UNIVERSITY OF CAPE TOWN

Primary Mental Healthcare Continuity

Post-Discharge Continuity of Care for Mental Healthcare Users

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Part 0: Preamble

1) Plagiarism Declaration

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2) Dedication

AD MAJORAM DEI GLORIAM

I dedicate this work to

my Son;

Joseph Dharmaraja Peters

and

my Mother;

Padmini Ursula Christine Peters

Companion sojourners,

through

the Life everlasting.

3) Acknowledgements

I thank my supervisors, Professors Maylene Shung-King and Marguerite Schneider, for their support and supervision throughout this work. I also wish to thank all interviewees and discussants, and the Western Cape Provincial Health Data Centre for their assistance, including Mr Timothy Mountford, Dr Carl Morrow, Dr Hannah Hussey and Prof. Andrew Boulle. Most importantly, my family; my wife Maria, my brother Shriyan, my in-laws Lizzy and Jose, my son Joseph, and my parents Padmini and Paul, for their love and support.

4) Abstract

Background:

There is a 40% lifetime prevalence of mental illness in the Western Cape province of South Africa, placing significant pressure on the healthcare system (Herman et al, 2009). Post-discharge continuity of mental healthcare is poor in low-and middle-income settings yet is foundational to preventing relapse, the extent and causes of which are unknown in South Africa.

Methods:

This mixed methods study examined continuity rates and underlying factors for mental healthcare users discharged from an in-patient district hospital service to primary care in a Cape Town Health sub-district. First, six purposively sampled interviews were conducted with managers and clinicians. Thereafter, retrospective data analysis of 5 818 patients discharged from 01/01/2015 to 31/12/2020 was conducted to determine Continuity, Readmission and Loss to Follow-Up Rates by univariate and bivariate data analysis. Codes and data generated from this were reviewed in a focus group discussion with four primary care Mental Health Nurses. Themes and indicators generated from the different phases were analysed using the Van Olmen Health System Dynamics Framework.

Results:

Two-thirds of patients (66.6%) had no contact within 30 days of discharge, less than a quarter (24.7%) had attended a clinic visit, and a minority (8.7%) were readmitted. Discontinuity was higher in males, those of working age and in higher income groups. Individual-level barriers to continuity of care included diagnostic complexity, severity and co-morbidity, whilst health system barriers included lack of mental health nurses at certain clinics, cross-district referral complexities, and poor collaboration within facilities and with community-based services, and contextual barriers included violent crime, gangsterism and substance abuse. A paucity of diagnostic coding data and concerns regarding incomplete attendance capturing called into question the validity of the indicators generated.

Conclusion:

Based on available data, the mental health service in the sub-district under study had poor post-discharge continuity of care, signaling the need for an integrated district mental health services policy, with quality-controlled care continuity indicators. Mixed methods research techniques allowed for the qualitative exploration and explanation of poor continuity. Further research is required which focuses on high-risk groups for poor continuity, and the quality of data collection, analysis and reporting in health districts.

5) Contents

Part A: Protocol

Research Protocol:

“Primary Mental Healthcare Continuity”

Post-Discharge Continuity of Care for Mental Health Care Users

A thesis protocol written in partial fulfilment towards a degree in Master of Public Health

By:

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Groote Schuur Hospital | University of Cape Town

Western Cape Government: Health

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Abbreviations

ACT	Assertive Community Treatment
BCTI	Brief Critical Time Intervention
CDC	Community Day Centre
CHC	Community Health Centre
COC	Continuity of Care
CTI	Critical Time Intervention
DALY	Disability-Adjusted Life Years
DH	District Hospital
ICP	Integrated Care Pathway
ICM	Intensive Case Management
ICDM	Integrated Chronic Disease Management
MAP	Motivational Aftercare Planning
MH	Mental Health – is defined as a state of well-being in which every individual realises his or her own potential and is able to make a contribution to his or her community (WHO)
MHCU	Mental Health Care User
OPD	Out-Patients Department
PHC	Primary Health Care
RIC	Retention in Care
SAFMH	South African Federation for Mental Health
TCM	Transitional Case Management
WHA	World Health Assembly
WHO	World Health Organization

1. Introduction

Increasingly, mental health is being recognized as an important public health problem across South Africa, with almost one third of adults in South Africa predicted to develop a mental illness in their life (Herman et al, 2009), however, mental health services have been chronically under- resourced (Herman et al, 2009). As a result, there is considerable service pressure placed on the healthcare system, particularly on admission beds at district-level. A missed primary care appointment, following an in-patient admission to control psychiatric symptoms, can be viewed as a poor return on investment for an already constrained resource – psychiatric in-patient beds, as this leads to treatment non-adherence and psychiatric relapse.

"Thus Continuity of Care (COC), defined as the 'degree to which a series of discrete healthcare events is experienced as coherent, connected and consistent with a patient's medical needs and personal context' (Haggerty et al., 2003), is viewed as a cornerstone of quality service provision across complex and often difficult to navigate health systems. Despite this, there are a paucity of empirical studies which have sought to investigate causal links between COC and improved outcomes in mental illnesses, and those which did failed to provide any evidence in this regard due to an underdevelopment and inconsistency in indicators designed to measure COC in mental health. (Adair et al., 2003).

In the latest systematic review of the topic, all studies which met the inclusion criteria were based in HICs; the US, the UK and other continental European nations. (Puntis et al., 2015). Two studies which reviewed 'time to first contact after discharge' reported that better COC was associated with a reduced risk of re-hospitalization for patients who had follow-up visits within 5 days (Huff et al., 2000) or within 180 days post-discharge (Grinshpoon et al., 2011) respectively. Despite the paucity of comparable, standardised indicator data in this global

systematic review, the authors did find amongst these heterogenous studies those with empirical evidence for improved service satisfaction, social functioning and symptom control (Puntis et al., 2015).

Globally, the need for improved integration of mental health into primary health care (both general clinic and community-based care) has received attention, with the World Health Organization's Mental Health Report of 2022 calling for the provision and scale up of mental health care services in communities and deinstitutionalization of care for severe mental illnesses (World Health Organization, 2022).

The Western Cape (WC) is the fourth largest in terms of population of the nine provinces of the Republic of South Africa, with an estimated population in 2016 of almost 6.3 million people. The province is divided into six health districts, of which five are rural, containing approximately one-third of the provincial population. The sixth, the Cape Metropolitan Health District, contains two-thirds of the provincial population within the City of Cape Town. This is further sub-divided into eight health sub-districts, contains three tertiary hospitals, one regional hospital and eight district hospitals (Statistics South Africa, 2018). There are also specialised facilities for tertiary in-patient mental healthcare, these being Valkenberg, Stikland, Lentegeur and Alexandria Hospitals. There is a near-40% lifetime prevalence of mental ill-health in the province (Herman et al, 2009), making this a major contributor to morbidity.

The WC does not have a separate provincial mental health policy but does have a Home and Community Based Care (HCBC) Framework spanning across the life course and the continuum of mental health (WC HCBC framework, 2015). The framework notes the need

for a person-centred, preventative and proactive approach to link patients in communities to healthcare services as needed. Intuitively, this requires linkage of Specialist mental health services at tertiary, regional and district levels to transversal services on the primary care platform. COC is thus a key deliverable of Community-Based Services coordinators in health districts. The Southern sub-district of the Metro is an exemplar district for health systems complexity. Although the district contains only one in-patient mental healthcare service at Victoria Hospital, it includes a diverse array of socio-economic communities, multiple primary mental healthcare clinics, and multiple referral pathways to different tertiary facilities, in different sub-districts of the Metro. Victoria Hospital, a large District Hospital (DH), provides a range of in-patient and out-patient medical services.

Victoria District Hospital Mental Health Services

Victoria Hospital is a large District Hospital (DH), which runs a Psychiatric in-patient service and a post-discharge Out-Patients service, which is staffed by a Mental Health (MH) Professional Nurse, a Medical Officer and a District Psychiatrist. The facility down-refers to Primary Mental Healthcare services, which operate at local Community Day Centres (CDCs), CHCs and a small DH.

Victoria DH has two wards and an OPD that is staffed with two medical officers, a medical intern and one registered nurse. Although the Psychiatry in-patient service consists of only 15 beds, the service usually cares for double this number of in-patients at any one time, requiring their accommodation in general medical ward beds.

A map of the total approximate catchment area of Victoria Hospital is shown in Figure 1. A snapshot of characteristics of mental health patients admitted in 2013, (the time of initial conceptualisation of this study) is shown in Table 1.

