Descriptive analysis of complex mental health service users using routinely collected data

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ii. Executive summary

Introduction

Formed in 2002, Cheshire and Wirral NHS Foundation Partnership Trust (CWP) provides a wide range of community and inpatient, physical, all-age disability and mental health care services. The services extend to other areas in the Northwest including, Liverpool, Warrington and Halton. CWP provide care to a specific cohort of patients defined as having 'complex mental health needs'. Complex mental health needs is a broad term used to describe patients who currently receive a package of care commissioned by NHS Cheshire CCG either in an inpatient or a community setting, as well as new referrals into the NHS continuing Healthcare Service who are made eligible for NHS funding. This includes patients who are: 1) detained under section 17 of the mental health act, 2) receiving section 117 aftercare, 3) out of scope, 4) classed as have learning disabilities, 5) children, 6) living with dementia and do not have complex or specialist needs, 7) living with acquired brain injuries and 8) living with physical disabilities.

Impact of The COMPAT study

Mental health services for adults, as they are currently configured, have been designed to provide predominantly community-based interventions supplemented by inpatient facilities for acute scenarios that cannot be managed safely in the community. It has long been recognised that some patients have such significant clinical and/or risk needs that those needs cannot be adequately met within standard service delivery models. Patients with particularly complex needs (often relating to the persistence of serious psychopathology from different diagnostic categories together with substance misuse and the potential for harmful behaviour to self and others) require more specialist rehabilitative care and support. A more informed understanding of the profile of these patients as well as the patterns of service utilisation is required to inform innovative approaches to the delivery of rehabilitation services. The COMplex mental health PAThways (COMPAT) study was designed to examine the resource use and cost-impact associated with alternative care pathways to the NHS and other sectors of the economy (including social care); explore patient health and non-health outcomes associated with alternative care pathways; and, gain an understanding of a complex service user group and how treatment decisions are made to inform consistent and person-centred future service delivery.

Evaluation

Patient data was available for CWP Care Notes from 2005 until October 2021. Data received were anonymised and non-identifiable. Descriptive analyses were conducted to produce a, sociodemographic, diagnostic, health and care pathway profile of the patient group using Care Notes.

Results

The data from a cohort of 184 patients with complex mental health needs was extracted in February 2022. Patients were aged between 18 and 75 years with a mean age of 45. There were more males (61%) than females within the cohort. Over 90% of the sample identified as white British and over 80% were single. Sixty-four per cent of the sample were diagnosed with schizophrenia, schizotypal or delusional disorders. Almost 70% of the cohort had a change in

diagnoses; although, a most recent diagnosis of 'schizophrenia, schizotypal and delusional disorders' remained the most common diagnosis.

There was a high number of "short-stay" admissions; however, there was a substantial subset of "long-stay" admissions that exceeded 200 days (see Figure 1). Almost half the admissions were to an acute ward, with Lakefield, Brakendale, Windsor and Riverwood ward having the highest number of admissions.

Figure 1: Length of stay per admission
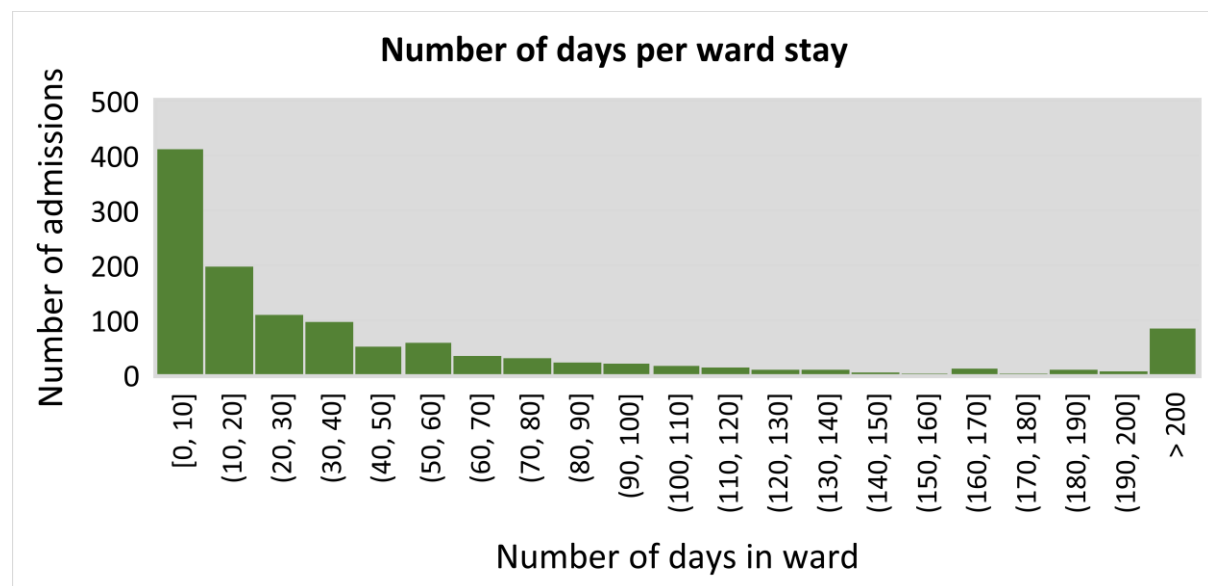
The number of mental health measures recorder for the patients varied considerably and was lacking for many. The available data indicated that many patients were many patients experienced no or mild impairment in mental well-being and that the sample were generally fairly dissatisfied with their lives. Almost a third of the patients' blood pressure readings were within an unhealthy range while the mean BMI for the sample fell into the 'obesity' range (30+). Almost half of the patients fell into a 'red flag' category for alcohol or substance use.

