64, 79-81).

223 Research from both the UK and US indicated this immersive approach to workforce development led to increased  
224 feelings of ownership and investment among staff who became less sceptical and more invested in the  
225 interventions they were developing skills in when they saw people with COSMHAD responding positively to  
226 them (mechanism – reasoning, PT2 & PT4)(54, 66, 82, 83). Blakely et al’s(54) study of the implementation of a  
227 team-based approach to motivational interview (MI) training reported an aptitude-attitude spiral, demonstrated by  
228 the quote below;(54)

229 *“As clinicians became proficient at MI [motivational interviewing] they experienced a positive response from*  
230 *clients that reinforced a belief that clients could change. This attitude led to a desire to learn more about the*  
231 *new technique and to become better at it. The better they became the better the clients responded. Once started,*  
232 *the Attitude-Aptitude spiral became self-reinforcing. Clinicians literally went from being reluctant and fearful,*  
233 *not completing assignments or scheduling supervision, to being inquisitive and impatient to learn more, reading*  
234 *on their own, and actively seeking clinical feedback in groups” (p.8)*

235 Addressing staff attitudes and values could lead to increased empathy towards the experiences of people with  
236 COSMHAD (PT4) as staff become more aware of why individuals have developed a substance use condition  
237 alongside SMI (PT2) and work effectively with this group via supervised practice (PT4) (outcomes). In the  
238 literature, this was found to increase staff retention. A US comparative study which implemented integrated  
239 COSMHAD care across multiple sites, concluded sites that *“emphasized professional growth*  
240 *opportunities...encourage staff to stay...increase empathy and decrease burnout”*(58) (p.482) had increased  
241 empathy and investment in approaches to treat COSMHAD, leading to better therapeutic relationships (outcome  
242 - PT2), which is recognised as an important facet of successful COSMHAD treatment(47, 49, 62, 68, 84, 85).  
243 Wieder et al(78) demonstrated this in their study of implementing integrated dual disorder treatment (IDDT) in  
244 Ohio where *“clinicians who were seen to be open and willing to learn the IDDT approaches, enthusiastic about*  
245 *small gains in their clients’ progress, and ready to “stick with it for the long haul” were associated with better*  
246 *outcomes related to mastery of those approaches” (p.160)*

247 *Service delivery theories (PTs 1, 7, 9)*

248 The SELFIE framework(44) highlights the importance of organisational and structural integration across health  
249 and social care sectors. It requires organisational transparency, ongoing communication and structural flexibility  
250 to meet the varied individual needs of those with COSMHAD. Three PTs were concerned with structural aspects  
251 of service delivery: ensuring a structured and satisfying first contact with services (PT1), formalised networking  
252 opportunities for staff across services to meet, communicate, build relationships and take action (PT7) and  
253 mental health clinicians taking the lead in care planning for COSMHAD (PT9).

254 Staff accepting that COSMAHD is part of routine care (PT1) is seen as a necessary context for ensuring a  
255 positive first contact (mechanism – resource). Adams et al(62) describe how “*professional ambivalence towards*  
256 *comorbidity [context]...may influence the assessment process and subsequent interactions [mechanism-*  
257 *resource]*” (p.102) and numerous studies highlighted the importance of using assessment protocols and  
258 screening tools to help the clinician formulate a thorough picture of the person’s life circumstances(46, 60, 86-  
259 88). This in turn allows the clinician to develop a richer understanding of the person’s situation, which  
260 promotes compassion. Providing staff with formal network opportunities (PT7) to meet, communicate and build  
261 relationships (context) will allow staff from different teams and services to work collaboratively for  
262 COSMHAD (mechanism – resource). The evidence suggests these networks work best when they are formal,  
263 structured, sustained and responsive to the complexity and variety of needs experienced by people with  
264 COSMHAD(89), with numerous examples in the literature including steering committees(45, 90) staff learning  
265 groups(91) communities of practice(92), collaborative case conferences(93-95) and large multidisciplinary  
266 networks such as those in Leeds(46) and Manchester(96). Studies from Europe and the US found formalised  
267 networking opportunities for COSMHAD (context) led to opportunities for multidisciplinary peer support and  
268 ethos(93, 97-99). Awareness among mental health staff (PT9) of their responsibilities to care or people with  
269 COSMHAD (context) is needed for mental health clinicians to lead care planning for these individuals  
270 (mechanism – resource). Graham et al(100) in their study of integrating COSMHAD services through the  
271 COMPASS liaison model in the UK, argue this requires “*integration of treatment both at the level of the*  
272 *clinician and service*” (p.184) and will result in “*a conceptual shift within the organisation and those working*  
273 *in it*”(101) (p.586) with a single mainstream clinician simultaneously addressing the needs of people with  
274 COSMHAD (mechanism – resource)(100, 101).

275 Across these three PTs, implementing structured service delivery resources (assessment PT1, formal networks  
276 PT7 and mental health led care planning PT9) was seen to increase the motivation, commitment and confidence  
277 of staff in providing effective integrated care to people with COSMHAD (mechanism – reasoning). A qualitative  
278 study evaluating new assessment procedures for COSMHAD across services (PT1) found that “*assessment*  
279 *developed in-common*” (mechanism – resource) can lead to services becoming “*one service through a process of*  
280 *referral, active communication (not always formal) and education of each other to provide mutual support*” (p.27)  
281 (mechanism – reasoning)(50). A UK study of communities of practice for COSMHAD (PT7) described how  
282 regular meetings gave staff collective support (mechanism – resource), which provided the energy and motivation  
283 to continue coordinating care, for example identifying “*small examples of progress in a client to re-motivate the*  
284 *presenter*” knowing that they were “*doing the right thing*” (p.138) (mechanism - reasoning)(92).

285 The outcomes associated with these PTs were improved service coordination, which lead to people with  
286 COSMHAD receiving more consistent, non-contradictory, unfragmented care. As a result, the synthesis suggested  
287 people would be more likely to remain engaged in care and motivated to work towards their individual goals.  
288 Engeldhart et al(97) described their experiences of developing a service delivery committee for COSMHAD  
289 (PT7), concluding that once members began using their existing resource in a more coordinated manner  
290 (mechanism – resource), people with COSMHAD were “*increasingly welcomed, identified and engaged*” (p.115)  
291 (outcomes). The outcomes from the synthesis align well with the SELFIE framework. The framework  
292 demonstrates that integration at the micro-level requires service delivery to be person-centred, tailored and flexible  
293 to the situation of the individual with multi-morbidities. Initial proactive care (e.g. at assessment, PT1) and  
294 promotion of self-management (PTs 7, 9) provide the means for individuals with multi-morbidities to become  
295 more pro-active, motivated and remain autonomous(44).

## 296 **Discussion**

297 COSMHAD is associated with adverse outcomes and UK policy advocates an integrated care approach which  
298 ensures individuals receive support for their varied and complex needs at the right place and time.(20) Despite  
299 this, considerable uncertainty remains on how to integrate COSMHAD care in the UK, with a predominance of  
300 unevaluated local models. This realist review sought to develop PTs that increase our understanding of what  
301 COSMHAD services might work in the UK, for whom and in what circumstances. Eleven PTs were grouped  
302 into three overlapping themes: “leadership”; “workforce” and “service delivery”.

303 UK policy ambitions of “mainstreaming” care for COSMHAD(22) requires staff to have the training and  
304 capabilities to offer treatment that addresses mental health and substance use simultaneously. The synthesis  
305 highlighted leadership was vital to this ambition. Leaders who communicated a shared vision of COSMHAD  
306 integration better facilitated workforce development, joint working, and implementation of pathways and policies.

307 A recent Health and Social Care Committee inquiry into NHS workforce burnout and resilience(102), recognised  
308 the need for compassionate, inclusive and effective leadership to develop staff skills and improve health  
309 services(103). Trzeciak et al's(104), Compassionomics framework hypothesises administrative leaders who value  
310 compassionate approaches and implement resources to augment and remove the barriers to compassionate care  
311 can improve staff wellbeing leading to better patient care and outcomes. Compassionate leadership has been  
312 shown to increase staff belonging, autonomy and contribution(44, 105) and our PTs concurred that leadership  
313 support gave staff confidence and autonomy to take a compassionate, whole-person approach to treating people  
314 with COSMHAD. Staff experiencing compassionate leadership are better able to direct their support, giving  
315 higher levels of patient satisfaction and quality of care(105) leading to improved therapeutic relationships between  
316 staff and people with COSMHAD and increased retention of staff(104).

317 In line with the SELFIE framework(44), continuous professional development was an important aspect of  
318 integrating care for COSMHAD. Staff attitudes towards COSMHAD influenced the extent to which staff  
319 regarded working with people with COSMHAD as part of their role. Our synthesis identified varying attitudes  
320 towards COSMHAD at an individual staff member (according to experience and exposure to people with  
321 COSMHAD) and organisational level (due to structural, political, and philosophical differences between mental  
322 health and substance use services). For example, low knowledge and exposure among mental health staff may  
323 lead them to perceive substance use as a "choice" that exacerbates mental health symptomology and poor  
324 compliance rather than a health problem deserving of help and compassion. Often the philosophical focus for  
325 mental health services is abstinence (a requirement for inpatient settings), with limited attention given to harm  
326 reduction strategies. The Health Stigma and Discrimination Framework recognises stigma co-occurs at multiple  
327 socio-ecological levels (including interpersonal, organisational and political levels) and can lead to poor  
328 outcomes for populations (including access to services, uptake and adherence to treatment) and health  
329 organisations (including policies and availability and quality of health services)(106).