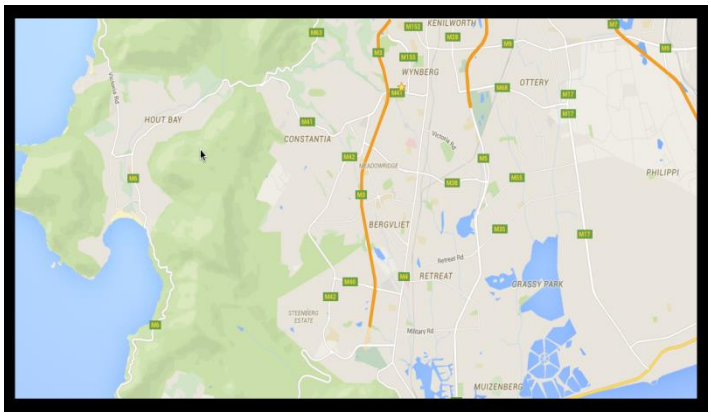

Figure 1: Drainage area of Victoria Hospital (Google Maps, 2021)

Table 1: Demographic details of mental healthcare users admitted to Victoria DH in 2013 (Victoria Hospital, 2013)

Characteristic		**Percent**
24-hour admission (%)		
	Yes	23
	No	77
Gender (%)		
	Males	57
	Females	43
Age Group (%)		
	<18	5
	18-60	89
	>60	6

The burden of psychiatric disease in 2013 is summarised in Figure 2. For most months, the predominant patient diagnoses are in the psychotic spectrum, followed by suicidal behaviour. The number of admissions were highest in January and December (Victoria Hospital, 2013).

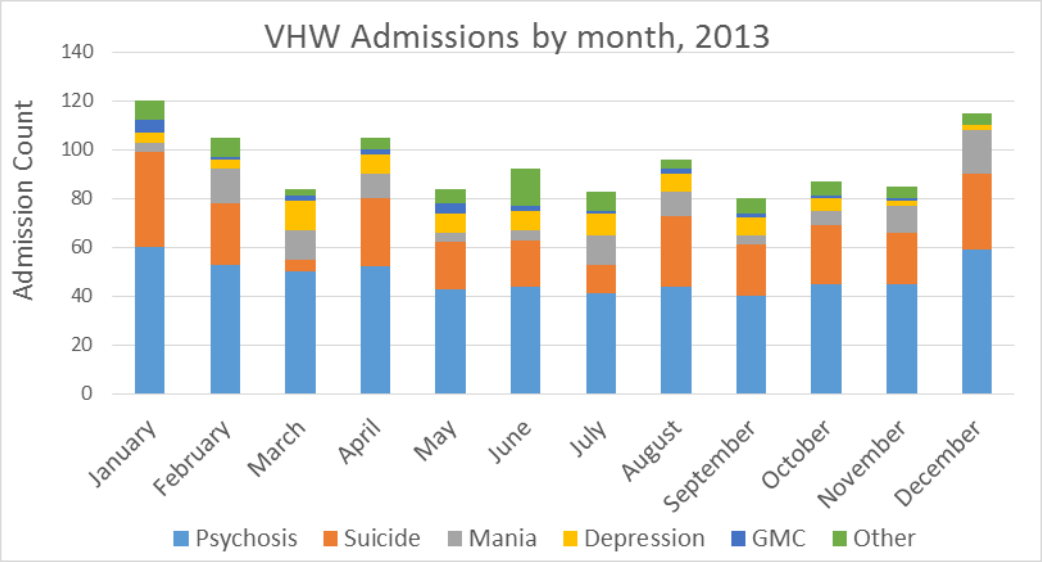

Figure 2: Psychiatric Disease Profile for Victoria Hospital 2013 (Victoria Hospital, 2013)

Mental Health Discharge Process

Prior to 2015, Victoria DH followed a simple discharge procedure, whereby patients were discharged with triplicate discharge forms, and requested to follow-up at their local clinic, prior to their discharge medication supply being completed. Since 2015, Victoria DH has introduced a new discharge procedure for mental healthcare users. When patients are discharged from Victoria Hospital, a follow-up appointment is arranged on their behalf, at an appropriate PHC facility within two weeks post-discharge. The MH Nurse at the PHC facility will receive a faxed or emailed copy of the discharge summary before the patient's follow-up appointment date. All clinics also receive a summary of all patients who have been referred to their services on a weekly basis.

Mental Health services on the Primary Care Platform

Patients residing within the Southern sub-district are discharged to the primary care platform, which includes Retreat CHC, Lady Michaelis CDC, Lotus River CDC, Hout Bay CDC,

Strandfontein CDC, Grassy Park CDC and False Bay Hospital, These services operate under the auspices of an MH Nurse, with assistance from visiting Psychiatry Registrars.

There are several known risk factors for mental healthcare discontinuity in high income countries. In these settings, appointment discontinuity is highest in patients who undergo involuntary mental health admissions, those who abscond from the service, and those with poor social support structures. This study will explore frontline primary mental healthcare workers' observations and opinions on the phenomenon of discontinuity of care for mental healthcare users in the southern sub-district of the Cape Town Metropolitan Health District.

Establishing baseline COC rates is the first step towards investigating and determining the reasons for discontinuity of mental healthcare services on the primary healthcare platform. Data from the WC Provincial Health Data Centre (PHDC) will be analysed to establish this rate, the underlying reasons which might explain the observed rate, and possible interventions to improve COC will be explored.

The ultimate purpose of the study will be to investigate the causes of mental healthcare discontinuity, and thus contribute ideas on how to decrease the rate of relapse in mental health conditions in communities and decrease the burden of mental disease in a resource-constrained system. Although the perspectives of patients and their families are extremely important in understanding COC, the views and opinions of frontline primary mental healthcare workers will be sought first, as this research seeks to interrogate empirical primary mental healthcare service quality data, of which they are a vital part.

2. Literature Review:

2.1.Methodology:

2.1.1. Key Search Terms:

“Community Mental Health” AND

“Primary Mental Health” AND

“Retention in Care” AND

“Engagement” AND

“Attachment”

“Continuity of Care” AND

“Health-seeking behaviour” AND

“Disengagement from Care” AND

“Lower- and middle-income countries” AND

“South Africa”

2.1.2. Search Engines

The search engines used were primarily Google Scholar and PubMed

An extensive online search for grey literature was conducted, however we were unable to find any national or provincial operational reports regarding continuity of care in South Africa, separate to published articles on the topic

2.1.3. Language

Only English language articles were included in this literature review. A total of 81 articles were reviewed.

2.2. Severe mental health disorders in LMICs

The global burden of disease due to neuropsychiatric disorders has been measured at 13% (WHO, 2009), with a sub-set of severe mental disorders affecting 4% of the world's adult population. In the most recent study of the global burden of disease, mental illness is noted as a significant contributor to morbidity and mortality, contributing almost 15% of total years of life lost (Vos et al., 2020).

In 2012, after reviewing global mental health indicators, the 65th World Health Assembly declared mental ill-health an important contributory cause to the global burden of non-communicable diseases, noting the need for a comprehensive and coordinated Mental Healthcare response. The Assembly thus urged all member states to develop national policies and strategies to promote mental health, improve healthcare systems to effectively and comprehensively prevent and treat mental ill-health, and promote human rights-based approaches to address the social determinants of mental health, including access to opportunities for income generation, housing and education (WHO, 2012).

A large majority of persons with mental health disorders live in low- and middle-income countries (LMICs), making up over 80% of the global burden of mental illness (Rathod et al., 2017). This represents a significant proportion of disability, with depressive, mood, psychotic and alcohol use disorders collectively accounting for almost one-fifth all disability in LMICs in 2004, (WHO, 2004) and 11.1% of the total disease burden in 2016 (Yatham et al., 2016).

In South Africa, a middle-income country, neuropsychiatric disorders ranked third in disability-adjusted-life-years lost (DALY) in the second South African National Burden of Disease Study (Bradshaw, 2004). The South African Stress and Health (SASH) study, also completed in 2004, determined that the lifetime prevalence (the percentage of individuals to be diagnosed at any time in their lives) for any mental disorder in South Africa is approximately 30%, whilst the WC province recorded the highest lifetime prevalence in the country, at 39.4% (Williams et al., 2008). There is need for an updated empiric assessment of total disability due to mental illness in South Africa (Jacob & Coetzee, 2018).

This preponderance of cases in LMICs is explained by a growing consensus that the prevalence of mental disorders can be explained by the social determinants of health; the contextual circumstances which one is exposed to during one's life – including rates of poverty, unemployment and inequality, access to basic services, the quality and support of inter-personal relationships, or the level of violence, trauma or law enforcement in communities (Lund et al., 2018).

