

## Data supplement

Table DS1 Aspects of care assessed by the Quality Indicator for Rehabilitative Care (QUIRC)	
Aspects of care	Individual QUIRC items
Unit characteristics	Run by health/Social Services/voluntary sector/independent sector Based in hospital/hospital grounds/community Has sign indicating it is a mental health unit Level of support provided (</>24 hours) Max length of stay Number of years the unit has been open in its current form Number of beds/% occupied Patient gender ratio Number (%) involuntarily detained patients
Staffing (full-time equivalent)	Psychiatrist/s Psychologist/s Occupational therapist/s Nurses Support worker/s Social worker/s Arts therapist/s Volunteer/s Service user/s (and whether on payroll)
Built environment	Condition of the outside of the building Condition of the decor indoors General cleanliness indoors Access to outside space: garden/patio/balcony/yard Resources for patients provided: newspaper/computer/telephone Single/shared bedrooms Patients choose décor and furniture/soft furnishings for their room Patients have access to lockable storage Bedrooms/bathrooms are single sex Lock on bathroom/toilet doors Set time for visitors Room for visitors to use Non-detained patients have key to front door Patients have key to their bedroom Meals are cooked in central kitchen Quality of cooked meals Choice of meals Facilities for making meal/snack Patients usually prepare own meals Facilities for patients to do own laundry Facilities for patients with physical disabilities
Staff training in past 12 months	Patients' rights; mental health law; communication skills; recovery-based practice; adverse incident reporting; de-escalation techniques; restraint; talking therapies; family work; health promotion; smoking cessation; substance misuse; vocational rehabilitation
Staff turnover	Number of permanent staff who have left the unit in past 2 years
Staff attitude to patients' recovery	How hopeful patients will move on in next 2 years Estimate of number (%) patients who will move on in next 2 years Number (%) patients who have moved on in past 2 years
Service user needs	Estimate of levels of assistance patients require
Degree of activities of daily living support provided	Self-care/cleaning/cooking/shopping/budgeting/laundry
Ethos of unit	To assist patients to become more independent/to provide care
Care planning	All patients have allocated worker Patients have regular one-to-one meetings with allocated worker Unit uses individualised care plans Patients involved in drawing up their care plans Family involved in drawing up their relative's care plans Other community agencies involved in drawing up patients' care plans Patients' priorities discussed with them before care review meeting to ensure included in agenda Patients attend their care review meetings Care review meetings are multidisciplinary
Service user involvement	Meeting for patients with staff about the running of facility (and frequency of meeting) Degree to which patients influence decision making in running of unit
Medication	Monitoring of therapeutic and side-effects of medication Degree of support given to help patients manage medication Number (%) patients receiving typical and atypical antipsychotic medications Number (%) patients receiving clozapine Number (%) patients receiving >2 antipsychotic medications Degree of patients' influence and involvement in choice of medication and dose Whether unit uses written information/groups/expert talks to help with psychoeducation

(continued)

<b>Table DS1 (continued)</b>	
<b>Aspects of care</b>	<b>Individual QuIRC items</b>
Physical health	Staff support patients to access general practitioner Staff support patients with smoking cessation/dietary advice/accessing exercise/sexual health/dental care Unit arranges/carries out annual general health check-ups
Dealing with challenging behaviour	Unit has written protocol for restraint/seclusion Step-wise protocol starting with noticing early signs of agitation, de-escalation, use of oral medication before restrain/seclusion/intramuscular medication Staff record incident and review continuing need for restraint/seclusion Debriefing meeting/s for staff and patients after incident Number of episodes of restraint/seclusion in past 3 months
Family and carer support	Number of families involved in patients'/residents' care Whether staff have meetings with patients and their families Whether families invited to patients' care review meetings Number staff trained in family psychoeducation techniques Number families received psychoeducation past 12 months
Cognitive-behavioural therapy (CBT)	Number staff trained in CBT Number patients receiving CBT past 12 months Number of CBT appointments usually offered
Vocational rehabilitation	Number patients attending: sheltered/supported/voluntary/mainstream employment Number patients attending course and whether in mainstream college/university Number patients/residents who have had paid employment past 12 months
Activities	Mean hours per day patients spend doing planned activities Number (%) patients difficult to engage in activities Unit's links with local community resources (e.g. cinemas, gyms, cafes) to facilitate social inclusion Standard or individually tailored activity programme provided Number (%) patients regularly taking part in activities in the unit/community
Patients' autonomy to make decisions	Patients decide: what time they want to wake up/have meals/go to bed/how they spend their money/time off the unit/how many cigarettes and alcohol they consume/whether they stay overnight elsewhere/have a consensual sexual relationship
Social network	Number (%) patients with friends who are not mental health service users
Access to advocacy, civil and legal advice	Availability and number of patients who have used advocacy/legal advice/interpreter/welfare rights advice in past 12 months
Voting	Number (%) patients who will be supported to vote in the next election
Staff supervision	All clinical staff have a supervisor Frequency of individual staff supervision Access to staff group supervision and frequency
Governance	Frequency of external regulatory inspections Case records kept in locked environment Formal complaints procedure Policy for abuse, aggression, bullying from staff towards patients
Manager's view overall	Whether the manager would be happy for a close relative to receive care in the unit