Recommendations

1. Focused exploration of patients with admissions that exceed 200 days.
2. Further examine the link between schizophrenia/psychosis and complexity of care and care pathways.
3. Understand the systemic and patient factors associated with the high level of diagnostic instability among patients with complex needs.
4. Probe the potential causal pathways between physical health and mental health.
5. Identify strategies to reduce missing data, particularly mental health assessments and physical health data capture.

1. Background

1.1 Who is CWP?

Formed in 2002, Cheshire and Wirral NHS Foundation Partnership Trust (CWP) provides a wide range of community and inpatient, physical, all-age disability and mental health care services. The services extend to other areas in the Northwest including, Liverpool, Warrington and Halton.

1.2 Complex mental health needs

Currently, adult mental health services include inpatient units, rehabilitation services and community-based interventions. Community services may include additional provisions that can be accessed depending on risk or diagnosis assessments. People with complex mental health needs often have such significant clinical and/or risk needs that they cannot always be adequately met by such generic services. Some service users experience a mix of mental health problems and they may require extra care or support to manage those problems. Recent recommendations for effective support from mental health services suggest that individuals presenting with complex behavioural and mental health needs are less likely to receive the provision of care they require due to their need for longer-term, highly specialised support (Department of Health, 2007). The majority of these people have a diagnosis of psychosis, severe negative symptoms, and cognitive impairments. Many also have coexisting mental health problems and physical health concerns resulting from poor lifestyle conditions and side effects of psychotropic medication (Killaspy, 2014).

There are many different types of support and treatment that can be provided for these individuals, but it is not always clear which is the best to offer. When a patient is referred for an out-of-area placement (OAP), it is usually because suitable psychiatric services are not available in their area. Often, such placements can result in the patient being moved a significant distance away from their home, far from local services, family and friends. Gaining an in-depth understanding about service users who have such complex needs and the systemic and patient factors associated with complex needs will help us to think about how services should be best delivered in the future.

Mental health services for adults, as they are currently configured, have been designed to provide predominantly community-based interventions. Individuals presenting with complex needs often have longer length of stay in hospitals and may be accommodated in OAPs that are a long distance from their loved ones and communities (Chinn et al., 2011), due to the inability, or arguably the unwillingness (Allen, 2008), of local services to meet their needs. There are growing concerns about the impact of long length of stay in hospital and OAPs on service users, both clinically and financially (Rambarran, 2013). In addition to being costly to the NHS and local social care authorities, individuals who are admitted to hospital for long lengths of time or who may be placed out-of-area can become socially dislocated, achieve poorer outcomes (Beadle-Brown et al., 2005), experience disruptions to their lives (Galante, Humphries & Molodynski, 2019) and, in some cases, be over-supported (Rambarran, 2013).

Modelling research suggests that, with adequate funding of community-level treatment, we can reduce the length of stay and referral rates to OAPs in the future (Paton & Tiffin, 2018).

As little regulation exists surrounding such placements, and because OAPs are often viewed as a way to contain those that NHS services find troubling (Care Quality Commission, 2014), the patient experience needs to be examined.

This study is part of a larger, mixed-methods evaluation using descriptive and inferential analyses of patient records and written medical notes, as well as in-depth interviews with carers, and clinicians. The following report aims to describe the demographic, diagnostic, health and service use profile of patients with complex mental health needs.

2.   Methods and Measures

Design: A retrospective cohort design was employed to assess patients' pathways to current placement, along with their demographics, clinical profiles, and health profiles.

Participants: 184 participants were recruited, each of which were defined as having 'complex mental health needs'. All of the participants resided within the Cheshire Wirral Partnership region on entry to the service and had, or were currently receiving, care within an inpatient facility or within a community setting.