330 Interventions must target both the drivers of stigma and shift harmful attitudes once stigma has been  
331 applied(106). This is reflected in our PTs which include training to address attitudes towards COSMHAD from  
332 pre-registration level to ongoing workforce development. NICE guidance highlights a lack of high-quality  
333 evidence on how staff training for COSMHAD can be implemented effectively(29). Our synthesis suggests  
334 where there is existing willingness to engage with COSMHAD, team-based, immersive approaches which  
335 combine formal training, ongoing supervision and clear policy can allow staff to learn through practice, leading  
336 to increased ownership and investment as staff see interventions working(54) Our PTs demonstrated this sense  
337 of ownership could lead to increased staff empathy, better therapeutic relationships and increased staff retention.  
338 As demonstrated in figure 2, there is considerable overlap in outcomes between the workforce and leadership  
339 related programme theories highlighting the multi-level action required to address COSMHAD-related  
340 stigma(106) and compassionate leadership to embed continuous professional development into wider  
341 organisational structure and culture(104).

342 In line with the SELFIE framework(44), our PTs proposed integrated care pathways with transparent  
343 communication between mental health, substance use and wider services and structural flexibility to meet the  
344 needs of people with COSMHAD. Our PTs covered first contact with services, formalised staff networks and  
345 mental health clinician led care planning. Formalisation of care pathways increased staff motivation,  
346 commitment, and confidence to provide integrated care across collaborating mental health and substance use  
347 services. In our PTs this led to consistent and less fragmented care tailored towards individual needs of people  
348 with COSMHAD, increasing their engagement and motivation to work towards their goals. This reflects the  
349 commitment in UK mental health strategies to developing trauma informed care for people with severe mental  
350 health problems.(22-25) Trauma informed approaches aim to provide people with COSMHAD with an  
351 environment that is safe, trusted, supportive, collaborative, empowering and responsive to their experiences and  
352 needs. Services which are not trauma informed risk excluding those who have experienced trauma as  
353 demonstrated in our synthesis where people with COSMHAD were too often perceived as "*system misfits*"(60)  
354 experiencing a "*ping pong effect*"(70) between services before "*falling through the net*"(62) completely. As the  
355 leadership and workforce themes demonstrate, this requires a cultural rather than behavioural shift. Training to  
356 change individual attitudes and practice alone is not sufficient, rather system-level change in service delivery  
357 supported by compassionate leadership is required to ensure integrated, effective COSMHAD care.

358 Realist reviews have several theoretical limitations. There are many stages, theories and settings associated with  
359 complex interventions and so the reviewer must prioritise particular processes, theories and settings(107), Initial



360 decisions formulating our if/then questions for theory testing mean some theoretical perspectives and literature  
361 was inevitably omitted. Only English language studies were included and studies delivered exclusively in  
362 specialist settings (for example for prisoners or people living with HIV) were excluded. Realist reviews are also  
363 limited by the nature of the available empirical evidence, which tends to favour tangible processes and easily  
364 measured outcomes(107). Much of the evidence on COSMHAD service models come from the US, and they are  
365 not always directly transferable to the UK. Drawing on this international literature allowed us to identify broad  
366 contextual areas for successful integration (leadership workforce and service delivery). We have framed our  
367 synthesis within the UK context to meet the objectives of this study, however as integration of COSMHAD is an  
368 internationally advocated approach(11), we believe they are sufficiently broad to have relevance in other  
369 countries. Finally, the intention of realist synthesis is to deliver contextual advice rather than generalizable  
370 truths(107). The synthesis focused on how COSMHAD services integrate at a service provider level. While  
371 testing these theories led to outcomes related to increased engagement and motivation for people with  
372 COSMHAD, there may be other explanations for individuals choosing not to engage with integrated services  
373 which were not explored. The expertise of people with lived experience is crucial to understanding what works  
374 best in terms of service integration for COSMHAD and is required to further refine the programme theories.  
375 This synthesis one phase of a UK wide realist study, and PTs presented here will be tested and refined through  
376 qualitative engagement with health and social care staff, people with COSMHAD and their carers.

## 377 **Conclusion**

378 This realist synthesis of international literature derived explanatory theories to describe how different contextual  
379 factors shape the mechanisms through which services for people with COSMHAD can be integrated. The  
380 synthesis sheds light on the ongoing challenges of implementing current UK policy, providing insights into how  
381 integration could work, for whom and in which circumstances. The review highlights complex challenges  
382 defining and integrating care for COSMHAD. The varied, disparate provision of COSMHAD care across the  
383 UK means our PTs do not focus on a single model of service provision but consider the context, mechanisms,  
384 and outcomes relevant across the UK health system. This includes points along the COSMHAD care pathway  
385 (recommended by NICE(29) and PHE(20)) such as assessment, care planning and case management, and  
386 activities at workforce and leadership levels. Despite UK policy(22, 26) commitment to “mainstreaming”  
387 COSMHAD care, implementation of integrated service models remains fragmentary, compounded by  
388 challenges of austerity and competitive commissioning. This realist synthesis highlights that staff willingness to  
389 treat COSMHAD remains variable, with comprehensive workforce training, supervision and policy required to  
390 increase staff investment in providing integrated care. However, changing staff behaviour is insufficient in  
391 isolation, with our synthesis demonstrating a cultural shift in compassionate leadership and system delivery is  
392 essential to ensure people with COSMHAD receive compassionate, trauma informed care that meets their needs.

393 **Contributors:** *MM conducted the searches. JH, LJ and TA screened the papers. JH extracted and analysed the*  
394 *data with support from SD. JH drafted the initial paper with contributions from SD and LJ. All authors*  
395 *contributed to editing the final manuscript. All authors had access to the study data. LH led on the study*  
396 *conceptualisation and funding with contributions from LJ, SD, AC, EG, LM, GG and HS. LJ provided*  
397 *supervision to JH.*

398 **Declaration of Interest:** *The authors declare no conflict of interest*

399 **Data sharing:** *No primary data was collected for this study*

400 **Funder:** *This research was funded by the National Institute for Health Research (NIHR) Health Technology*  
401 *Assessment Stream (Award ID: NIHR128128). The funder of the study had no role in study design, data*  
402 *collection, data analysis, data interpretation, or writing of the report.*

403

## 404 **References**

- 405 1. Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL, et al. Comorbidity of mental  
406 disorders with alcohol and other drug abuse. Results from the Epidemiologic Catchment Area (ECA)  
407 Study. *Jama*. 1990;264(19):2511-8.
- 408 2. Weaver T, Rutter D, Madden P, Ward J, Stimson G, Renton A. Results of a screening survey  
409 for co-morbid substance misuse amongst patients in treatment for psychotic disorders: Prevalence and

- 410 service needs in an inner London borough. *Social Psychiatry and Psychiatric Epidemiology: The*  
411 *International Journal for Research in Social and Genetic Epidemiology and Mental Health Services.*  
412 2001;36(8):399-406.
- 413 3. Menezes PR, Johnson S, Thornicroft G, Marshall J, Prosser D, Bebbington P, et al. Drug and  
414 Alcohol Problems among Individuals with Severe Mental Illnesses in South London. *The British*  
415 *Journal of Psychiatry.* 1996;168(5):612-9.
- 416 4. Popovic D, Benabarre A, Crespo JM, Goikolea JM, Gonzalez-Pinto A, Gutierrez-Rojas L, et  
417 al. Risk factors for suicide in schizophrenia: systematic review and clinical recommendations. *Acta*  
418 *psychiatrica Scandinavica.* 2014;130(6):418-26.
- 419 5. Witt K, van Dorn R, Fazel S. Risk factors for violence in psychosis: systematic review and  
420 meta-regression analysis of 110 studies. *PloS one.* 2013;8(2):e55942.
- 421 6. Fazel S, Buxrud P, Ruchkin V, Grann M. Homicide in discharged patients with schizophrenia  
422 and other psychoses: a national case-control study. *Schizophrenia research.* 2010;123(2-3):263-9.
- 423 7. Wright S, Gournay K, Glorney E, Thornicroft G. Dual diagnosis in the suburbs: prevalence,  
424 need, and in-patient service use. *Soc Psychiatry Psychiatr Epidemiol.* 2000;15:297-304.
- 425 8. NHS England. *The Five Year Forward View for Mental Health.* London: NHS England; 2016.
- 426 9. McCrone P, Menezes PR, Johnson S, Scott H, Thornicroft G, Marshall J, et al. Service use and  
427 costs of people with dual diagnosis in South London. *Acta psychiatrica Scandinavica.* 2000;101(6):464-  
428 72.
- 429 10. Robson D, Keen S, Mauro P. Physical Health and Dual Diagnosis. *Advances in dual diagnosis.*  
430 2008;1(1):27-32.
- 431 11. Volkow ND, Torrens M, Poznyak V, Sáenz E, Busse A, Kashino W, et al. Managing dual  
432 disorders: a statement by the Informal Scientific Network, UN Commission on Narcotic Drugs. *World*  
433 *Psychiatry.* 2020;19(3):396-7.
- 434 12. European Monitoring Centre for Drugs and Drug Addiction. *Comorbidity of substance use and*  
435 *mental disorders in Europe.* Barcelona: EMCDDA; 2015.
- 436 13. Hakobyan S, Vazirian S, Lee-Cheong S, Krausz M, Honer WG, Schutz CG. Concurrent  
437 Disorder Management Guidelines. Systematic Review. *J Clin Med.* 2020;9(8).
- 438 14. Hunt GE, Siegfried N, Morley K, Brooke-Sumner C, Cleary M. Psychosocial interventions for  
439 people with both severe mental illness and substance misuse. *The Cochrane database of systematic*  
440 *reviews.* 2019;12:CD001088.
- 441 15. Hughes E. Do complex needs require a complex "systems" response not just individual therapy?  
442 *BMJ* 2010;341:6325.
- 443 16. Mueser KT, Drake RE, Wallach MA. Dual diagnosis: a review of etiological theories.  
444 *Addictive behaviors.* 1998;23(6):717-34.
- 445 17. Petrakis M, Robinson R, Myers K, Kroes S, O'Connor S. Dual diagnosis competencies: A  
446 systematic review of staff training literature. *Addict Behav Rep.* 2018;7:53-7.
- 447 18. Hunt GE, Siegfried N, Morley K, Brooke-Sumner C, Cleary M. Psychosocial interventions for  
448 people with both severe mental illness and substance misuse. *Cochrane Database of Systematic*  
449 *Reviews.* 2019(12):CD001088.
- 450 19. Department of Health. *Mental Health Policy Implementation Guide: Dual Diagnosis Good*  
451 *Practice Guide.* Department of Health: London; 2002.
- 452 20. Public Health England. *Better Care for People with Co-occurring Mental Health and*  
453 *Alcohol/Drug Use Conditions: A Guide for Commissioners and Service Providers.* London: Public  
454 Health England; 2017.
- 455 21. Welsh Government. *Service Framework for the Treatment of People with Co-occurring Mental*  
456 *Health and Substance Misuse Problem.* Cardiff: Welsh Government; 2015.
- 457 22. NHS England. *NHS Mental Health Implementation Plan 2019/20-2023/24.* London: NHS  
458 England; 2019.
- 459 23. Scottish Government. *Mental Health Strategy: 2017-2027.* Edinburg: Scottish Government;  
460 2017.
- 461 24. Welsh Government. *Together for Mental Health Delivery Plan 2019-2022.* Cardiff: Welsh  
462 Government; 2018.
- 463 25. Department of Health. *Mental Health Strategy 2021-2031.* Belfast: Department of Health;  
464 2020.