Table DS2 Mental health rehabilitation unit characteristics					
	n (%)			Mean (s.d.)	Median (IQR)
	No access	Access outside unit	Works in unit		
Unit location <sup>a</sup>					
Inner city	26 (20)				
Suburbs	96 (72)				
Rural area	11 (8)				
Unit type <sup>a</sup>					
Hospital ward	15 (11)				
Community based	79 (59)				
Within hospital grounds	39 (29)				
Unit has maximum length of stay <sup>a</sup>	27 (20)			1.7 (0.5)	
Years					
Staffing <sup>b</sup>					
Psychiatrist	0	38 (30)	89 (70)		
Clinical psychologist	21 (17)	65 (51)	41 (32)		
Occupational therapist	13 (10)	21 (17)	93 (73)		
Nurse	0	0	127 (100)		
Support worker	0	0	127 (100)		
Social worker	27 (21)	93 (73)	7 (6)		
Volunteer	67 (53)	41 (32)	19 (15)		
Arts therapist		66 (52)	53 (42)	8 (6)	
Ex-service user/s work in unit	40 (31)				
Ex-service user/s on payroll (n = 37)	24 (65)				
Years unit open				10 (6)	
Beds					
Beds available in the unit				14 (5)	
Beds occupied				13 (5)	
% beds occupied				91 (12)	
New admissions past 12 months				16 (17)	10 (6–19)
From acute wards				9 (8)	6 (3–11)
From community				5 (13)	1 (0–3)
From low secure units				1 (2)	1 (0–1)
From another rehabilitation unit				1 (2)	0 (0–2)
Unit manager views on service user functioning (n = 132)					
% service users able to do most things without assistance				48 (31)	41 (25–74)
% service users able to do some things without assistance				38 (29)	33 (19–50)
% service users able to do very little without assistance				14 (17)	9 (0–25)
% service users who are difficult to engage with				34 (23)	29 (19–47)
Unit manager estimates of service user activities and interventions					
% families receiving psychoeducation (n = 128)				10 (21)	0 (0–12)
% service users receiving CBT (n = 124)				14 (27)	0 (0–18)
Hours per day service users spend doing planned activity				4 (1.6)	4 (3–5)
% service user who regularly participate in activities on unit				76 (24)	80 (63–100)
% service users who regularly participate in activities in community				70 (31)	75 (47–100)
Local supported accommodation beds					
Nursing homes				18 (19)	14 (2–30)
Residential care homes				44 (58)	22 (1–75)
24-hour supported tenancies				30 (77)	13 (1–30)
<24-hour supported tenancies				38 (30)	40 (10–66)
Floating outreach				37 (83)	20 (2–36)
Discharges in last 12 months					
Nursing homes				<1 (1)	0 (0–1)
Residential care homes				1 (1)	1 (0–2)
24-hour supported tenancies				2 (3)	1 (0–3)
<24-hour supported tenancies				1 (3)	0 (0–2)
Floating outreach				1 (2)	0 (0–1)
Other				4 (8)	1 (0–3)
Out of area placement				1 (1)	0 (0–1)
Service users ready for discharge, awaiting vacancy in suitable accommodation				2 (2)	2 (1–3)
QuIRC domain scores (possible range 1–100%) <sup>a</sup>					
Living environment				73 (10)	
Therapeutic environment				68 (6)	
Treatments and interventions				62 (6)	
Self-management and autonomy				73 (9)	
Recovery-based practice				71 (9)	
Social inclusion				63 (12)	
Human rights				75 (8)	

a. N = 133.

b. N = 127.

CBT, cognitive-behavioural therapy; QuIRC, Quality Indicator of Rehabilitative Care.