Measures:

Table 1: Measures included

Category	Measures
Demographics	Number of participants, Age, Gender, Ethnicity, Marital status, Religion
Mental Health	HoNos, PANSS, DIALOG, QPR
Physical Health	BMI, Blood pressure, Pulse rate, Smoking status, Alcohol consumption, Substance misuse, Fasting glucose, Total cholesterol

Mental health measures

HONOS (*Health of the nation outcome scales)*

The Health of the Nation Outcome Scales (HoNOS) were developed in the 1990s as a means for clinicians to measure the outcomes of working-age adults in contact with specialised mental health services. The HoNOS comprises 12 sub-scales, which examine a range of social, physical health, and mental health problems. There is now 25 years of accumulated evidence about the measurement properties of the HoNOS. Over this time, several reviews have found the HoNOS to have acceptable reliability, validity, sensitivity to change, clinical utility and interpretability. HoNOS scores range from 0 "no problem" to 4 "severe problem" (Turner, 2004).

PANSS (*The Positive and Negative Syndrome Scale*)

The Positive and Negative Syndrome Scale (PANSS) is a widely used and validated instrument for the assessment of severity of schizophrenia. Test–retest reliability for the total score and subscales is very good (0.77–0.89). Inter-rater reliability has been established in prospective studies which show substantial agreement at the individual item level when assessed by trained and well-qualified raters. (Kay et al., 1987). PANNS is rated on a 7-point scale which ranges from "absent" to "extreme".

DIALOG

The DIALOG is a validated patient-reported outcome and experience measure (PROM/PREM). The scale complies with the requirements for routine outcome assessment in mental health services as suggested by Slade (2002). Patients are asked to rate their satisfaction with each of eight life domains (mental health, physical health, job situation, accommodation, leisure, partner/family, friendship, personal safety) and three treatment aspects (medication, practical help, meetings with healthcare professionals). The 7-point scale ranges from "totally dissatisfied" to "totally satisfied". The DIALOG combines outcome measurement with treatment planning and discussion that is immediately relevant to patients, avoiding additional burden for patient and services that normally hamper routine implementation of such measures.

QPR (*The Questionnaire about the Process of Recovery*)

The QPR is a 15-item measure developed from service users' accounts of recovery from psychosis in collaboration with local service users. The aim of the QPR is to understand people's experiences of recovery in a way that is meaningful to them. The QPR is reliable and valid and is strongly associated with general psychological wellbeing, quality of life and empowerment all of which are crucial in recovery from psychosis.

The QPR possesses internal consistency, construct validity and reliability, and promises to be a useful tool for assisting clients to set goals, evaluation of these goals and promoting recovery from psychosis in routine service evaluation and research trials (Neil et al., 2009)

Data analysis: Descriptive analysis will be conducted to produce a clinical and demographic profile of the patient group and identify strengths and weaknesses of data collection procedures.

Procedure: The patient data was obtained via *Care Notes*, an electronic patient record system used within the NHS. Patient record data is captured for people who met the criteria for inclusion in this study who were under the care of the service in October 2021.

Ethics: Ethical approval was obtained from the NHS Health Research Authority and West Midlands - Coventry & Warwickshire Research Ethics Committee: [REC Ref: 21/WM/0020] Integrated Research Application System (IRAS) prior to study commencement. Ethical approval was received on 19th March 2021 from HRA and Health and Care Research Wales (HCRW). The study will be undertaken in compliance with the research protocol at all times.

3. Results

Demographic characteristics

Table 2 shows the demographic characteristics of the cohort of 184 patients. The age of participants ranged between 18 and 75 years, with a mean age of 45 years. The majority of the sample are White British (91.8%) with 6.4% from other ethnic groups and 1.6% not known. The sample was made up of a higher number of males (61%) than females (38%). Sexual orientation was not recorded for almost three quarters of the sample (74.5%). Of the patients for which the data was recorded, all but two patients were recorded as heterosexual. The most common religious affiliation was Christian, Roman Catholic and Church of England, which together made up 55% of the sample. For 31% of the sample, the religious affiliation was not known, with 10.3% of the sample being categorised as having 'other' as their religion. Marital status showed that the majority (81%) of the sample were single, followed by divorced (8.2%), and married (4.3%).

Table 2: Demographic characteristics of service users defined as having complex mental health needs

Demographic Categories	Frequency (n=184)	Percentage %
Gender		
Male	112	60.9
Female	70	38.0
Not Known	2	1.1
Sexuality		
Gay or Lesbian	1	.5
Bisexual	1	.5
Heterosexual or straight	45	24.5
Not Known	137	74.5
Ethnic Origin		
Asian or Asian British, Bangladeshi	2	1.1
Asian or Asian British, Indian	1	.5
Asian or Asian British, Other	2	1.1
Black or Black British, African	2	1.1
Black or Black British, Caribbean	2	1.1
Black or Black British, Other	1	0.5
White, British	169	91.8
White, Irish	1	0.5
White, Other	1	0.5
Not known	3	1.6
Religion		
Buddhist	1	0.5

Christian	51	27.7
Church of England	34	18.5
Hindu	1	0.5
Muslim	3	1.6
Roman Catholic	17	9.2
Other	19	10.3
Not Known	58	31.7
Marital Status		
Cohabiting	1	0.5
Divorced	15	8.2
Married	8	4.3
Separated	6	3.3
Single	149	81
Widowed	2	1.1
Not Known	3	1.6

Diagnostic Profile

As shown in Table 3, when categorised into broad ICD-10 categories, data for the primary diagnoses on first contact with the service showed that the majority of patients were diagnosed with schizophrenia, schizotypal and delusional disorders (64%). This was followed by mood affective disorders (11.6%) and Disorders of adult personality and behaviour (6.6%). Five percent of the sample were diagnosed with Mental and behavioural disorders due to psychoactive substance use.