- 465 26. HM Government. From Harm to Hope: A 10-year Drugs Plan to Cut Crime and Save Lives. In:  
466 Office TS, editor. London 2021.
- 467 27. Scottish Government. Rights, Respect and Recovery. Scotland's strategy to improve health by  
468 preventing and reducing alcohol and drug use, harm and related deaths. Edinburgh: Scottish  
469 Government; 2018.
- 470 28. Department of Health. Preventing Harm, Empowering Recovery. A Strategic Framework to  
471 Tackle the Harm from Substance Use. Belfast: Department of Health,; 2020.
- 472 29. National Institute for Health and Care Excellence (NICE). Coexisting severe mental illness and  
473 substance misuse: community health and social care services (NG58). London: NICE; 2016.
- 474 30. Cummins I. The Impact of Austerity on Mental Health Service Provision: A UK Perspective.  
475 *Int J Env Res Pub He.* 2018;15(6):1145.
- 476 31. Fantuzzi C, Mezzina R. Dual diagnosis: A systematic review of the organization of community  
477 health services. *International Journal of Social Psychiatry.* 2020:0020764019899975.
- 478 32. Pawson R, Tilley N. *Realistic Evaluation*: SAGE Publications; 1997.
- 479 33. Wong G, Greenhalgh T, Westhorp G, Buckingham J, Pawson R. RAMESES publication  
480 standards: realist syntheses. *BMC Medicine.* 2013;11(1):21.
- 481 34. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist synthesis: an introduction. *ESRC Res*  
482 *Methods Program.* 2004;2.
- 483 35. Hughes E, Bate A, Copello A, Dalkin S, Gilchrist G, Griffith E, et al. A mapping review and  
484 realist synthesis investigating the service models and systems for co-existing mental health and  
485 substance use conditions: PROSPERO; 2020 [
- 486 36. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist synthesis: an introduction. 2004.
- 487 37. Dalkin SM, Greenhalgh J, Jones D, Cunningham B, Lhussier M. What's in a mechanism?  
488 Development of a key concept in realist evaluation. *Implementation Science.* 2015;10(1):49.
- 489 38. Jagosh J, Pluye P, Wong G, Cargo M, Salsberg J, Bush PL, et al. Critical reflections on realist  
490 review: insights from customizing the methodology to the needs of participatory research assessment.  
491 *Research Synthesis Methods.* 2014;5(2):131-41.
- 492 39. Booth A, Wright J, Briscoe S. Scoping and searching to support realist approaches. In: Emmel  
493 N, Greenhalgh T, Manzano A, Monaghan M, Dalkin S, editors. *Doing realist research.* London: SAGE;  
494 2018. p. 147-66.
- 495 40. Dalkin S, Forster N, Hodgson P, Lhussier M, Carr SM. Using computer assisted qualitative  
496 data analysis software (CAQDAS; NVivo) to assist in the complex process of realist theory generation,  
497 refinement and testing. *International Journal of Social Research Methodology.* 2021;24(1):123-34.
- 498 41. Jackson SF, Kolla G. A New Realistic Evaluation Analysis Method: Linked Coding of Context,  
499 Mechanism, and Outcome Relationships. *American Journal of Evaluation.* 2012;33(3):339-49.
- 500 42. Byng R, Norman I, Redfern S. Using Realistic Evaluation to Evaluate a Practice-level  
501 Intervention to Improve Primary Healthcare for Patients with Long-term Mental Illness. *Evaluation.*  
502 2005;11(1):69-93.
- 503 43. Shearn K, Allmark P, Piercy H, Hirst J. Building Realist Program Theory for Large Complex  
504 and Messy Interventions. *International Journal of Qualitative Methods.*  
505 2017;16(1):1609406917741796.
- 506 44. Leijten FRM, Struckmann V, van Ginneken E, Czepionka T, Kraus M, Reiss M, et al. The  
507 SELFIE framework for integrated care for multi-morbidity: Development and description. *Health*  
508 *Policy.* 2018;122(1):12-22.
- 509 45. Annamalai A, Staeheli M, Cole RA, Steiner JL. Establishing an Integrated Health Care Clinic  
510 in a Community Mental Health Center: Lessons Learned. *The Psychiatric quarterly.* 2018;89(1):169-  
511 81.
- 512 46. Bell R. A multi-agency evaluation of the Leeds Dual Diagnosis care co-ordination protocol.  
513 *Advances in Dual Diagnosis.* 2014;7(4):162-84.
- 514 47. Hodges CL, Paterson S, Taikato M, McGarrol S, Crome I, Baldacchino A. SUBSTANCE  
515 MISUSE RESEARCH Co-morbid Mental Health and Substance Misuse in Scotland. *Edinburgh:*  
516 *Scottish Executive;* 2006.
- 517 48. Davidson L, Evans AC, Achara-Abrahams I, White W. Beyond co-occurring disorders to  
518 behavioral health integration. *Advances in Dual Diagnosis.* 2014;7(4):185-93.