Rates of mental ill-health occur in addition to higher rates of communicable and non-communicable diseases in LMICs, which all compete for finite and generally inadequate health system resources. Severe mental disorders, defined by the WHO as Schizophrenia and related psychotic conditions, Bipolar Mood Disorder and Moderate to Severe Depression (all of which are also linked to Substance Use Disorders), affect only 4% of the global adult population, but result in major morbidity and mortality, and are often associated with human rights abuses. Affected persons die 10-20 years younger than those in the general population, with the highest disparities recorded in LMICs. Unlike the prevalence of other common mental health disorders such as mild depression and anxiety disorders, which vary according

to socio-economic contexts, the prevalence of severe mental health disorders is uniform globally (WHO, 2017).

Following WHA Resolution 65.4, the World Health Organization (WHO) in its Mental Health Action Plan describes and quantifies the treatment gap of unmet need for mental healthcare services. An estimated 76% to 84% of persons with severe mental disorders in six LMICs surveyed did not receive any mental healthcare treatment in the year prior to the World Mental Health Survey of 2001 (WHO Mental Health Survey Consortium, 2004). The importance of addressing priority mental health conditions is outlined in the United Nations Sustainable Development Goal No. 3, which pertains to ensuring healthy lives and wellbeing at all ages; targets include the promotion of mental health and wellbeing and the strengthening of prevention and treatment of substance abuse (United Nations, 2016).

The effects of these high rates of untreated mental disorders (including substance abuse) can ultimately hamper countries' efforts to have a growing vibrant economy (Rathod et al, 2017), due to the indirect costs of decreased productivity or unemployment and the intangible costs of caregiver burnout, family stress and psychological suffering (Baingana et al., 2003). Thus, social determinants affect population mental health, and in turn a high prevalence of untreated or relapsed mental illnesses in communities impacts on broader societal ill-health. Lund et al noted on the basis of a systematic review that, although mental ill-health and poverty were related, the health effect of poverty alleviation measures (such as conditional cash transfers, loans and economic empowerment) was inconclusive, whereas interventions targeting mental healthcare (including community, family and individual-based cognitive behavioural, and pharmacological therapy) were generally associated with improved economic outcomes (Lund et al., 2011).

2.3. Mental healthcare services in South Africa and the Western Cape

Lower-and-middle-income countries have fewer financial resources to adequately equip and provide specialist staff for mental healthcare services. They subsequently spend far less on mental healthcare than richer countries, although there is much variability between LMICs (Jacob et al., 2007), and within countries. Up to one third of LMICs do not have mental health policies, guidelines or legislation (Saxena et al., 2007). There is thus a significant 'treatment gap' between need for mental healthcare services and resource availability (Rathod et al., 2017).

In a review of expenditure on Mental healthcare services performed in 2019, Docrat et al found that South Africa expended 5.0% (R214 Million) of its total public health budget during the 2016/2017 financial year, with 84% spent on in-patient care. Despite this expenditure, 3-month re-admission rates were at 25%, and the proportion of uninsured mental health patients who received the required in-patient and out-patient care was a mere 0.89 and 7.35% respectively. (Docrat et al., 2019).

The South African Mental Health Care Act (Parliament of the Republic of South Africa, 2002), which was promulgated in 2004, is consistent with international human rights standards, and makes provision for the decentralization and integration of mental health services into primary healthcare and the inclusion of community-based care. As such, there is greater impetus to provide treatment and rehabilitation in communities. However, this has not always translated into improved mental healthcare, with only a quarter of mental healthcare trained public sector

staff being employed in primary healthcare, whilst the majority is still based in specialist hospital services (Lund & Fisher, 2003).

Despite having a Child and Adolescent Mental Health Policy Framework since 2003 (Mokitimi et al., 2018), South Africa lacked an over-arching national policy on mental healthcare until the publication of the South African National Mental Health Policy and Framework in 2013 (South African National Department of Health, 2013).

The first objective of the policy is to scale up the decentralization and integration of mental health into primary healthcare services. The WHO notes that the rationale for better integration of mental health into primary care includes enhanced access, increased affordability and cost-effectiveness, and greater respect of human rights (WHO, 2012). Contributory objectives to this include the empowerment of mental healthcare users and workers, the fostering of evidence-based planning for mental healthcare services and the establishment of indicators within a monitoring and evaluation system for mental healthcare within the District Health Information System (DHIS). Specific mention is made in the policy of the importance of 'establishing and maintaining referral *and back-referral* pathways for mental health' (South African National Department of Health, 2014). Various research work is also ongoing within mental healthcare in LMICs, the most notable being the Programme for Improving Mental Healthcare (PRIME), which sought to generate evidence on interventions to integrate packages of care for priority mental health conditions into the primary healthcare platforms of LMIC countries including South Africa (Lund et al., 2016). Most provinces (including the WC) have not translated these documents into province-specific policies or strategic plans (Mokitimi et al., 2018), despite mental health services (and control over their budgets) being decentralized

to provincial level. Neither do any provinces in the country yet have a minimum data set of indicators being collected at mental health facilities.

Mental health services are organized by geographic referral areas within provinces. There are 3 460 outpatient mental health facilities in the country and 63 community residential facilities, of which approximately half of each being privately provided by the South African Federation for Mental Health (SAFMH). The WHO Assessment Instrument for Mental Health Systems Report for South Africa (2005), noted that despite endorsement of the integration of mental health into PHC, a small proportion of undergraduate training for both nurses and doctors in the country was devoted to mental health, and availability of treatment protocols and psychotropic medication for key mental health conditions varied widely (WHO, 2005). The report estimated there to be 0.28 psychiatrists, 0.45 medical doctors and 7.45 nurses per 100 000 population head count in the country. Although primary mental healthcare nurse practitioners are present in primary healthcare clinics, they are not allowed to initiate medication (only medical doctors can) but can continue patients on medication already prescribed. The 2020 Mental Health Atlas Report demonstrated that these shortcomings remained consistent in Africa over time, with an estimated 0.1 psychiatrists and 0.9 nurses per 100 000 population (WHO, 2020).

Although South Africa has mental healthcare management structures at national and provincial levels, mental healthcare services are under-resourced in healthcare districts (Lund et al, 2010). Primary mental healthcare services thus still lack the necessary resources, staff and psychotropic medications to deliver a quality service, more especially in rural and socio-economically under-developed provinces, but also in more developed provinces as well. There is a drive toward more sustainable, community-based care for patients with severe mental

health disorders, but this is not without its risks in the absence of policies and protocols for de-institutionalization of such patients. Such a project in 2016 attempted to de-institutionalize public sector mental healthcare patients from government-sponsored inpatient private care facilities, resulting in the deaths of 141 patients in less than a year, due to under-equipped community residential facilities (Ornellas & Engelbrecht, 2018).

2.4. Primary mental healthcare services and frameworks

The World Health Organization's Service Organization Pyramid for an Optimal Mix of Services for Mental Health describes an integrated continuum of care, from the informal care which takes place within families and communities, through to long-stay and specialist psychiatric facilities (WHO, 2003) (Figure 1).

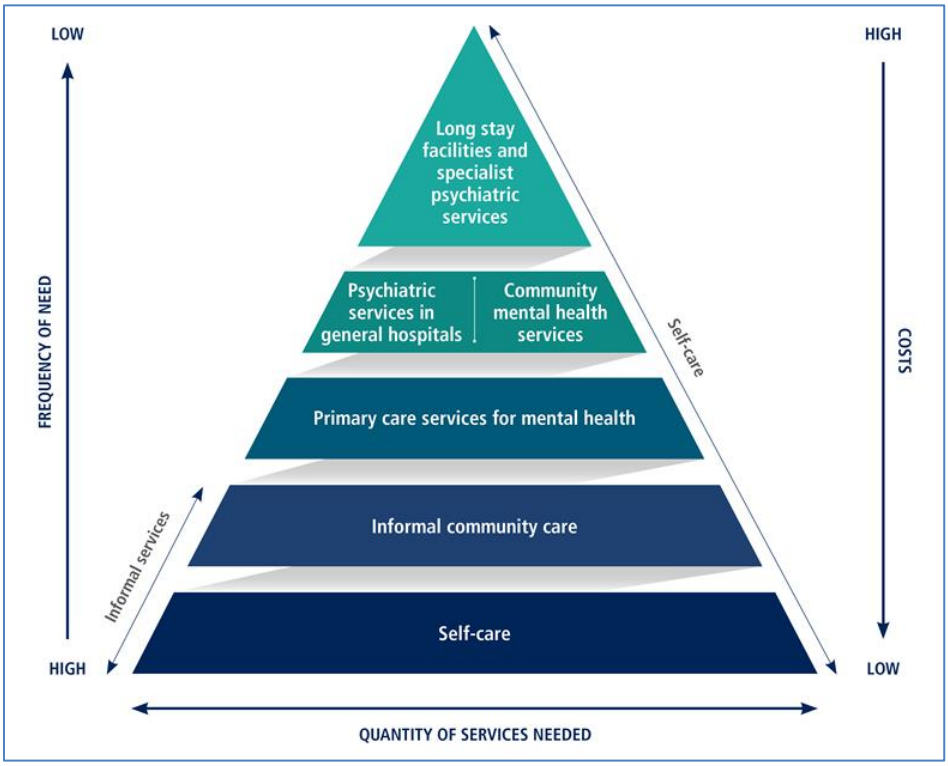

Figure 3: World Health Organization service organization pyramid for an optimal mix of mental health services (Funk, 2008)