Table 3: Primary diagnosis on first contact to service

Total sample: N=184

Diagnosis	Frequency	Percentage
Schizophrenia, schizotypal and delusional disorders F20-F29	116	64.0
Mood affective disorders F30-F39	21	11.6
Disorders of adult personality and behaviour F60-69	12	6.6
Mental and behavioural disorders due to psychoactive substance use F10-19	9	5.0
Neurotic, stress-related and somatoform disorders F40-F48	7	3.8
Behavioural syndromes associated with psychological disturbances F50-59	5	2.8
Disorders of psychological development F80-89	4	2.2
Mental retardation F70-79	3	1.6
Not reported	3	1.6
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence F90-98	1	0.6
Unspecified mental disorder F99	1	0.6
Observation for disease or condition unspecified Z00	1	0.6

Organic, including symptomatic, mental disorders F00-F09	1	0.6

Table 4 shows secondary diagnoses on first contact with services. The majority of patients (63.5%) had no secondary diagnosis on first contact with services. When categorised into broad ICD-10 groups, 15 patients (8.9%) had a secondary diagnosis of Mental and behavioural disorders due to psychoactive substance use, which was the most common out of each of the diagnoses. This was followed by Neurotic, stress-related and somatoform disorders (4.4%), Mood affective disorders (2.8%) and Disorders of psychological development (2.2%).

Table 4: Secondary diagnosis on first contact to service

Total sample: N=181

Diagnosis	Frequency	Percentage
No other diagnosis	115	63.5
Mental and behavioural disorders due to psychoactive substance use F10-19	15	8.9
Organic, including symptomatic, mental disorders F00-F09	1	0.6
Neurotic, stress-related and somatoform disorders F40-F48	8	4.4
Mood affective Disorders F30-F39	5	2.8
Disorders of Psychological development F80-89	4	2.2
Schizophrenia, Schizotypal and delusional disorders F20-F29	3	1.7
Not reported	3	1.6
Mental Retardation F70-79	2	1.1
Behavioural syndromes associated with psychological disturbances F50-59	2	1.1
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence F90-98	1	0.6
Unspecified mental disorder F99	1	0.6
Observation for disease or condition unspecified Z00	1	0.6
Disorders of adult personality and behaviour F60-69	1	0.6

Table 5 shows the most recent diagnosis of the cohort of patients. Nine of the patients were not reassessed at any point (5%), hence they do not have a 'most recent diagnosis'. Out of the people who were diagnosed on at least two occasions, the majority were diagnosed with Schizophrenia, Schizotypal and delusional disorders (68.5%). This was followed by Mood affective disorders (8.8%) and Disorders of adult personality and behaviour (8.8%).

Table 5: Most recent diagnosis

Total sample: N=181

Diagnosis	Frequency	Percentage
Schizophrenia, Schizotypal and delusional disorders F20-F29	124	68.5
Mood [affective] Disorders F30-F39	16	8.8
Disorders of adult personality and behaviour F60-69	16	8.8
Not assessed multiple times	9	5.0
Mental and behavioural disorders due to psychoactive substance use F10-19	4	2.2
Disorders of Psychological development F80-89	4	2.2
Neurotic, stress-related and somatoform disorders F40-F48	3	1.6
Organic, including symptomatic, mental disorders F00-F09	3	1.6
Behavioural syndromes associated with psychological disturbances F50-59	1	0.5
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence F90-98	1	0.5
Unspecified mental disorder F99	0	0.0
Observation for disease or condition unspecified Z00	0	0.0
Mental Retardation F70-79	0	0.0

Table 6 shows that 123 patients (68%) changed from initial to most recent, with 49 patients having no change in diagnosis. 9 patients were not assessed more than once.

Table 6: Diagnosis change

Total sample: N=181

Diagnosis status	Frequency	Percent
No change	49	27.1
Change	123	68
Not assessed multiple times	9	5

Inpatient ward stays

Figure 1 shows the length of stays per admission. The majority of stays (410) were between 0-10 days. There were less than 50 admissions that resulted in stays between 60 and 200 stays, and a substantial subset (60) of admissions that resulted in more than 200 day stays.