- 519 49. Danda MC. Attitudes of health care professionals towards addictions clients accessing mental  
520 health services: What do we know and how can this be used to improve care? *Journal of Ethics in*  
521 *Mental Health*. 2012;7:1-5.
- 522 50. Barnes L, Rudge T. Co-operation and co-morbidity: managing dual diagnosis in rural South  
523 Australia. *Collegian (Royal College of Nursing, Australia)*. 2003;10(2):25-8.
- 524 51. Louie E, Giannopoulos V, Baillie A, Uribe G, Byrne S, Deady M, et al. Translating Evidence-  
525 Based Practice for Managing Comorbid Substance Use and Mental Illness Using a Multimodal Training  
526 Package. *Journal of dual diagnosis*. 2018;14(2):111-9.
- 527 52. Drake RE, Bond GR. Implementing integrated mental health and substance abuse services.  
528 *Journal of Dual Diagnosis*. 2010;6(3/4):251-62.
- 529 53. Devitt TS, Davis KE, Kinley M, Smyth J. The evolution of integrated dual disorders treatment  
530 at Thresholds: lessons learned. *American Journal of Psychiatric Rehabilitation*. 2009;12(2):93-107.
- 531 54. Blakely TJ, Dziadosz GM. Creating an agency integrated treatment program for co-occurring  
532 disorders. *American Journal of Psychiatric Rehabilitation*. 2007;10(1):1-18.
- 533 55. Hepner KA, Hunter SB, Paddock SM, Zhou AJ, Watkins KE. Training addiction counselors to  
534 implement CBT for depression. *Administration and policy in mental health*. 2011;38(4):313-23.
- 535 56. Graham HL. Implementing integrated treatment for co-existing substance use and severe  
536 mental health problems in assertive outreach teams: training issues. *Drug and alcohol review*.  
537 2004;23(4):463-70.
- 538 57. Boyle P, Wieder B. Creating and Sustaining Integrated Dual Diagnosis Treatment Programs:  
539 Some Lessons Learned in Ohio. *Journal of Dual Diagnosis*. 2007;3(2):103-10.
- 540 58. Anastas T, Waddell EN, Howk S, Remiker M, Horton-Dunbar G, Fagnan LJ. Building  
541 Behavioral Health Homes: Clinician and Staff Perspectives on Creating Integrated Care Teams. *The*  
542 *journal of behavioral health services & research*. 2019;46(3):475-86.
- 543 59. Solomon J, Fioritti A. Motivational intervention as applied to systems change: The case of dual  
544 diagnosis. *Substance Use and Misuse*. 2002;37(14):1833-51.
- 545 60. Groenkjaer M, de Crespigny C, Liu D, Moss J, Cairney I, Lee D, et al. "The Chicken or the  
546 Egg": Barriers and Facilitators to Collaborative Care for People With Comorbidity in a Metropolitan  
547 Region of South Australia. *Issues in Mental Health Nursing*. 2017;38(1):18-24.
- 548 61. Gittel JH, Weiss L. Coordination Networks Within and Across Organizations: A Multi-level  
549 Framework. *Journal of Management Studies*. 2004;41(1):127-53.
- 550 62. Adams MW. Comorbidity of mental health and substance misuse problems: a review of  
551 workers' reported attitudes and perceptions. *Journal of Psychiatric and Mental Health Nursing*.  
552 2008;15(2):101-8.
- 553 63. Mee-Lee D. Treatment planning for dual disorders. *Psychiatric Rehabilitation Skills*.  
554 2001;5(1):52-79.
- 555 64. Renner JA, Jr., Quinones J, Wilson A. Training psychiatrists to diagnose and treat substance  
556 abuse disorders. *Current psychiatry reports*. 2005;7(5):352-9.
- 557 65. Avery J, Dixon L, Adler D, Oslin D, Hackman A, First M, et al. Psychiatrists' Attitudes Toward  
558 Individuals With Substance Use Disorders and Serious Mental Illness. *Journal of Dual Diagnosis*.  
559 2013;9(4):322-6.
- 560 66. Graham HL. Coexisting severe mental health and substance use problems : developing  
561 integrated services in the UK. *Psychiatric Bulletin*. 2004;27(5):183-6.
- 562 67. Roberts BM, Maybery D. Dual diagnosis discourse in Victoria Australia: the responsiveness of  
563 mental health services. *Journal of dual diagnosis*. 2014;10(3):139-44.
- 564 68. Canaway R, Merkes M. Barriers to comorbidity service delivery: the complexities of dual  
565 diagnosis and the need to agree on terminology and conceptual frameworks. *Australian health review :*  
566 *a publication of the Australian Hospital Association*. 2010;34(3):262-8.
- 567 69. Hind A, Manley D. Stamp Out Stigma campaign: challenging attitudes to support and build a  
568 recovery-orientated ethos in substance misuse, mental health and dual diagnosis services. *Advances in*  
569 *Dual Diagnosis*. 2010;3(1):23-5.
- 570 70. Lawrence-Jones J. Dual diagnosis (drug/alcohol and mental health): service user experiences.  
571 *Practice (09503153)*. 2010;22(2):115-31.
- 572 71. Sorsa M, Greacen T, Lehto J, Astedt-Kurki P. A Qualitative Study of Barriers to Care for People  
573 With Co-Occurring Disorders. *Archives of psychiatric nursing*. 2017;31(4):399-406.

574 72. Bjorkquist C, Hansen GV. Reducing service barriers to people with dual diagnosis in Norway.  
575 Cogent Social Sciences. 2018;4(1):1561237.

576 73. Hunter SB, Watkins KE, Wenzel S, Gilmore J, Shee J, Griffin B. Training substance abuse  
577 treatment staff to care for co-occurring disorders. *Journal of Substance Abuse Treatment*.  
578 2005;28(3):239-45.

579 74. Kola LA, Kruszynski R. Adapting the Integrated Dual-Disorder Treatment Model for Addiction  
580 Services. *Alcoholism Treatment Quarterly*. 2010;28(4):437-50.

581 75. Manley DS. What helps and what hinders recovery: narratives of service users and practitioners  
582 about dual diagnosis (co-existing mental health and substance misuse problems). 2015.

583 76. Sterling S, Chi F, Hinman A. Integrating care for people with co-occurring alcohol and other  
584 drug, medical, and mental health conditions. *Alcohol research & health : the journal of the National  
585 Institute on Alcohol Abuse and Alcoholism*. 2011;33(4):338-49.

586 77. Chichester CS, Bepko C, Ogden J, Hornby H, McAuley K. Implementing an integrated system  
587 of care model in the state of Maine. *Journal of Dual Diagnosis*. 2009;5(3/4):436-46.

588 78. Wieder BL, Boyle PE, Hrouda DR. Able, willing, and ready: practitioner selection as a core  
589 component of integrated dual disorders treatment implementation. *Journal of Social Work Practice in  
590 the Addictions*. 2007;7(1/2):139-65.

591 79. Renner JA. Training Psychiatrists to Treat Dual Diagnosis Patients. *Journal of Dual Diagnosis*.  
592 2007;3(2):125-36.

593 80. Hoge MA, Morris JA, Stuart GW, Huey LY, Bergeson S, Flaherty MT, et al. A national action  
594 plan for workforce development in behavioral health. *Psychiatric Services*. 2009;60(7):883-7.

595 81. Fisher CM, McCleary JS, Dimock P, Rohovit J. Provider preparedness for treatment of co-  
596 occurring disorders: Comparison of social workers and alcohol and drug counselors. *Social Work  
597 Education*. 2014;33(5):626-41.

598 82. Drake RE, Antosca LM, Noordsy DL, Bartels SJ, Osher FC. New Hampshire's specialized  
599 services for the dually diagnosed. *New directions for mental health services*. 1991(50):57-67.

600 83. Wieder BL, Kruszynski R. The salience of staffing in IDDT implementation: One agency's  
601 experience. *American Journal of Psychiatric Rehabilitation*. 2007;10(2):103-12.

602 84. Brekke E, Lien L, Davidson L, Biong S. First-person experiences of recovery in co-occurring  
603 mental health and substance use conditions. *Advances in Dual Diagnosis*. 2017;10(1):13-24.

604 85. Jones LV, Hopson L, Warner L, Hardiman ER, James T. A Qualitative Study of Black  
605 Women's Experiences in Drug Abuse and Mental Health Services. *Affilia: Journal of Women & Social  
606 Work*. 2015;30(1):68-82.

607 86. Pinderup P, Thylstrup B, Hesse M. Critical Review of Dual Diagnosis Training for Mental  
608 Health Professionals. *International Journal of Mental Health and Addiction*. 2016;14(5):856-72.

609 87. Kay-Lambkin FJ, Baker AL, Lewin TJ. The 'co-morbidity roundabout': a framework to guide  
610 assessment and intervention strategies and engineer change among people with co-morbid problems.  
611 *Drug and alcohol review*. 2004;23(4):407-23.

612 88. Minkoff K. Developing welcoming systems for individuals with co-occurring disorders: the role  
613 of the comprehensive continuous integrated system of care model. *Journal of Dual Diagnosis*.  
614 2004;1(1).

615 89. Baldacchino A, Greacen T, Hodges CL, Charzynska K, Sorsa M, Saias T, et al. Nature, level  
616 and type of networking for individuals with dual diagnosis: A European perspective. *Drugs: Education,  
617 Prevention and Policy*. 2010;18(5):393-401.

618 90. Barreira P, Espey B, Fishbein R, Moran D, Flannery Jr RB. Linking substance abuse and serious  
619 mental illness service delivery systems: Initiating a statewide collaborative. *Journal of Behavioral  
620 Health Services and Research*. 2000;27(1):107-13.

621 91. Barrett P, Roberts S. Enhancing dual diagnosis capacities in acute inpatient nurses: a  
622 practitioner-based action research project. *Advances in Dual Diagnosis*. 2010;3(2).

623 92. E. Anderson S, Hennessy C, Cornes M, Manthorpe J. Developing inter-disciplinary and inter-  
624 agency networks: reflections on a "community of practice" approach. *Advances in Dual Diagnosis*.  
625 2013;6(3):132-44.

626 93. Biegel DE, Kola LA, Ronis RJ, Boyle PE, Delos Reyes CM, Wieder B, et al. The Ohio  
627 Substance Abuse and Mental Illness Coordinating Center of Excellence: implementation support for  
628 evidence-based practice. *Research on Social Work Practice*. 2003;13(4):531-45.