The importance of self-care is highlighted both vertically throughout all levels of care, as well as forming the broad foundational base upon which the other layers of care rest. However, this does pre-suppose the ability to understand one's need and engage in self-care behaviours. The South African Mental Health Policy and Framework adopted the WHO model. Specialist psychiatric services feature as the pinnacle and primary healthcare and community-based services as the foundation. Within this model, the cost and the frequency of care required are inversely related as one traverses down the referral pyramid, with self- and informal community care costing the least in terms of expenditure but being required more frequently, and in-patient psychiatric services provided by trained professionals being the most expensive and less frequently required. Thus, higher levels of specialist psychiatric care must be linked to a greater quantity and frequency of mental healthcare services provided by generalist healthcare workers on the primary care platform.

The primary healthcare platform itself is however not homogenous and includes a range of different institutions and actors (Figure 4). Whilst the primary healthcare clinic is a port of entry into the platform, each clinic also interacts with local Community Healthcare Workers, PHC Outreach Teams, Social Welfare and Development offices, local government Environmental Health offices. Clinics also receive outreach and clinical guidance from district, regional and specialist facilities, and standards support and policy guidance from national department of health structures (Mohamed & Asmall, 2015).

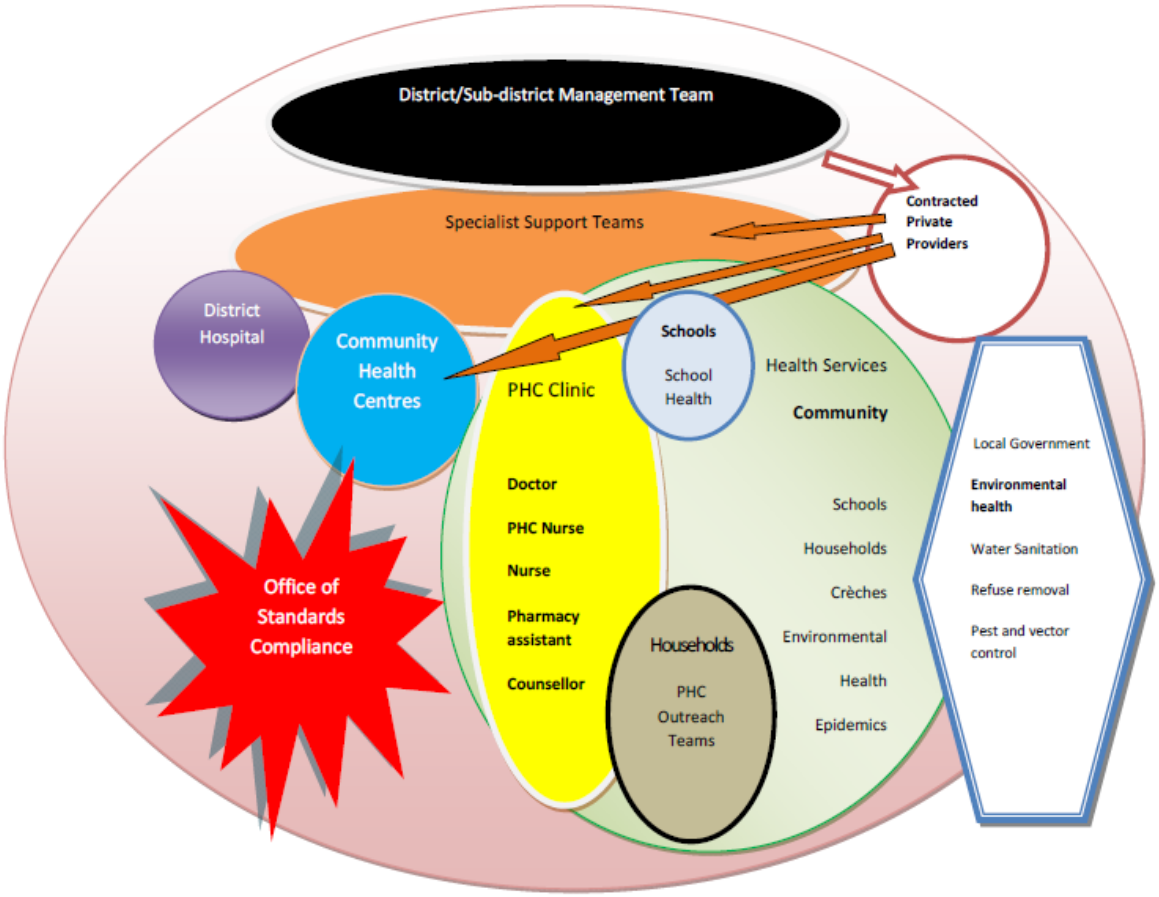

Figure 4: District Health Services Model (Mohamed & Asmall, 2015: 15)

These various components of the primary healthcare platform are meant to interact with mental healthcare users and their families across a 'continuum of mental health in order to provide care via the Integrated Chronic Disease Management model (ICDM) (Figure 5), which was developed and implemented in South Africa by the National Department of Health in 2010, with an emphasis on facility reorganization, supportive clinical and self-management of chronic illnesses and strengthening of structures outside of healthcare facilities to ensure smooth transitions from facility to community-based care. Sustainability and scalability of this and similar frameworks could improve the management of chronic diseases such as severe mental illness in communities, but is dependent on change management, mentoring, supervision, support and addressing resource challenges. (Mahomed et al., 2016)