Figure 1: Length of stay per admission
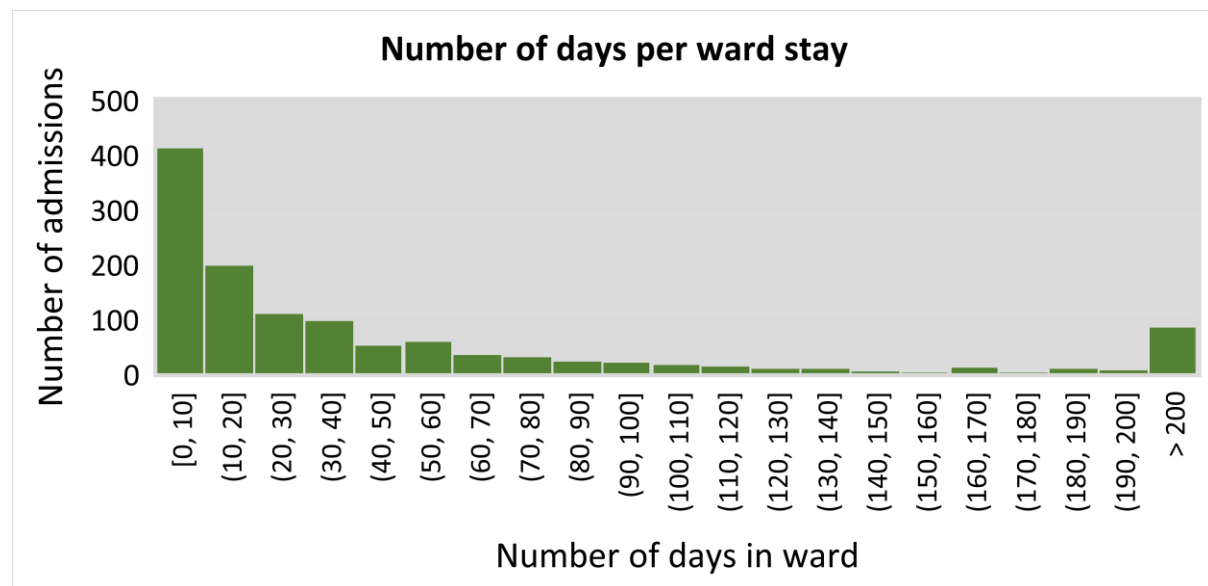
Average length of ward stays (days)	114.50
Median length of ward stay (days)	115
Standard Deviation	71.42

Figure 2 shows each of the admissions by ward type. There was a total of 1248 admissions, with ward data not collected for a quarter of admissions (25%). For the admissions that did carry ward data, the majority of admissions were to acute wards (48.7%), followed by PICU wards (16.1%), Rehabilitation wards (5.5%), CAMHS admissions (2.6%), and low secure units (1%). The lowest admissions by ward type were Organic (0.4%), learning disability (0.4%) and eating disorder (0.3%) wards.
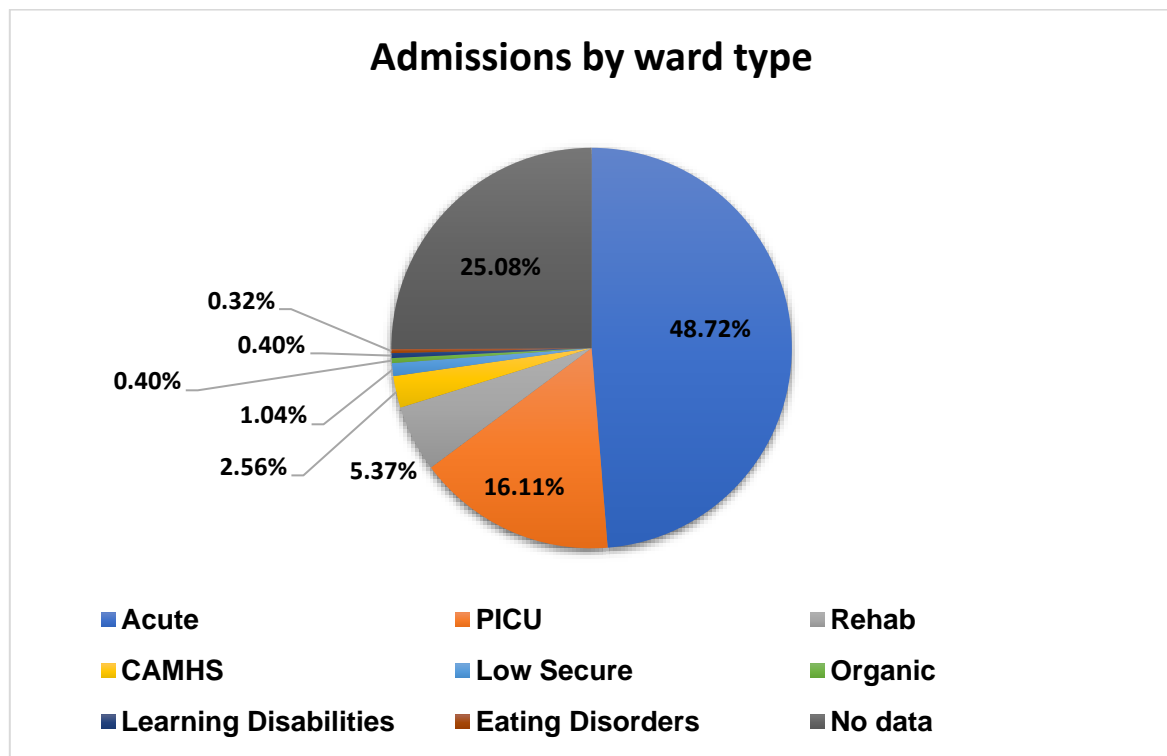
Figure 2: Admissions by ward type

Table 7 shows a breakdown of admissions within each ward, and each ward type. Acute wards Lakefield (368) and Brackendale (147) had the highest number of admissions, followed by Brooklands PICU ward (132).