- 629 94. Clodfelter Jr RC, Albanese MJ, Baker G, Domoto K, Gui AL, Khantzian EJ. The MICA Case  
630 Conference Program at Tewksbury Hospital, Mass.: An Integrated Treatment Model. American Journal  
631 on Addictions. 2003;12(5):448-54.
- 632 95. Swinden D, Barrett M. Developing a dual diagnosis role within mental health. Nursing Times.  
633 2008;104(19):26-7.
- 634 96. Holland M. Substance use and mental health problems: meeting the challenge. British journal  
635 of nursing (Mark Allen Publishing). 1998;7(15):896-900.
- 636 97. Engelhardt MA, Hills H, Monroe M. Comprehensive, Continuous, Integrated System of Care  
637 Development: Tampa-Hillsborough County, Florida. Journal of Dual Diagnosis. 2009;5(1):110-6.
- 638 98. Bjorkquist C, Hansen GV. Coordination of services for dual diagnosis clients in the interface  
639 between specialist and community care. Journal of multidisciplinary healthcare. 2018;11:233-43.
- 640 99. Currie J. Review of dual diagnosis commissioning in the North West of England. Advances in  
641 Dual Diagnosis. 2011;4(3):135-40.
- 642 100. Graham HL, Copello A, Birchwood M, Orford J, McGovern D, Georgiou G, et al. Service  
643 innovations: Coexisting severe mental health and substance use problems: Developing integrated  
644 services in the UK. Psychiatric Bulletin. 2003;27(5):183-6.
- 645 101. Copello A, Graham H, Birchwood M. Evaluating substance misuse interventions in psychosis:  
646 the limitations of the RCT with 'patient' as the unit of analysis. Journal of Mental Health.  
647 2001;10(6):585-7.
- 648 102. Health and Social Care Committee. Workforce burnout and resilience in the NHS and social  
649 care. London: House of Commons; 2021.
- 650 103. NHS England. Developing people - Improving Care. A national framework for action on  
651 improvement and leadership development in NHS-funded services. London: NHS England; 2019.
- 652 104. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: Hypothesis and experimental  
653 approach. Med Hypotheses. 2017;107:92-7.
- 654 105. West M, Dawson J. Employee engagement and NHS performance. London: Kings Fund; 2012.
- 655 106. Stangl AL, Earnshaw VA, Logie CH, van Brakel W, C. Simbayi L, Barré I, et al. The Health  
656 Stigma and Discrimination Framework: a global, crosscutting framework to inform research,  
657 intervention development, and policy on health-related stigmas. BMC Medicine. 2019;17(1):31.
- 658 107. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist review-a new method of systematic  
659 review designed for complex policy interventions. Journal of health services research & policy.  
660 2005;10(1\_suppl):21-34.

661

662 **Panel: Final programme theories (PTs) for integrated services for Co-Occurring Serious Mental**  
663 **Health and Alcohol/Drug (COSMHAD)**

664 **Leadership and governance**

665 *PT3: encouraging collaborative case management*

666 Collaborative case management between services for people with co-occurring disorders requires both formal  
667 coordination (top-down processes and network models) and informal collaboration (willingness to work together)  
668 (context). Clear, non-conflicting care coordination protocols and referral pathways with time for collaboration  
669 built into staff schedules (mechanism –resource) will help staff feel more supported in their roles and gives them  
670 permission to build trusting relationships with other service providers while taking a pre-emptive, preventative  
671 and whole person approach to people with COSMHAD (mechanism – reasoning). This will lead to an improved  
672 organisational system for people with COSMHAD with improved consistency of care and a more individually  
673 focused approach across the continuum of care (outcomes).

674 *PT5: continuous workforce development*

675 If service leaders appreciate the need continuous and comprehensive workforce development (context) by  
676 combining didactic training to address knowledge and experiential training to practise skills (mechanism -  
677 resource) then staff will internalize compassionate, integrated values, skills and confidence to assess and respond  
678 to the needs of people with co-occurring disorders (mechanism - reasoning). This will lead to a better therapeutic

679 relationship between service users and health professionals leading to improved engagement and motivation to  
680 change (outcome).

681 *PT6: opinion leaders*

682 Dedicated, respected leaders with the authority to implement integrated treatment are needed at all levels of the  
683 organisation (from commissioning through to team leaders) to communicate a shared vision of co-occurring  
684 disorders, prioritise implementation and make and disseminate administrative and policy changes (context). These  
685 leaders will sustain awareness and expectations surrounding co-occurring disorders (mechanism – resource)  
686 leading to an organisational climate where staff feel enthusiastic, motivated and supported to implement new  
687 practices in their work (mechanism – reasoning). As a result, people with co-occurring disorders can engage with  
688 consistent, appropriate support for their condition (outcome)

689 *PT 8: coordinated care pathways*

690 Committed and accountable leaders from NHS, Local Authorities and other partner organisations (context) should  
691 support, design and consistently advance a collaborative co-ordinated care pathway which uses organisational  
692 policies, functional procedures and defined outcomes to allow mental health, substance use and other relevant  
693 service providers to support each other in providing care for people with co-occurring disorders (mechanism -  
694 resource). This coordinated pathway will lead to increased collaboration between providers through shared goals  
695 and formalised relationships (mechanism - reasoning) to deliver accessible, non-contradictory and consistent  
696 interventions, services and goal setting which will rouse and maintain people with COSMHAD’s motivation to  
697 work towards their goals and remain engaged in treatment (outcome)

698 *PT10: evaluation and quality improvement*

699 Leadership across all involved services need to develop and establish accountability (context) in order for  
700 meaningful evaluation and quality improvement measures to be put into place to evaluate the structure, process  
701 and outcomes of integration and training interventions on service delivery for co-occurring disorders (mechanism  
702 – resource). This will ensure that commissioners, service managers and practitioners feel the work they do is  
703 valued (mechanism -reasoning) and continue to make incremental progress in improving services by building on  
704 existing strengths and identifying priorities leading to better insights into the quality of care (outcome)

705 *PT11: Recruiting and retaining talented staff*

706 Service commissioners from both mental health and substance use services need to work jointly (context) to  
707 commit financial resources and organisational workforce policies (mechanism – resource 1) to ensure staff with  
708 the requisite skills, knowledge and values for treating those with co-occurring disorders are recruited and retained  
709 into services through appropriate selection, supervision and professional development (mechanism – resource 2).  
710 This will ensure that skilled staff feel encouraged, secure and legitimised in their posts (mechanism - reasoning)  
711 leading to more effective, better quality and uninterrupted therapeutic relationships (outcome)  
712

713 **Workforce**

714 *PT2: Staff attitudes*

715 Successful collaboration between mental health and substance use services to address judgemental staff attitudes  
716 towards people with COSMHAD requires desire to reconcile political, structural, and philosophical differences  
717 between services (context). A team wide response to training is needed to address staff beliefs and attitudes  
718 supported by clear policies and procedures to shift service philosophy (mechanism – resource). A team-based  
719 training approach leads to increased feelings of ownership and involvement among staff who will become less  
720 sceptical and more invested as they see people with COSMHAD responding positively to interventions  
721 (mechanism – reasoning). This will result in enhanced staff empathy and better therapeutic relationships with  
722 people with COSMHAD (outcomes).

723 *PT4: continuous exposure from undergraduate level*

724 Staff are often ill-prepared to treat people with COSMHAD due to a lack of inclusion of bio-psycho-social  
725 perspectives as part of formal qualifications in substance use, and lack of supervised exposure on  
726 undergraduate/postgraduate curricula. Even where staff have been trained in particular skills (e.g. motivational  
727 interviewing), they do not always make use of these skills in practice (context). For those professionals  
728 undertaking clinical qualifications an immersion model of training should begin at undergraduate clinical rotation  
729 and be maintained through core competencies for professional development and progression (mechanism -  
730 resource). This continuous supervision of practice will align educational targets to real-time problems, foster  
731 communication between health professionals and allow staff to learn from practice and experience (mechanism -  
732 reasoning). This emphasis on professional growth in practice improve empathy for the daily experiences of people  
733 with COSMHAD (outcomes).

## 734 **Service delivery**

### 735 *PT1: first contact and assessment*

736 If staff across all first-contact services for people with co-occurring mental health and substance use issue have  
737 clear awareness that people with COSMHAD are the expectation and their responsibility to assess and refer them  
738 into suitable treatment (context), then individuals will have a more satisfying and structured first contact with  
739 services (mechanism- resource). people with co-occurring disorders will have less difficulties in entering  
740 appropriate services (mechanism – reasoning) thus leading to increased optimism, confidence and willingness to  
741 engage in treatment (outcome).

### 742 *PT7: formalised networking opportunities*

743 Formalised, structured and sustained opportunities for practitioners working with people with COSMHAD to  
744 meet, communicate and build relationships and take action (e.g. through a network) (context) will lead to increased  
745 awareness of other services' collective contributions, opportunities for peer support and a multidisciplinary ethos  
746 (mechanism – resource). This will increase staff motivation, confidence and commitment to work collaboratively  
747 when treating people with co-occurring disorders (mechanism – reasoning) leading to improved and more  
748 welcoming care coordination, better provision of stage appropriate interventions including more immediate  
749 referrals, assessments and care planning (outcome).