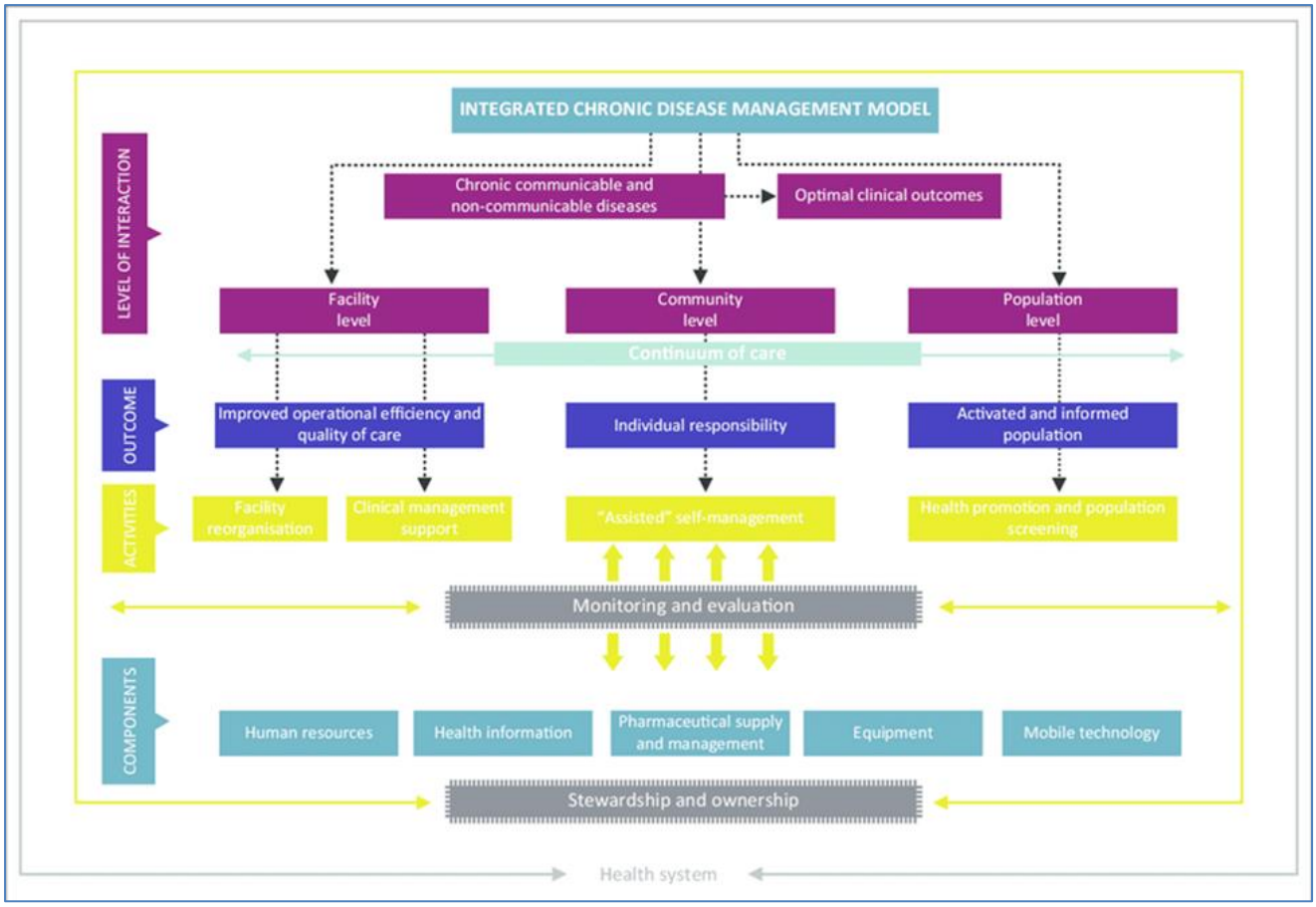

Figure 5: Integrated Chronic Disease Management Framework (Mahomed, Asmall & Voce, 2016: 8)

Care of mental healthcare users in the community does not only fall to healthcare workers in facilities but involves a wide range of actors who play a role in supporting mental healthcare users and their families (WHO, 2021). This care network includes community nurses, community care workers, counsellors, and other civil servants such as teachers, police, social workers and youth workers. In addition, traditional healers, members and leaders of faith groups and village elders play crucial roles

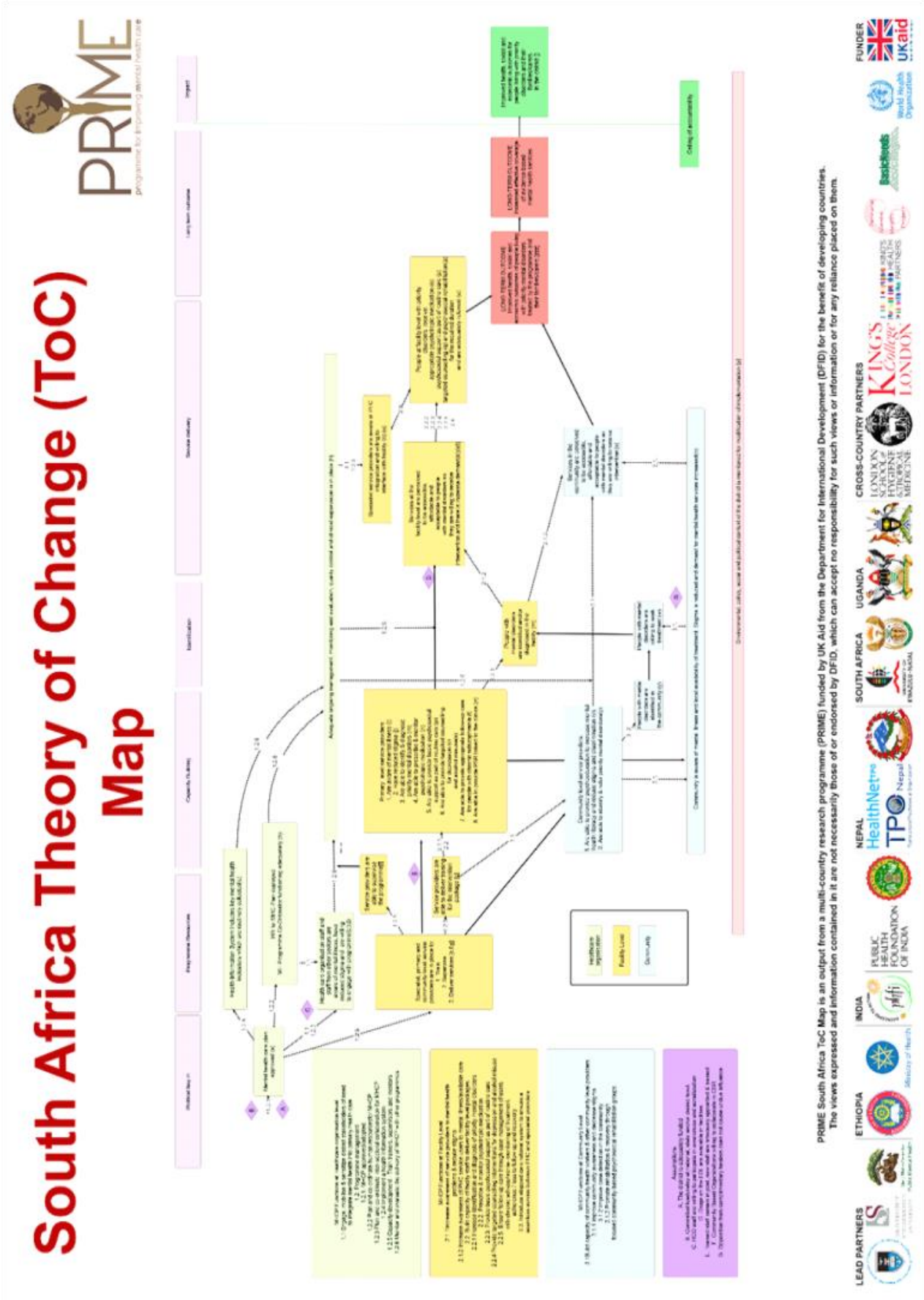

Figure 6: South African Mental Healthcare Services Theory of Change Map (PRIME Consortium, 2014)

An influential and impactful research consortium called PRIME [1]developed a Theory of Change map for the implementation of interventions designed to strengthen mental health services and improve mental health outcomes. Interventions range from garnering political buy-in, adequately resourcing, and building capacity for identification of mental ill-health in communities and mental health service provision. This theory suggests that specialist service providers should be aware of PHC integration and should be willing to communicate with primary healthcare facilities in ensuring a smooth transition to the primary care platform.

Much of the academic work investigates the continuity of care (COC) of patients from identification at primary and community care levels to higher levels of district and specialist psychiatric care (Figure 7), with less attention being paid to COC after diagnosis and discharge of patients from mental healthcare facilities. However, the importance of strengthened *back-referral* is noted in the South African national mental health policy (PRIME Consortium, 2014).

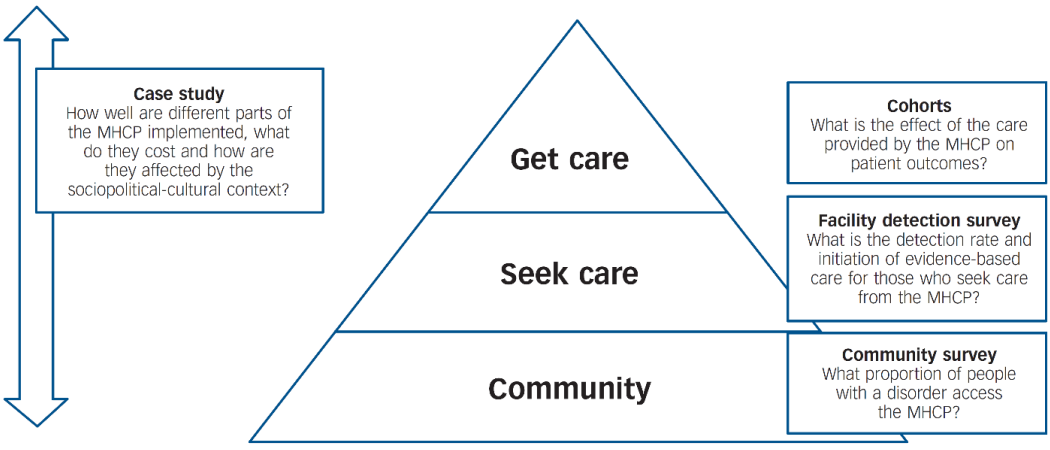

Figure 7: Programme for improving mental healthcare (PRIME) study designs (De Silva et al, 2016: 64)

[1] The Programme for Improving Mental Healthcare (PRIME) is a consortium of research institutions and ministries of health in five countries in Asia and Africa (Ethiopia, India, Nepal, South Africa & Uganda), with partners in the UK and the World Health Organization (WHO), and was supported by the UK government from 2011 until research activities ended in 2017. (source: http://www.prime.uct.ac.za/prime-about-us)

Mental healthcare is complex due to the multidisciplinary nature of care required, necessitating teams of healthcare providers engage with patients and each other to maintain remission of patient symptomatology and adequate patient wellbeing and function. Care planning and co-ordination is thus integral to success of patient management. Due to the lack of adequate resources in the South African primary healthcare context, Petersen & Lund point out the 'revolving door' phenomenon that has accompanied South Africa's attempts to decentralize care – referring to the high rates of re-admission due to bed-pressure induced early discharges, psychotropic drug availability, poor treatment adherence, and the discontinuity of appointments amidst a lack of capacity within community-based care (Petersen & Lund, 2011). A compounding problem was the lack of indicators and information systems to monitor the de-institutionalized care of mental healthcare users with priority conditions.