Table DS3 Service user characteristics			
Characteristic	Mean (s.d.)	n (%)	Median (IQR)
Age, years (N = 739)	40 (13)		
Male (N = 739)		475 (64)	
White (N = 739)		595 (81)	
Age at leaving full-time education, years (N = 739)	17 (2)		
Employment (N = 739)			
Employed (paid or voluntary)		8 (1)	
Unemployed		679 (92)	
Retired		32 (4)	
Other		20 (3)	
Living situation before admission (N = 735)			
Alone		134 (18)	
With partner		22 (3)	
With parents		79 (11)	
With children <18 years		5 (1)	
With children >18 years		9 (1)	
Other		486 (66)	
Housing before admission (N = 738)			
Owner occupier		86 (12)	
Rented flat/house		126 (17)	
Hostel		33 (4)	
Sheltered		12 (2)	
Residential home		14 (2)	
Hospital ward		459 (62)	
No fixed abode		8 (1)	
Diagnosis (N = 702)			
Schizophrenia		511 (73)	
Schizoaffective disorder		57 (8)	
Bipolar disorder		59 (8)	
Other		75 (11)	
Psychiatric history (N = 702)			
Years contact with mental health services (n = 594)			13 (6–22)
Previous admissions (n = 522)			4 (2–9)
Length of current admission, months (n = 586)			18 (9–46)
Time in rehabilitation unit, months (n = 572)			8 (4–19)
Mental Health Act status (N = 630)			
Detained during this admission		427 (68)	
Currently detained		203 (32)	
Previous admission to secure unit (N = 702)			
High secure unit (n = 599)		40 (7)	
Medium secure unit (n = 600)		84 (14)	
Low secure unit (n = 601)		117 (19)	
Prison (n = 600)		110 (18)	
Risk (N = 702)			
Assault on others ever (n = 599)		349 (58)	
Assault in past 2 years (n = 599)		127 (21)	
Serious assault past 2 years (n = 568)		43 (8)	
Self-harm ever (n = 604)		271 (45)	
Self-neglect (n = 604)		295 (49)	
Social inclusion markers			
Voted in last general election (n = 736)		144 (20)	
Has a bank/PO account (n = 735)		623 (85)	
Has charge of own finances (n = 736)		534 (73)	
Standardised outcome measures			
Autonomy: Resident Choice Scale (possible range 22–88) (N = 672)	61 (7)		
Quality of Life: Manchester Short Assessment of Quality of Life (possible range 1–7) (N = 616)	4.6 (0.8)		
Experiences of Care: Your Treatment and Care (possible range 1–25) (N = 711)	24 (4)		
Therapeutic Milieu: General Milieu Index (possible range 5–25) (N = 720)	18 (4)		
Social Functioning: Global Assessment of Functioning (possible range 1–100) (N = 739)	54 (9)		

**Table DS4** Association between unit quality (Quality Indicator of Rehabilitative Care domain scores), unit location, service user characteristics and psychiatric morbidity of local area

	Coefficient	95% CI
<b>Living Environment</b>		
Unit in community	4.47	(-1.08 to 10.03)
Male, %	-0.02	(-0.09 to 0.05)
Mean age, years	-0.12	(-0.33 to 0.09)
Global Assessment of Functioning	0.01	(-0.25 to 0.28)
Detained involuntarily, %	-0.08	(-0.14 to -0.01)
Mental Illness Needs Index	-6.77	(-11.08 to -2.46)
<b>Therapeutic Environment</b>		
Unit in community	3.54	(0.08 to 7.01)
Male, %	-0.04	(-0.09 to -0.00)
Mean age, years	-0.27	(-0.40 to -0.14)
Global Assessment of Functioning	0.10	(-0.06 to 0.27)
Detained involuntarily, %	-0.00	(-0.04 to 0.04)
Mental Illness Needs Index	-0.06	(-2.75 to 2.63)
<b>Treatments and Interventions</b>		
Unit in community	2.96	(-1.14 to 7.06)
Male, %	-0.03	(-0.08 to 0.02)
Mean age, years	-0.19	(-0.34 to -0.03)
Global Assessment of Functioning	0.05	(-0.15 to 0.25)
Detained involuntarily, %	0.02	(-0.03 to 0.07)
Mental Illness Needs Index	-0.26	(-3.44 to 2.92)
<b>Self Management and Autonomy</b>		
Unit in community	2.13	(-2.46 to 6.73)
Male, %	-0.02	(-0.08 to 0.04)
Mean age, years	-0.18	(-0.35 to -0.01)
Global Assessment of Functioning	0.09	(-0.14 to 0.31)
Detained involuntarily, %	-0.12	(-0.17 to -0.06)
Mental Illness Needs Index	-2.80	(-6.37 to 0.76)
<b>Human Rights</b>		
Unit in community	-0.76	(-5.45 to 3.93)
Male, %	-0.02	(-0.08 to 0.03)
Mean age, years	-0.08	(-0.26 to 0.10)
Global Assessment of Functioning	0.12	(-0.10 to 0.35)
Detained involuntarily, %	-0.08	(-0.13 to -0.02)
Mental Illness Needs Index	-1.49	(-5.13 to 2.14)
<b>Recovery-Based Practice</b>		
Unit in community	3.80	(-1.08 to 8.67)
Male, %	-0.05	(-0.12 to 0.01)
Mean age, years	-0.26	(-0.44 to -0.07)
Global Assessment of Functioning	0.13	(-0.11 to 0.37)
Detained involuntarily, %	-0.07	(-0.13 to -0.01)
Mental Illness Needs Index	-0.27	(-4.05 to 3.51)
<b>Social Inclusion</b>		
Unit in community	3.08	(-4.03 to 10.18)
Male, %	-0.11	(-0.20 to -0.03)
Mean age, years	-0.37	(-0.64 to -0.10)
Global Assessment of Functioning	0.10	(-0.24 to 0.45)
Detained involuntarily, %	0.01	(-0.07 to 0.09)
Mental Illness Needs Index	-4.19	(-9.70 to 1.32)