### 750 *PT9: mental health led services*

751 High prevalence of people with COSMHAD within mental health services suggests their needs should be  
752 addressed in a mental health service setting with additional joint working from other services as needed (context).  
753 Having mental health clinicians responsible for individual's care plan (mechanism - resource) means clinicians  
754 will increase their skills and competencies in using empirically supported treatment with measurable outcomes  
755 for co-occurring disorders. (mechanism - reasoning). By addressing the relationship between substance use and  
756 mental health simultaneously, people with COSMHAD will experience a more consistent and flexible approach  
757 to symptom reduction with tailored, non-conflicting goals (outcome)

758

759

760

761

762

763

764

765

766

767

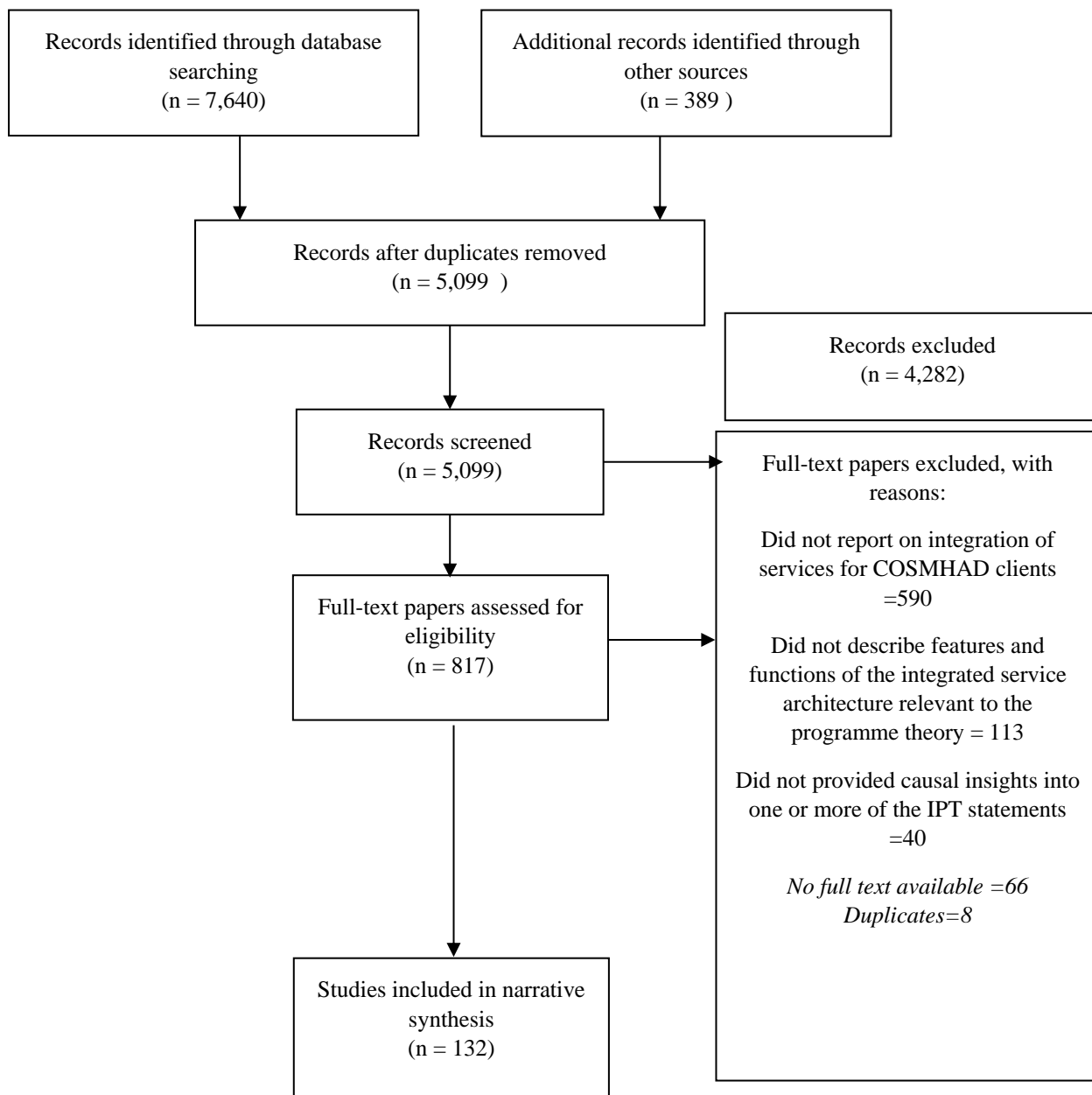


768 **Figure 1: Adapted PRISMA diagram of the realist synthesis searching and screening**

769

775

**Identification**



776

**Screening**

782

**Eligibility**

788

**Included**

794

795

796

797

798

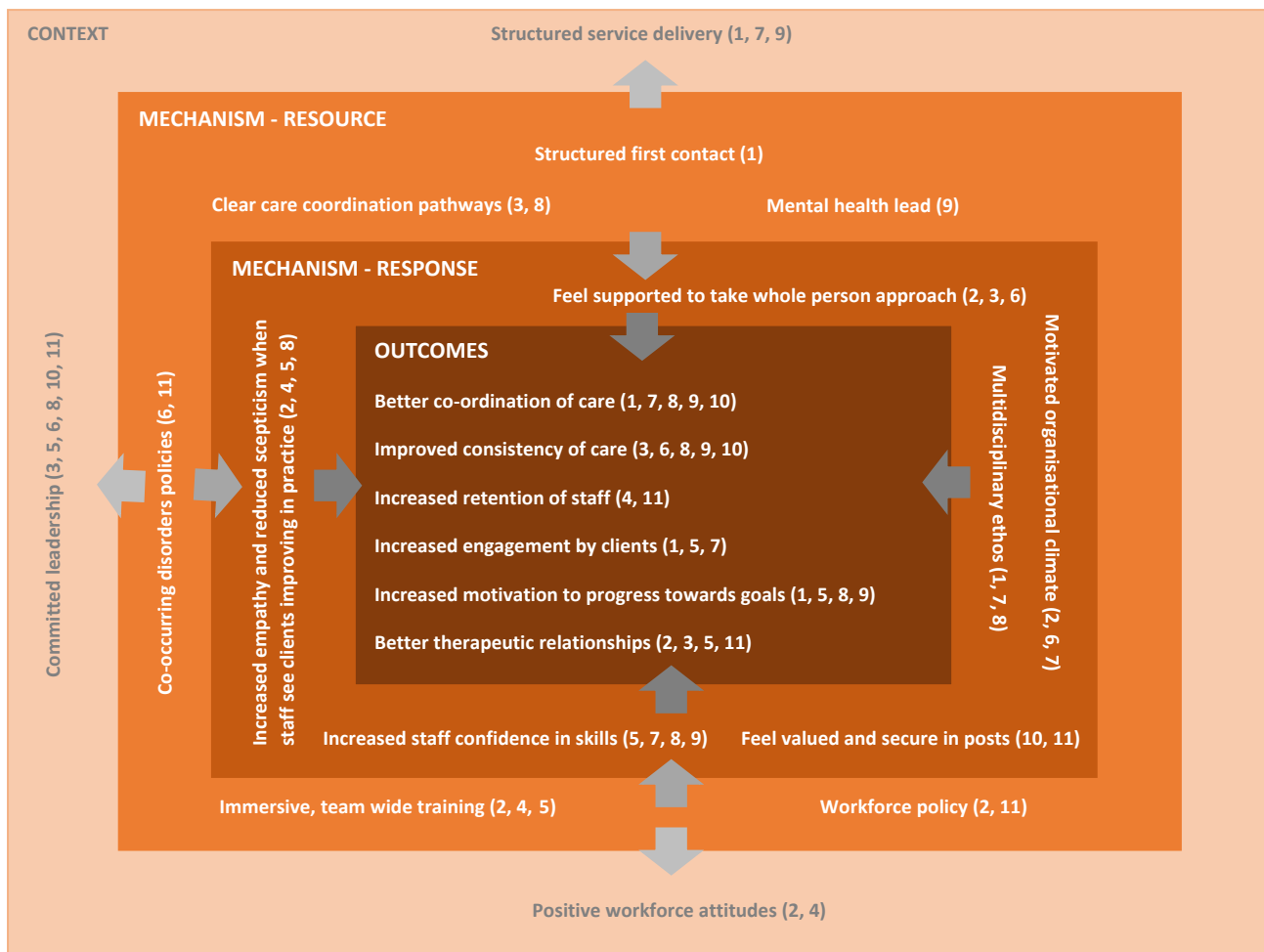
799

800

801

802 **Figure 2: The overall programme theory for integrated services for COSMHAD**

803



804

805

806

807

808

809

810

811

812

813

814

815

816

817 **Table 1: Papers including in the realist synthesis**

Authors (date)	Country	Study type	Co-occurring serious mental illness and drug/alcohol (COSMHAD) model setting, described (if relevant)	Programme Theory (PT) data extracted from paper
Adams (2008) (62)	UK, US, Australia	Literature Review	n/a	PT1: first contact and assessment PT2: staff attitudes PT5: continuous workforce development
Anastas et al (2019) (58)	US	Qualitative (interviews)	Behavioural Health Home Learning Collaborative	PT3: encouraging collaborative case management PT4: continuous exposure from undergraduate level PT5: continuous workforce development PT6: opinion leaders PT7: formalised networking opportunities PT10: evaluation and quality improvement PT11: recruiting and retaining talented staff
Annamalai et al (2018) (45)	US	Implementation processes	The Connecticut Mental Health Center Wellness Center	PT3: encouraging collaborative case management PT4: continuous exposure from undergraduate level PT5: continuous workforce development PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways PT10: evaluation and quality improvement
Avery et al (2013) (65)	US	Quantitative (online survey)	n/a	PT2: staff attitudes
Baldacchino (2007) (47)	Scotland	Literature review	n/a	PT5: continuous workforce development
Baldacchino et al (2010) (89)	France, Finland, Scotland, Poland, England, Denmark	Qualitative survey	Integrated Services Aimed at Dual Diagnosis and Optimal Recovery from Addiction (ISADORA) Study	PT7: formalised networking opportunities PT8: coordinated care pathways
Barnes et al (2002) (108)	England	Quantitative (survey)	Hastings Community Mental Health Team	PT1: first contact and assessment PT7: formalised networking opportunities
Barnes and Rudge (2003) (50)	Australia	Qualitative (interviews)	Rural Mental Health Services and Drug and Alcohol services in rural South Australia	PT1: first contact and assessment PT3: encouraging collaborative case management PT6: opinion leaders