2.5.Mental health continuity of care measurement and studies

Continuity of care has been defined as the 'degree to which a series of discrete healthcare events is experienced as coherent, connected and consistent with a patient's medical needs and personal context' (Haggerty et al., 2003). Haggerty et al outline three distinct types of continuity, these being *informational* (the use of historical information to make appropriate care decisions), *managerial* (rational consistency in approach to management of a health condition) and *relational* (specifically the continuation of the therapeutic relationship between a patient and multiple service providers), of which the latter is the primary concern of this research (Haggerty et al., 2003).

Continuity of care has been identified as a marker of quality healthcare by international bodies and expert groups, which have sought to quantitatively define the concept using a

series of parameters to measure mental healthcare continuity across health districts and between countries. In 2004, an expert panel from the Organization for Economic Co-operation and Development (OECD) published a series of indicators related to treatment, outcomes, coordination and continuity of care. Post-discharge COC was defined as 'the number of persons hospitalized for primary mental health diagnoses with an ambulatory mental health encounter with a mental healthcare practitioner within 7, and within 30 days of discharge, divided by the number of persons hospitalized for primary mental health diagnoses (Table 2) (OECD, 2004). In line with the 30-day indicator, Western Cape psychiatric services utilize re-admission within 30 days as the operational definition of a 'failed discharge'.

Table 2: Summary Table of recommended Continuity of Care mental healthcare indicators (OECD, 2004)

Area	Indicator Name	Numerator	Denominator
Continuity of Care			
	Timely ambulatory follow-up after mental health hospitalisation	Number of persons hospitalised for primary mental health diagnoses with an ambulatory mental health encounter with a mental health practitioner within i) 7 days and ii) 30 days of discharge.	Number of persons hospitalised for primary mental health diagnoses.
	Continuity of visits after hospitalisation for dual psychiatric/ substance related conditions	Number of persons with at least four psychiatric and at least four substance abuse visits within the 12 months following discharge.	Number of hospital discharges for dual diagnosis of psychiatric disorder and substance abuse.
	Racial/ethnic disparities in mental health follow-up rates	Number of persons with at least one visit in 12 months after initial visit stratified by race/ethnicity.	Number of individuals with a mental health-related visit.
	Continuity of visits after mental health-related hospitalisation	Number of persons with at least one visit per month for six months following hospitalisation.	Number of persons hospitalised for psychiatric or substance-related disorder.

Continuity of care has since been included as a mental health service indicator in the WHO Mental Health Atlas 2014 Report (Table 3), with low-income countries (47%), Eastern Mediterranean (55%) and American (34%) regions displaying the lowest percentages for patients with a severe mental disorder seen within 30 days post-discharge from in-patient care (WHO, 2015). There have been numerous studies of COC, however the literature is dominated by studies performed in high-income countries.

Table 3: Mental Hospital indicators by WHO region and World Bank country income group (WHO, 2015)

	Facilities (total population per facility, in millions) (N = 153)	Beds (rate per 100,000 population) (N = 141)	Admissions (rates per 100,000 population) (N = 118)	Continuity (% discharged patients seen within a month) (N = 26)
Global	**2.85**	**6.5**	**35.8**	**73%**
WHO region				
AFRO	8.36	1.9	10.5	84%
AMRO	1.34	8.7	44.2	34%
EMRO	4.15	4.2	27.9	55%
EURO	0.64	35.0	238.6	81%
SEARO	28.78	2.1	14.5	89%
WPRO	7.48	3.5	2.8	79%
Income group				
Low-income	11.67	1.6	7.6	47%
Lower-middle income	4.40	4.0	14.4	80%
Upper-middle income	1.78	14.4	41.9	63%
High-income	0.78	41.8	142.3	76%

The proportion of missed follow-up consultations after discharge from psychiatric hospitals has varied globally from 20% to 50% (Swenson & Pekarik, 1988). More recent studies demonstrate similar rates. Two different research studies performed in the USA reported 18.4% (95% CI 12.36% - 24.44%) (Kruse & Rohland, 2002: 531) and 36.2% (95% CI 29.72% - 42.68%) (Compton et al, 2006) missed follow-up consultations respectively.

Kruse & Rohland, who had based their study of 158 discharged psychiatric patients in the Midwest United States in 2002, found similar risk factors. They found that significant predictors for missing a follow-up consultation after discharge were coming from a rural location (OR 5.04, $p<0.05$) and having a follow-up date within two weeks (OR 0.23 $p<0.01$), whilst being Caucasian was found to be significantly protective (OR 0.88, $p<0.05$). The authors did not report confidence intervals for the odds ratios.

A larger study by Compton et al, of 234 mostly low-income African American patients, assessed predictors of missed first appointments at primary health care facilities after being

discharged from a public sector hospital between December 2003 and July 2004. Although unadjusted odds ratios were not reported, the study did report a significant association between missing the initial appointment and race; employment status, and psychiatric diagnosis and the presence of a concomitant personality disorder ($p<0.2$). The study reported significant predictors of missed appointments as having involuntary legal status at the time of discharge (ie patients that had absconded) (OR 2.6, 95% CI 1.41-5.0); patients without an established outpatient clinician (OR 2.4, 95% CI 1.3-4.5); patients with poor social support (OR 1.8, 95% CI 1-3.34) and the interval in days from discharge to follow-up (OR 1.04, 95%CI 1.01-1.07) (Compton et al., 2006).

In 1998, a still larger study of 542 psychiatric readmissions in the United States concluded that patients who did not have an outpatient consultation within two weeks of discharge were twice as likely to be readmitted in the same year compared to those who had an appointment within two weeks of discharge (Nelson et al., 2000). In addition, the authors showed that a long interval from discharge to initial post-discharge appointment is associated with lapses in COC. Unfortunately, there are no published articles examining the reasons for missed initial appointments after hospital discharge in South Africa.

2.6. Barriers and interventions for mental health continuity of care

2.6.1. Barriers to mental health continuity of care

The phenomenon of poor COC is not specific to LMICs, with attention also being paid to this in literature stemming from High Income Countries as well. Mitchell & Selmes (Figure 8) created a framework of factors inducing failure to maintain continuity with mental health services, using a systematic review of research performed mostly in the USA and the UK.

Therein they note that the causes of discontinuity of care are multiple, and dependent on factors related to;

- Patient factors such as the perception of cost and benefit of care
- Illness factors which may result in poor insight into one's clinical condition or ability to make rational health-seeking decisions
- Healthcare provider and system factors such as communication styles of healthcare professionals, lack of adequate explanation and inconvenient appointment scheduling.
- Socio-economic factors such as lack of financial and social support (including outright stigmatization) to access transport, childminding services or social welfare (Figure 9) (Mitchell & Selmes, 2007).

A nuance included in the Mitchell & Selmes model is the recognition that care discontinuity may be intentional or non-intentional, with simple forgetfulness and lack of reminders possibly playing a role as well. Further, continuity and discontinuity of care are presented on a spectrum, with patients ranging from ideal attendance, to partial attendance to total disengagement (Figure 9) (Mitchell & Selmes, 2007).