Table 7: Admissions by ward
n=1256

Ward name	Number of admissions
Acute	
Lakefield	368
Brackendale	147
Windsor Ward	82
Riverwood Ward	76
Sandringham Ward	71
Beech Ward	49
Juniper Ward	31
Buckingham	25
Bollin Ward	16
Cherry Ward	2
Pine Lodge	6
CARS	2
Rehabilitation	
Maple Ward	18
Saddlebridge	13
LWH Step Down Ward	5
Maple ward	9
Balmoral Ward	2
Rosewood	48
Maple -	2
LWH - rehab	1
Low Secure	
Dane Ward – low secure	5
Kensington Ward -Low secure	12
Derby Ward – low secure	1
CAMHS	
Coral Ward	9
Indigo Ward	5
Kent House	1
PICU	
Brooklands	132
Willow Ward	69
Organic	
Meadowbank	3
Adelphi Ward	5
Eating Disorders	
Pine Lodge	6
Learning Disability	
Eastway	5
No data	26
Total	1256

Mental Health

HONOS

Table 8 shows the average scores of each of the 12 HONOS items on initial entry to service, with 181 valid patient scores, 3 scores were missing.

The lowest average scores were 'problem drinking drugs' (0.81), 'living conditions' (0.80) and 'self-injury' assessment (0.61). The highest mean scores were 'other mental problems' (1.86) and 'Relationship problems' (1.70).

Table 8: HONOS average scores by item (0-4 scale)

HONOS Item	Mean
Agitated Behaviour Assessment Score	0.97
Other Mental Problems Score Assessment Score	1.86
Relationship Problems Assessment Score	1.70
Hallucinations Assessment Score	1.56
Daily Living Assessment Score	1.54
Occupational Problems Assessment Score	1.34
Depressed Mood Assessment Score	1.15
Physical Illness Assessment Score	0.99
Cognitive Problems Assessment Score	0.95
Problem Drinking Drugs Assessment Score	0.81
Living Conditions Assessment Score	0.80
Self-Injury Assessment Score	0.61

PANSS

Total PANSS scores were available for 23 out of 184 patients. Table 11 shows the total scores of patients, ranging from 3 to 128. Table 12 shows the clinical cut off of each of these scores, with 9 (39.1%) of patients scoring below the clinical cut off for mildly ill, 6 patients (26.1%) were within the 'mildly ill' category, 2 patients (8.8%) were within the 'moderately ill' category, 5 patients (21.7%) were within the markedly ill category, with 1 patient (4.3%) within the 'severely ill' category.

Table 9: PANSS Scores by clinical cut offs

Total sample: n=23

Cut Off	Frequency	Percent
Below 58	9	39.1
Mildly ill 58	6	26.1
Moderately ill 75	2	8.8
Markedly ill 95	5	21.7
Severely ill 116	1	4.3

DIALOG

Table 10 shows the overall mean scores of patients, on initial assessment, when divided into relevant DIALOG scale cut offs. The majority of patients (62.5%) were in the 'fairly dissatisfied' category, followed by 'in the middle' which was the overall score of 7 patients (21.8%), and 'very dissatisfied' which was the overall score of 5 patients (15.7%).

Table 10 : Overall mean DIALOG scores on initial assessment when divided into relevant cut offs

Total sample: n=32

Score	DIALOG Scale	Frequency
1	Totally dissatisfied	0
2	Very dissatisfied	5
3	Fairly dissatisfied	20
4	In the middle	7
5	Fairly satisfied	0
6	Very satisfied	0
7	Totally satisfied	0

Table 11 shows a breakdown of each of the individual categories on the DIALOG scale based on initial assessment. Note that none of the categories have a score for each of the 32 patients and the total scores obtained range from 22 to 29 answers. The lowest of the mean scores was related to 'job situation', which had a mean score of 3. The highest score was that of 'practical help', with a mean of 4. With the exception of 'practical help', each of the mean scores translate as "fairly dissatisfied" on the DIALOG scale.