Barreira et al (2000) (90)	US	Implementation Processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT3: encouraging collaborative case management PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways
Barrett (2009) (109)	England	Practitioner Action Research	Inpatient Mental Health Team	PT1: first contact and assessment PT5: continuous workforce development PT6: opinion leaders
Barrett and Roberts (2010) (91)	England	Practitioner Action Research	Inpatient Mental Health Team	PT7: formalised networking opportunities
Bell (2014) (46)	England	Quantitative (survey)	Leeds Dual Diagnosis Network	PT1: first contact and assessment PT3: encouraging collaborative case management PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways
Biegel et al (2003) (93)	US	Implementation Processes	Ohio Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT7: formalised networking opportunities
Biegel et al (2007) (110)	US	Implementation Processes	Ohio Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT6: opinion leaders PT10: evaluation and quality improvement
Bjorkquist and Hansen (2018) (98)	Norway	Qualitative (interviews)	Home-based mental health services	PT2: staff attitudes PT3: encouraging collaborative case management PT4: continuous exposure from undergraduate level
Bjorkquist and Hansen (2018) (72)	Norway	Qualitative (focus groups)	n/a	PT3: encouraging collaborative case management PT7: formalised networking opportunities PT8: coordinated care pathways
Blakely and Dziadosz (2007) (54)	US	Implementation processes	Community Treatment and Rehabilitation (CT&R)	PT1: first contact and assessment PT2: staff attitudes PT4: continuous exposure from undergraduate level PT5: continuous workforce development PT6: opinion leaders
Bonham et al (2014) (111)	US	Mixed methods (survey and interviews)	New Mexico integrated treatment for cooccurring mental health and substance use disorders	PT3: encouraging collaborative case management PT6: opinion leaders

Boyle and Wieder (2007) (57)	US	Implementation processes	Ohio Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT11: Recruiting and retaining talented staff
Boyle and Kroon (2006) (112)	US, Netherlands	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development
Brekke et al (2018) (84)	Norway	Qualitative (interviews)	n/a	PT2: staff attitudes
Broner et al (2001) (113)	US	Implementation processes	n/a	PT8: coordinated care pathways
Brown et al (2005) (114)	US	Implementation processes	PROTOTYPES Systems Change Center	PT7: formalised networking opportunities
Brunette (2008) (115)	US	Mixed methods (secondary data and interviews)	Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT6: opinion leaders PT11: Recruiting and retaining talented staff
Burnam (2006) (116)	US	Implementation processes	n/a	PT7: formalised networking opportunities
Canaway and Merkes (2010) (68)	Australia	Literature review	n/a	PT2: staff attitudes PT8: coordinated care pathways
Carey et al (2000) (117)	US	Qualitative (focus groups)	n/a	PT2: staff attitudes
Carter et al (2006) (118)	US	Qualitative (interviews)	n/a	PT6: opinion leaders
Chandler (2009) (119)	US	Mixed methods (fidelity scale and interviews)	Integrated Dual Disorders Treatment (IDDT)	PT3: encouraging collaborative case management PT5: continuous workforce development PT6: opinion leaders PT8: coordinated care pathways
Chichester et al (2009) (77)	US	Implementation processes	Co-occurring collaborative service Maine (CCSME)	PT1: first contact and assessment PT2: staff attitudes PT3: encouraging collaborative case management PT5: continuous workforce development PT6: opinion leaders PT10: evaluation and quality improvement
Clodfelter et al (2003) (94)	US	Implementation processes	Mentally Ill Chemically Abusing (MICA) Program, Tewksbury Hospital	PT7: formalised networking opportunities

Connolly et al (2015) (120)	Ireland	Participatory Action Research	Dual Diagnosis Service, Cork	PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways
Connolly et al (2010) (121)	Ireland	Implementation processes	Dual Diagnosis Service, Cork	PT7: formalised networking opportunities
Copello et al (2001) (101)	England	Implementation processes (RCT)	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT5: continuous workforce development PT9: mental health led services
Curie et al (2005) (122)	US	Implementation processes	Comprehensive Continuous Integrated System of Care (CCISC)	PT1: first contact and assessment PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways PT10: evaluation and quality improvement
Danda (2012) (49)	Canada	Literature Review	n/a	PT2: staff attitudes PT3: encouraging collaborative case management PT4: continuous exposure from undergraduate level PT5: continuous workforce development
Dausey et al (2007) (123)	US	Implementation processes	Co-occurring State Incentive Grant (COSIG) initiative	PT7: formalised networking opportunities PT8: coordinated care pathways
Davidson et al (2014) (48)	US	Literature Review	n/a	PT3: encouraging collaborative case management
Davis et al (2012) (124)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development
Devitt et al (2009) (53)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT6: opinion leaders PT10: evaluation and quality improvement
Drake et al (1991) (82)	US	Implementation processes	New Hampshire Specialised Dual Diagnosis Service	PT2: staff attitudes PT5: continuous workforce development
Drake and Bond (2010) (52)	US	Literature Review	n/a	PT5: continuous workforce development
Drake et al (2001) (125)	US	Literature review	n/a	PT2: staff attitudes PT6: opinion leaders PT8: coordinated care pathways
Anderson et al (2013) (92)	England	Implementation processes	Communities of Practise Model	PT7: formalised networking opportunities

Edland-Gryt and Skatvedt (2013) (126)	Norway	Qualitative (participant observation, interviews, focus groups)	n/a	PT1: first contact and assessment
Edwards (2011) (127)	England	Implementation processes	Dual Diagnosis Nurse	PT5: continuous workforce development PT6: opinion leaders PT11: Recruiting and retaining talented staff
Engelhardt et al (2009) (97)	US	Implementation processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT7: formalised networking opportunities PT8: coordinated care pathways
Evans-Lacko and Thornicroft (2010) (128)	UK	Literature Review	n/a	PT2: staff attitudes
Fisher et al (2014) (81)	US	Quantitative (survey)	n/a	PT1: first contact and assessment PT4: continuous exposure from undergraduate level
Georgeson (2009) (129)	England	Implementation processes	The Matrix Model	PT3: encouraging collaborative case management PT8: coordinated care pathways
Graham (2004) (56)	England	Quasi-experimental design	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT2: staff attitudes PT5: continuous workforce development
Graham et al (2006) (130)	England	Quasi-experimental design	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT5: continuous workforce development
Graham et al (2003) (100)	UK	Implementation processes	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT5: continuous workforce development PT9: mental health led services
Groenkjaer et al (2017) (60)	Australia	Qualitative (interviews)	Rural Mental Health Services and Drug and Alcohol Services in Northern Australia	PT1: first contact and assessment PT3: encouraging collaborative case management PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Guerrero et al (2015) (131)	US	Quantitative (online survey)	n/a	PT5: continuous workforce development PT6: opinion leaders PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Guest and Chrisp (2015) (132)	England	Mixed methods (interviews and survey)	The Leeds Dual Diagnosis Network	PT3: encouraging collaborative case management PT5: continuous workforce development PT8: coordinated care pathways

Haskell et al (2016) (133)	Canada	Qualitative (interviews)	n/a	PT2: staff attitudes PT8: coordinated care pathways
Heckman et al (2004) (134)	US	Implementation processes	Allies programme for women	PT5: continuous workforce development PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Hepner et al (2011) (55)	US	Quasi-experimental design	Building Recovery by Improving Goals, Habits and Thoughts (BRIGHT) study	PT5: continuous workforce development
Hill et al (2009) (135)	England	Implementation processes	Substance misuse ward	PT5: continuous workforce development PT8: coordinated care pathways
Hind and Manley (2010) (69)	England	Implementation processes	Stamp out Stigma Campaign in substance misuse services	PT2: staff attitudes
Hodges et al (2006) (47)	Scotland	Qualitative (interviews)	n/a	PT2: staff attitudes PT3: encouraging collaborative case management PT5: continuous workforce development PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Hoge et al (2009) (80)	US	Implementation processes	Annapolis Coalition	PT4: continuous exposure from undergraduate level PT5: continuous workforce development
Holland (1998) (96)	England	Implementation processes	Manchester Dual Diagnosis Group	PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways
Holland et al (2012) (136)	England	Implementation processes	Manchester Dual Diagnosis Group	PT7: formalised networking opportunities
Hughes (2007) (137)	England	Implementation processes	Pan-London Dual Diagnosis Training Project	PT5: continuous workforce development
Hughes et al (2008) (138)	England	Randomised Controlled Trial	Co-morbidity (COMO) dual diagnosis study	PT1: first contact and assessment PT2: staff attitudes
Hunter et al (2005) (73)	US	Implementation processes	Intervention in outpatient substance use programmes	PT1: first contact and assessment PT2: staff attitudes PT5: continuous workforce development PT7: formalised networking opportunities
Huntington et al (2005) (139)	US	Implementation processes	Women, Co-occurring disorders and violence study	PT2: staff attitudes PT3: encouraging collaborative case management PT5: continuous workforce development