Box 1 Key predictors of non-attendance

Environmental and demographic factors

- Younger age
- Lower socio-economic status
- Not having health insurance (where health-care is not free at point of delivery)
- Poor adherence to psychotropic medications
- Homelessness
- Transport problems, distance from clinic

Patient factors

- Forgetting, oversleeping, getting the date wrong
- Being too psychiatrically unwell
- High trait anxiety
- Lower social desirability scores
- Dismissing attachment styles

Memory/cognitive problems

- Dementia

Information and health beliefs

- Poor insight into illness

Illness factors

- Personality disorder
- Substance misuse (alone or in combination with other psychiatric disorder)
- Neurotic disorders
- Diagnosis unclear or cannot be established

Clinician and referrer factors

- Poor communication between the referring practitioner and the patient
- Patient's disagreement with the referral
- Referrer's scepticism about the value of psychiatry
- Poor-quality referral letter
- Longer delay between the referral and the appointment (or between assessment and treatment)
- Early stages of treatment
- Quality of therapeutic alliance
- Non-collaborative decision-making

Figure 8: Key Predictors of mental healthcare service user non-attendance (Mitchell & Selmes, 2007: 423)

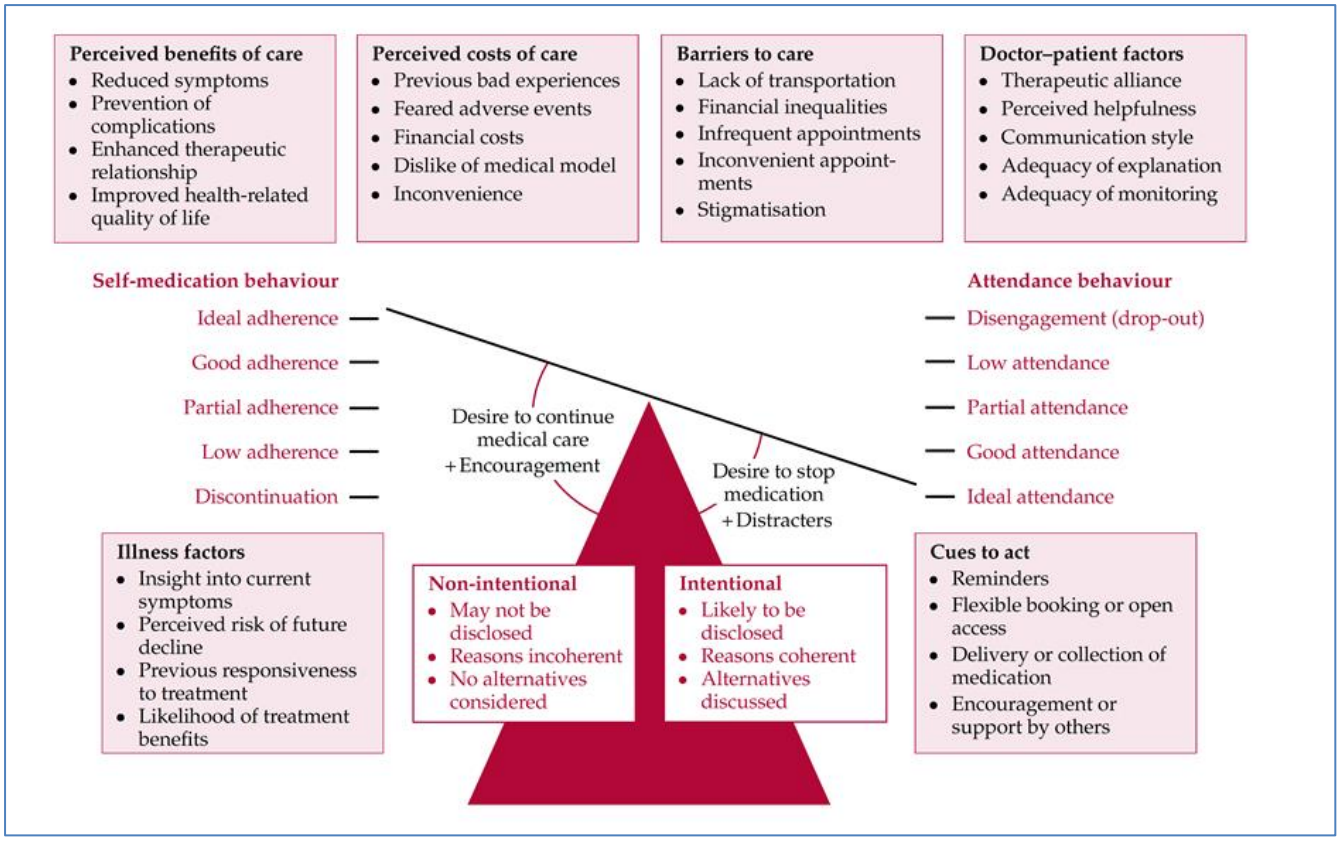

Figure 9: Factors influencing mental health continuity of care (Mitchell & Selmes, 2007: 423)

The authors of the paper noted that health-seeking behaviour is not one action, but multiple actions (Figure 10). These range from attendance and availability of screening initiatives in local communities, delays in seeking treatment when symptoms present themselves, reluctance to accept a diagnosis and treatment when these are given, and following thereon a failure to attend follow-up appointments and continue treatment (Mitchell & Selmes, 2007).

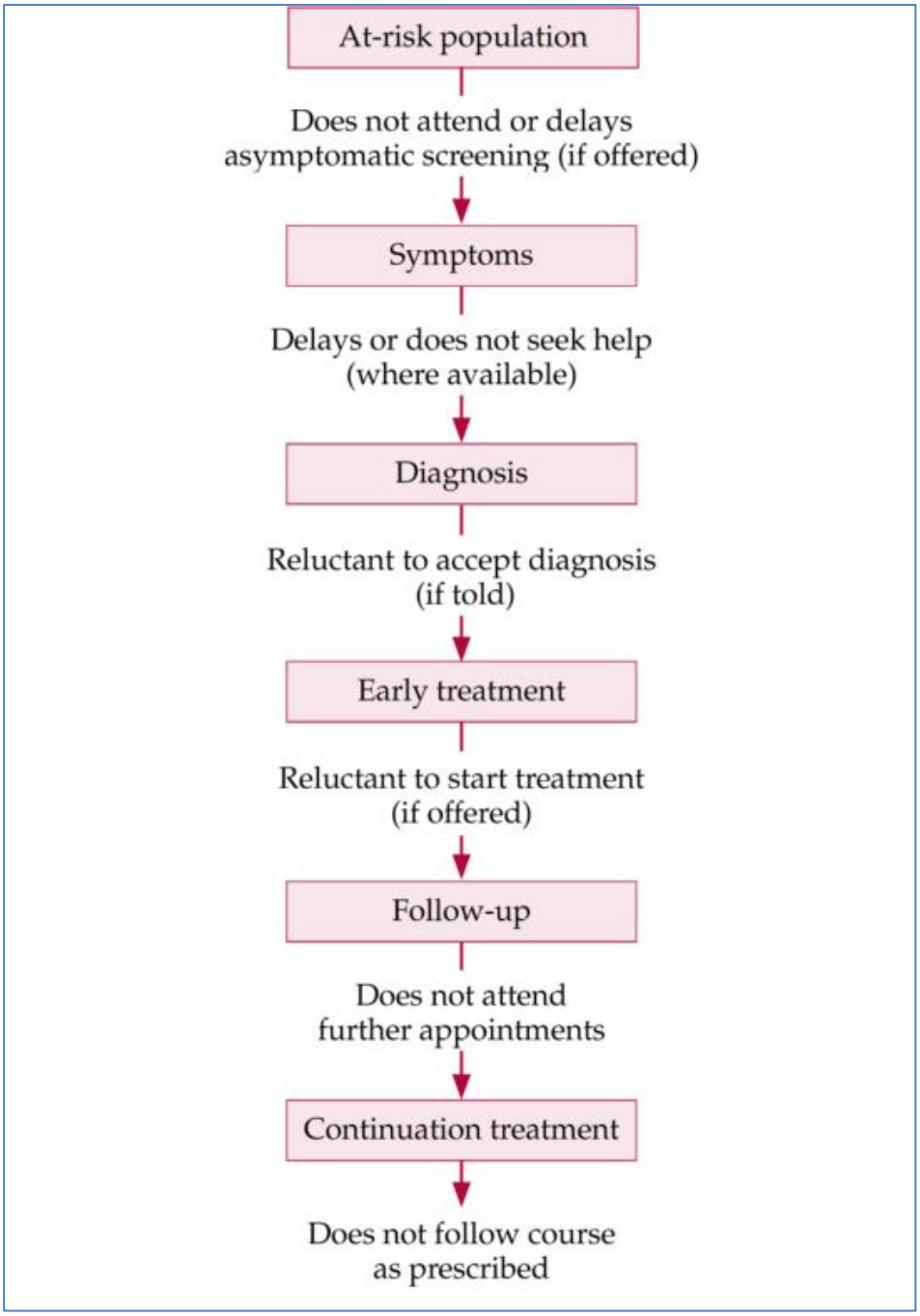

Figure 10: Stages of difficulty for mental healthcare users in following medical advice (Mitchell & Selmes, 2007: 423)

2.6.2. Interventions to improve mental health continuity of care

Due to the barriers of mental health COC being multifactorial, interventions which have been attempted to improve this are similarly so. Discharge from mental healthcare services has been noted in the literature as a critical step in the treatment process, which can be emotionally stressful as patients transition from controlled hospital environments with intensive monitoring and directly observed treatment, back to their communities and contact with psychosocial stressors such as poverty and family discord. Interventions that target patients who are to be discharged to the primary care platform can be attempted before or after discharge, with some interventions spanning across both time periods to improve care continuity (Tyler, 2019)

2.6.2.1. Pre-discharge In-Patient Healthcare Service Interventions

A focus of pre-discharge interventions is planning of the eventual discharge itself. This requires contact between various healthcare professionals on the in-patient team with each other and with structures in the patient's community, to plan suitable outpatient treatment options.