Table 11: DIALOG mean scores within each category

DIALOG category	N	Minimum	Maximum	Mean
DIALOG - Mental health initial	29	1	5	3.4
DIALOG - Physical health initial	29	2	5	3.5
DIALOG - Job situation initial	28	1	4	3
DIALOG - Accommodation initial	22	2	5	3.6
DIALOG - Leisure initial	29	1	5	3.6
DIALOG - Friendship initial	25	1	5	3.4
DIALOG - Partner family initial	26	2	5	3.8
DIALOG - Personal safety initial	25	1	5	3.6
DIALOG - Medication initial	24	2	5	3.7
DIALOG - Practical help initial	23	1	5	4
DIALOG - Professional help	25	1	5	3.7

Physical Health

Physical health data was collected for approximately half of the patients. Table 12 shows the data that was available for each of the health measures. Weight was recorded for 91 patients and ranged from 53.5kg to 187.5kg with a mean weight of 91.7kg. Height was recorded for 90 patients ranging between 1.3m and 1.9m, with a mean height of 1.7m. Body mass index was recorded for 76 patients, ranging between 18.33 to 54.1 with a mean body mass index of 30.3. Blood pressure was recorded for 94/184 patients, systolic ranging from 89mmHg to 155mmHg, with a mean of 121.8mmHg, and diastolic a range of 20mmHg to 106mmHg, with a mean of 77.7mmHG. Overall mean blood pressure of 121.8/77.7mmHg. Pulse rate was collected for 90/184 patients, ranging from 57 to 124bpm with a mean pulse rate of 89.9bpm.

Table 12 also shows the health screening measures which were available for female patients, again the data was available for around half of the female patients. Weight was recorded for 34 females, ranging from 53.5kg to 187.5kg, with a mean weight if 83.5kg. Height was recorded for 34 females, ranging from 1.3m to 1.7m with a mean height of 1.6m. Body mass index was recorded for 29/40 females, ranging from 18.3 to 48.5, with a mean BMI of 30. Blood pressure was recorded for 37/70 females, systolic blood pressure ranging from 97 to 154mmHg, with a mean of 115.4mmHg, and diastolic blood pressure ranging from 20 to 92mmHg, with a mean of 75.3mmHg. Overall mean blood pressure of 115.4/75.3mmHg. Pulse rate was collected for 36 females, ranging from 57 to 124bpm with a mean rate of 88.5bpm.

Table 12: Health Screening on Initial Assessment (overall sample)

Health screen type	N	Minimum	Maximum	Mean	Standard Deviation
Weight (kg)	91	53.5	187.5	91.7	25.1
Height (m)	90	1.3	1.9	1.7	0.1
BMI	76	18.3	54.1	30.3	7.2
Blood pressure systolic	94	89.0	155.0	121.8	13.8
Blood pressure diastolic	94	20.0	106.0	77.7	10.8
Pulse Rate	88	57.0	124.0	90.91	13.6
Female					
Weight (kg)	34	53.5	187.5	91.7	25.1
Height (m)	34	1.3	1.7	1.6	0.1
BMI	29	18.3	48.5	30.0	6.8
Blood pressure systolic	37	97.0	154.0	115.4	11.0
Blood pressure diastolic	37	20.0	92.0	75.2	12.5
Pulse Rate	36	57.0	124.0	88.3	15.0
Male					
Weight (kg)	57	54.6	173.0	96.7	23.7
Height (m)	56	1.6	1.9	1.8	0.1
BMI	47	18.7	54.1	30.5	7.5
Blood pressure systolic	57	89.0	155.0	125.9	14.0
Blood pressure diastolic	57	57.0	106.0	79.4	9.3
Pulse Rate	52	59	116.0	92.6	12.4

As well as this, the table 12 shows that data was available for half of the male patients, Weight was recorded for 52 males, ranging from 54.6kg to 173kg, with a mean weight if 96.7kg. Height was recorded for 56 males, ranging from 1.6m to 1.9m with a mean height of 1.8m. Body mass index was recorded for 47 males, ranging from 18.7 to 54.1, with a mean BMI of 30.5. Blood pressure was recorded for 57 males, systolic blood pressure ranging from 89 to 155mmHg, with a mean of 125.9mmHg, and diastolic blood pressure ranging from 57 to 106mmHg, with a mean of 79.4mmHg. Overall mean blood pressure of 125.9/79.4mmHg. Pulse rate was collected for 52males, ranging from 59 to 116bpm with a mean rate of 92.6bpm

Table 13 : Healthy/Unhealthy range

Health Screen		N	Percent
Systolic BP not in healthy range		54	29.3
Systolic BP in healthy range (90-199)		40	21.7
	Total	94	51.1
	Not recorded	90	48.9
Diastolic BP not in healthy range		44	23.9
Diastolic BP in healthy range		50	27.2
	Total	94	51.1
	Not recorded	90	48.9
Pulse not in healthy range		24	13
Pulse in healthy range (60-100)		66	35.9
	Total	90	48.9
	Not recorded	94	51.1
Healthy HDL cholesterol (0-5.99)		58	31.5
Not healthy HDL cholesterol (6+)		9	4.9
	Total	67	36.4
	Not recorded	117	63.6
Healthy LDL cholesterol		46	25
Not healthy LDL cholesterol		18	9.8
	Total	64	34.8
	Not recorded	120	65.2

Table 13 shows the healthy/unhealthy range for health screens which were available. Systolic blood pressure was available for a total of 94 patients, 29.3% of which were not within the healthy range, 21.7 were within the healthy range, with 49% not recorded. For diastolic blood pressure, 24% were not within the healthy range, 27% were within the healthy range, with 51% not recorded. Pulse rate was recorded for 90 patients, 13% of whom were not within the healthy range.