				PT7: formalised networking opportunities PT8: coordinated care pathways
Jerrell et al (2000) (140)	US	Implementation processes	Dual Diagnosis Day Treatment Programme (DDTTP)	PT1: first contact and assessment PT11: Recruiting and retaining talented staff
Jones et al (2015) (85)	US	Qualitative (focus groups)	n/a	PT1: first contact and assessment PT2: staff attitudes PT5: continuous workforce development
Kavanagh et al (2000) (141)	Australia	Quantitative (survey)	n/a	PT1: first contact and assessment PT4: continuous exposure from undergraduate level PT7: formalised networking opportunities
Kay-Lambkin et al (2004) (87)	Australia	Literature Review	n/a	PT1: first contact and assessment PT4: continuous exposure from undergraduate level PT8: coordinated care pathways
Kikkert et al (2018) (142)	The Netherlands	Randomised Controlled stepped-wedge cluster trial	Integrated Dual Disorders Treatment (IDDT)	PT2: staff attitudes PT4: continuous exposure from undergraduate level
Kilbourne et al (2010) (143)	US	Literature Review	n/a	PT10: evaluation and quality improvement
Kirst et al (2017) (144)	Canada	Qualitative (interviews)	n/a	PT1: first contact and assessment PT3: encouraging collaborative case management PT4: continuous exposure from undergraduate level PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Kola and Kruszynski (2010) (74)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT2: staff attitudes PT3: encouraging collaborative case management PT11: Recruiting and retaining talented staff
Kruszynski and Boyle (2006) (145)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT6: opinion leaders PT8: coordinated care pathways
Lawrence-Jones (2010) (70)	England	Qualitative (interviews)	n/a	PT1: first contact and assessment PT2: staff attitudes
Lee et al (2013) (146)	Australia	Literature review	n/a	PT5: continuous workforce development PT8: coordinated care pathways
Louie et al (2018) (51)	Australia	Implementation processes	Pathways to Comorbidity Care (PCC) training programme	PT5: continuous workforce development

Lowe and Abou-Saleh (2004) (147)	England	Literature Review	n/a	PT1: first contact and assessment
MacGabhann et al (2010) (148)	Ireland	Literature Review	n/a	PT1: first contact and assessment PT2: staff attitudes
Manley (2005) (75)	England	Implementation processes	Nottingham Dual Diagnosis Team	PT2: staff attitudes PT3: encouraging collaborative case management
Maslin et al (2009) (149)	England	Quantitative (survey)	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT7: formalised networking opportunities PT8: coordinated care pathways
Mason et al (2017) (150)	Canada	Quantitative (survey)	n/a	PT5: continuous workforce development PT7: formalised networking opportunities
McCallum et al (2015) (151)	n/a	Systematic Review	n/a	PT8: coordinated care pathways
Mee-Lee (2001) (63)	US	Commentary	n/a	PT4: continuous exposure from undergraduate level
Mehr (2001) (152)	US	Literature Review	n/a	PT9: mental health led services
Mericle et al (2007) (153)	US	Qualitative (focus groups)	n/a	PT4: continuous exposure from undergraduate level PT5: continuous workforce development
Minkoff (1991) (154)	US	Implementation processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT1: first contact and assessment PT4: continuous exposure from undergraduate level PT9: mental health led services
Minkoff (2001) (155)	US	Implementation processes	The Choate Dual Diagnosis Case Rate Program	PT4: continuous exposure from undergraduate level
Minkoff (2001) (156)	US	Implementation processes	The Choate Dual Diagnosis Case Rate Program	PT1: first contact and assessment PT8: coordinated care pathways PT10: evaluation and quality improvement
Minkoff (2006) (157)	US	Commentary	n/a	PT8: coordinated care pathways
Minkoff and Cline (2004) (158)	US	Implementation processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT1: first contact and assessment PT5: continuous workforce development PT6: opinion leaders PT8: coordinated care pathways
Minkoff and Cline (2005) (159)	US	Implementation processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT1: first contact and assessment PT6: opinion leaders PT8: coordinated care pathways

Minkoff and Cline (2006) (160)	US	Implementation processes	The Comprehensive, Continuous and Integrated System of Care (CCISC)	PT8: coordinated care pathways
Minshall et al (2019) (161)	n/a	Scoping Review	n/a	PT5: continuous workforce development PT6: opinion leaders PT7: formalised networking opportunities PT8: coordinated care pathways
Minyard et al (2019) (162)	Ireland	Rapid realist synthesis	n/a	PT5: continuous workforce development PT6: opinion leaders PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Ness et al (2014) (163)	Norway	Qualitative (action research)	n/a	PT2: staff attitudes
Novotna (2013) (164)	Canada	Qualitative (interviews)	n/a	PT3: encouraging collaborative case management PT9: mental health led services PT11: Recruiting and retaining talented staff
Page (2011) (165)	England	Qualitative (focus groups and interviews)	n/a	PT6: opinion leaders PT8: coordinated care pathways
Petrakis et al (2018) (17)	n/a	Systematic review	n/a	PT3: encouraging collaborative case management PT5: continuous workforce development
Pinderup (2018) (166)	Denmark	Qualitative (interviews)	n/a	PT3: encouraging collaborative case management PT8: coordinated care pathways PT9: mental health led services
Pinderup et al (2016) (86)	Denmark	Systematic Review	n/a	PT1: first contact and assessment PT5: continuous workforce development
Priester et al (2016) (167)	n/a	Literature Review	n/a	PT2: staff attitudes
Rapp et al (2008) (168)	US	Qualitative (interviews)	Integrated Dual Disorders Treatment (IDDT)	PT5: continuous workforce development PT6: opinion leaders PT7: formalised networking opportunities
Reilly et al (2019) (169)	Australia	Quantitative (secondary data analysis)	n/a	PT1: first contact and assessment

Renner (2007) (79)	US	Implementation processes	Boston University Medical Center Dual Diagnosis Training Model	PT4: continuous exposure from undergraduate level
Renner et al (2005) (64)	US	Implementation processes	Boston University Medical Center Dual Diagnosis Training Model	PT4: continuous exposure from undergraduate level
Ridgely et al (1998) (170)	US	Quantitative (survey)	Maine Interagency Collaboration in Services for People With Co-Occurring Mental Illness and Substance Use Disorder	PT7: formalised networking opportunities PT8: coordinated care pathways
Roberts and Maybery (2014) (67)	Australia	Qualitative (interviews)	n/a	PT2: staff attitudes
Roussy et al (2015) (171)	Australia	Controlled before-and-after study design	Consumer-led training by people with dual diagnosis in Victoria	PT1: first contact and assessment
Saunders and Robinson (2002) (172)	Australia	Literature Review	n/a	PT4: continuous exposure from undergraduate level
Sciacca and Thompson (1996) (173)	US	Implementation processes	Sciacca Treatment Model for Dual Diagnosis (MIDAA)	PT5: continuous workforce development PT6: opinion leaders
Sims et al (2003) (174)	Wales	Implementation processes	Triangular Treatment Paradigm, Gwynedd	PT6: opinion leaders
Sitharthan et al (1999) (175)	Australia	Implementation processes	Integrated Drug and Alcohol Intervention (IDAI), Cumberland	PT1: first contact and assessment PT8: coordinated care pathways
Solomon and Fioritti (2002) (59)	Italy	Implementation processes	n/a	PT1: first contact and assessment PT2: staff attitudes PT7: formalised networking opportunities PT8: coordinated care pathways PT11: Recruiting and retaining talented staff
Sorsa et al (2017) (71)	Finland	Qualitative (interviews)	n/a	PT2: staff attitudes PT5: continuous workforce development PT8: coordinated care pathways PT11: Recruiting and retaining talented staff

Sterling et al (2011) (76)	US	Literature Review	n/a	PT2: staff attitudes PT8: coordinated care pathways
Swinden and Barrett (2008) (95)	UK	Implementation processes	County Durham Dual Diagnosis Worker	PT2: staff attitudes PT6: opinion leaders PT7: formalised networking opportunities
Sylvain and Lamothe (2013) (176)	n/a	Systematic Review	n/a	PT10: evaluation and quality improvement
Szerman et al (2017) (177)	n/a	Systematic Review	n/a	PT4: continuous exposure from undergraduate level
Tippier and Parker (2008) (178)	England	Implementation processes	Dual Diagnosis Specialist Worker Teams, Westminster	PT2: staff attitudes PT6: opinion leaders PT9: mental health led services PT11: Recruiting and retaining talented staff
Tobin and Boulton (2009) (179)	England	Implementation processes	Combined Psychosis and Substance Misuse Programme (COMPASS)	PT1: first contact and assessment
Torrey et al (2002) (180)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT6: opinion leaders PT7: formalised networking opportunities
Watt et al (2013) (181)	Australia	Implementation processes	The Complex Needs Assessment Panel and Integrated Support (CNAPIS)	PT7: formalised networking opportunities
Welch and Mooney (2001) (182)	Australia	Implementation processes	Mental Health and Alcohol and Drug Services (MHADS)	PT1: first contact and assessment
Wendler and Murdock (2006) (183)	US	Implementation processes	n/a	PT2: staff attitudes
Wieder et al (2007) (78)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT2: staff attitudes PT6: opinion leaders
Wieder and Kruszynski (2007) (83)	US	Implementation processes	Integrated Dual Disorders Treatment (IDDT)	PT2: staff attitudes PT6: opinion leaders
Wiland (2008) (184)	US	Implementation processes	Community Support and Treatment Services (CSTS), Michigan	PT6: opinion leaders PT8: coordinated care pathways

|819  
820