**Table DS5** Association between unit quality (Quality Indicator of Rehabilitative Care domain scores) and service user outcomes

Characteristic	Odds ratio <sup>a</sup> or coefficient <sup>b</sup>	95% CI
<b>Experiences of care (Your Treatment and Care)<sup>a</sup></b>		
Living environment	1.25	(1.04 to 1.50)
Therapeutic environment	1.51	(1.09 to 2.09)
Treatments and interventions	1.56	(1.17 to 2.08)
Self-management and autonomy	1.40	(1.14 to 1.73)
Human rights	1.31	(1.04 to 1.65)
Recovery-based practice	1.22	(0.99 to 1.49)
Social inclusion	1.33	(1.14 to 1.55)
<b>Autonomy (Resident Choice Scale)<sup>b</sup></b>		
Living environment	1.74	(0.81 to 2.66)
Therapeutic environment	3.43	(2.04 to 4.81)
Treatments and interventions	3.18	(1.96 to 4.39)
Self-management and autonomy	2.36	(1.41 to 3.32)
Human rights	2.22	(1.14 to 3.30)
Recovery-based practice	2.38	(1.51 to 3.26)
Social inclusion	2.04	(1.42 to 2.67)
<b>Therapeutic milieu (General Milieu Index)<sup>b</sup></b>		
Living environment	0.73	(0.33 to 1.13)
Therapeutic environment	1.18	(0.61 to 1.75)
Treatments and interventions	0.68	(0.09 to 1.26)
Self-management and autonomy	1.10	(0.72 to 1.47)
Human rights	0.91	(0.45 to 1.38)
Recovery-based practice	0.84	(0.46 to 1.22)
Social inclusion	0.43	(0.16 to 0.70)
<b>Quality of Life (MANSA)<sup>b</sup> (complete case)</b>		
Living environment	0.09	(0.03 to 0.15)
Therapeutic environment	0.02	(-0.13 to 0.17)
Treatments and interventions	0.01	(-0.15 to 0.16)
Self-management and autonomy	0.09	(0.02 to 0.17)
Human rights	0.05	(-0.06 to 0.15)
Recovery-based practice	0.03	(-0.05 to 0.12)
Social inclusion	0.00	(-0.06 to 0.06)
<b>Quality of Life (MANSA)<sup>b</sup> (imputed)</b>		
Living environment	0.09	(0.03 to 0.16)
Therapeutic environment	0.03	(-0.12 to 0.18)
Treatments and interventions	0.02	(-0.14 to 0.17)
Self-management and autonomy	0.09	(0.01 to 0.18)
Human rights	0.05	(-0.06 to 0.16)
Recovery-based practice	0.03	(-0.06 to 0.12)
Social inclusion	0.00	(-0.06 to 0.07)

MANSA, Manchester Short Assessment of Quality of life.  
a. Odds ratio compares Your Treatment and Care scores in highest tertile with lower two tertiles.  
b. For a 10 percentage point change in Quality Indicator of Rehabilitative Care domain score.