Cholesterol levels were recorded for 67 (36.4%) patients, with 5% not being within the healthy HDL range. LDL cholesterol was recorded for 64 (34.8%) patients, and shows that that 9.8 patients were not within the healthy range.

Red flags

Table 14 shows a breakdown of each of the 'red flags' for patients regarding their health. The term 'red flag' flags for those with addictions due to signs and symptoms which indicate the presence of an addiction. The three red flag categories were smoker, substance misuse and alcohol consumption and include patients with . A total of 84 patients fell into a red flag category, 59 patients were smokers, 15 patients reported substance misuse and 10 misuse of alcohol.

Table 14 : Red flag totals

Red Flag	N	Percent
Smoker	59	32.1
Substance misuse	15	8.2
Alcohol	10	5.4

Table 15 shows the health screens of the patients that fall into the 'red flag' category. Blood pressure was recorded for 57 males ranging from 89 to 115 mmHG, with a mean of 125.9 mmHG. Diastolic blood pressure ranged from 57 to 106 mmHG with a mean of 79.4 mmHG, Pulse rate was recorded for 54 males ranging from 59 to 116bpmwith a mean of 90.9bpm.

Blood pressure was recorded for 37 females within the red flag category, ranging from 97 to 154 mmHG, with a mean of 115.4 mmHG. Diastolic blood pressure ranged from 20 to 92mmHG with a mean of 72.5 mmHG, Pulse rate was recorded for 36 females, ranging from 57 to 124 bpm with a mean of 90.9bpm.

Table 15: Health Screening on Initial Assessment – Red flags.

Health screen type	N	Minimum	Maximum	Mean	Standard deviation
Male					
Blood pressure systolic	57	89	115	125.9	14
Blood pressure diastolic	57	57	106	79.4	9.3
Pulse Rate	54	59	116	90.9	17.5
Female					
Blood pressure systolic	37	97	154	115.4	11
Blood pressure diastolic	37	20	92	75.2	12.5
Pulse Rate	36	57	124	88.5	15

4. Conclusion

This report details demographic, diagnostic, health and service use profile of a cohort of patients with complex mental health needs. The cohort was made up of 184 patients from Cheshire and Wirral Partnership NHS. Results indicated there were a higher number of male patients than female patients, the majority of the sample were White British, single, of a Christian religious denomination and heterosexual, which is reflective of the demographics within the region (Wirral CCG, 2020).

The patients within the cohort varied in diagnoses. The highest number of primary diagnoses on entry to service were classified as 'schizophrenia, schizotypal and delusional disorders' . The majority of the cohort did not have a secondary diagnosis on entry to service and the most common secondary diagnosis was 'mental and behavioural disorders due to psychoactive substance use' group. Almost 70% of the cohort had a change in diagnoses; although, a most recent diagnosis of 'schizophrenia, schizotypal and delusional disorders' remained the most common diagnosis. .

There was a high number of "short-stay" admission; however, there was a substantial subset of "long-stay" admissions that exceeded 200 days. Almost half the admissions were to an acute ward, with Lakefield, Brakendale, Windsor and Riverwood ward having the highest number of admissions. Of note, data was missing for a quarter of the admissions.

The number of mental health measures recorder for the patients varied considerably. For example, the HoNOS was available for almost all (181) patients whereas DIALOG scores were only available for 32 patients. The data for the PANNS assessment indicated that the majority of patients were mildly ill, or not ill. DIALOG scores indicated that the sample were generally fairly dissatisfied with their lives.

Almost a third of the patients' blood pressure readings were within an unhealthy range while the mean BMI for the sample fell into the 'obesity' range (30+). Almost half of the patients fell into a 'red flag' category for alcohol or substance use.

This report provides detailed information about a group of patients classed as having complex mental health needs. The report provides information on the demographic, diagnostic, health and service use profile of s patient group. A limitation of the report is that there are multiple instances where data is missing or not recorded; therefore some results, such as those extracted from only a small subset of participants, should be interpreted with caution.

5. Recommendations

The recommendations from this report are as follow:

- Focused exploration of patients with admissions that exceed 200 days.
- Further examine the link between schizophrenia/psychosis and complexity of care and care pathways.

- Understand the systemic and patient factors associated with the high level of diagnostic instability among patients with complex needs.
- Probe the potential causal pathways between physical health and mental health.
- Identify strategies to reduce missing data, particularly mental health assessments and physical health data capture.

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