Certain interventions focus solely on maintaining responsibility for care with the discharging hospital, effectively cancelling the role of the primary healthcare platform. This 'continuation of care' model was trialed in Israel in 2012 on 35 mental healthcare users. Patient follow-up appointments were continued in the actual ward in which they were treated, by the same in-patient team. The researchers measured pre- and post-intervention hospitalization rates and days spent in hospital (which both dropped significantly over an 18-month period (Juven-Wetzler, 2012).

In a retrospective case comparison of patients diagnosed with schizophrenia in the United Kingdom, patients that were managed via an Integrated Care Pathway (ICP) (defined as a 'multidisciplinary plan of care that provides detailed guidance for each stage in the care of a patient with a specific condition over a given period of time' (Hall & Callaghan, 2008: 1255) had shorter average lengths of stay in hospital than patients not managed by an ICP, but had no significant differences in terms of 7-day follow-up or rate of readmission (Attfield et al, 2017). ICPs were initially developed to reduce cost and improve care quality and not necessarily affect change in referral systems. The authors noted a specific need for design of ICPs for specific mental health conditions in collaboration with users and their mental health nurses, which was not the case in this study.

Abraham et al found that increased pharmacist involvement in in-patient and post-discharge care co-ordination could assist with understanding the need for antipsychotic medication (Abraham et al., 2017), and advocated for greater involvement of this group of allied health professionals in discharge planning. A Canadian programme evaluation focused on a new community-based discharge planning model known colloquially as 'in-reach', which utilized the services of a discharge planner who was based on the primary care platform, who visited in-patients whilst still in hospital to offer them discharge services. This method was found to have decreased readmission rates by 40% over time, by having the discharge planners liaise with the hospital and services in the community (Jenson et al., 2010).

In a randomized controlled trial conducted in Switzerland in 2016, 101 in-patients were randomized to either be discharged by the standard process for follow-up to a community psychiatrist or receive transitional case management support from a case manager, a nurse, or

a social worker. Patients were randomized at admission, with the intervention group being contacted during their inpatient stay to propose a post-discharge plan of action with the patient and his or her treating providers in the area of residence. The case manager met with patients three times in hospital to plan this discharge, and then conducted a home visit to discuss treatment with the patients next of kin. After discharge, transitional case management was tailored according to need, from either face-to-face contact up to twice a day, to phone calls and on demand visits if required. Case managers would discharge a patient from their service after a final meeting with a medical doctor and write up of a written case transition report. This intensive RCT found that there was increased short-term engagement with healthcare services, but after 3 months, the effect diminished, and at 1-year post-discharge, there were no differences in readmission rate and engagement with healthcare services (Bonsack et al., 2016).

Using a prospective study of 135 patients, a nursing discharge programme was trialed in the UK in 2017, which assessed the impact of nursing providing discharge information to patients, direct distribution of medication to patients from the hospital, and a 7-day follow-up call, on patient appointment continuity. Such patients were found to be more likely to report treatment satisfaction and follow their post-discharge treatment plan (Virgolesi et al., 2017).

Given the variability in discharge processes both between institutions, and for the different patients at the same institution, the use of discharge checklists ensures that a standard set of actions occur at each discharge. Using a pre-post intervention design, researchers in Australia found that the consistent use of a standardised, evidence-based checklists over a three-month period did not however lead to statistically significant decreased rates of admission compared to the preceding 3 months (Khanbhai et al., 2018).

The importance of patient's understanding of their illness has been highlighted, due to the lack of insight which commonly occurs in patients with mental ill-health. Self-care training at discharge has thus been touted as a worthwhile endeavour, given that it is an opportunity window after patient symptom control has been achieved, a time point at which patients are likely to have better insight and agency. Using a longitudinal cohort design for 46 patients admitted to a psychiatric hospital with Schizophrenia, researchers in Iran oversaw 6 nursing information sessions in hospital and 6 further sessions at home in the three months post-discharge period for 23 patients in the intervention group. This group was found to demonstrate improved clinical symptoms and a higher level of knowledge than the control group, with statistically lower frequency of readmission to hospital (Khaleghparast, 2014).

Inclusion of patient caregivers in the discharge planning process has, however, found some success. Lin et al noted that although caregivers have not routinely been included in the discharge process, this could assist in adoption of a caregiver need-oriented service to reduce the burden of mental illness on patient families. Using a pre- and post-intervention quasi-experimental survey methodology in a psychiatric hospital in Northern Taiwan, researchers found that an intervention group of patients and caregivers who received support from nursing care coordinators experienced far reduced levels of caregiver burnout than the control group. Unfortunately, the ultimate effects on patient readmission and follow-up were not measured (Lin et al., 2018).

A similar, more resource intensive trial which did measure rehospitalization rates was performed in Germany from 2011 to 2014. Mental healthcare patients from two psychiatric hospitals were randomized to receive post-discharge network coordination or not. This

included an interview with an experienced social worker prior to discharge, during which notes were made of all psycho-social family and community support network, and a crisis plan was drawn up, with one person from the social support network delegated as the network representative. Social workers met with patients within one-week post discharge and then scheduled appointments as necessary, both one-one-one and with other network members. The intervention was terminated at 3 months, after which the social support network was still encouraged to support the patient. Unfortunately, both in the short and long term, the intervention showed no efficacy on rates of rehospitalization, improved social support or quality of life as reported by patients. Researchers noted that such patients had small social networks, and relationships therein often conflictual and unstable (Hengartner et al., 2016).

Generally, human resource-intensive interventions are not sustainable options in the long term, due to the cost of human resources, and the current workload on mental healthcare staff, both in in-patient and ambulatory services. Brief Critical Time Interventions (BCTI) in Psychiatry, despite the name, may last up to 90 days and requires connection of patients to community-based resources (such as housing and foodbanks), communication with caregivers and teleconsultation by care coordinators. During such programmes, improved treatment adherence and follow-up is noted, but these are generally not sustained over time.

Using a cohort study design on patients in the USA found to have had at least one readmission in the last for a serious mental health condition, Shaffer et al demonstrated that exposure to a BCTI decreased the rates of readmission vs controls with statistical significance up to 30 days (28% vs 47%; $p<0.001$), but not thereafter up to 180 days (Shaffer et al., 2015).

2.6.2.2. Post-Discharge Primary Healthcare Service Interventions

Discharge interventions which begin after discharge generally focus on either increased outreach and communication from primary healthcare services, or linkage of patients to psycho-social and financial supports to enable better treatment adherence and follow-up.

A 90-day transitional care intervention for 60 male mental healthcare users who had been discharged from a Pretoria psychiatric hospital was trialed in South Africa in 2018. This included four phone calls and home visits which focused on appointment reminders, medication adherence and psychoeducation, but there was no effect on readmission rates found (Botha et al., 2018).

Bauer et al, however, using a Randomized Controlled Trial design in Germany in 2012, found that increased communication in the form of phone SMS reports from patients and supporting information from treating clinicians over 16 weeks post-discharge, resulted in significant decreases in readmission for 102 of 165 female patients with eating disorders randomized to the intervention group (Bauer et al., 2012).

Due to the resource-intensive requirement, follow-up of patients' post-discharge has also been targeted at individuals deemed to be at higher risk of psychiatric relapse. Utilizing a community case manager model for patients with a history of suicide attempt, researchers in Queensland Australia had case managers follow-up the intervention-randomized group of sixty such male patients for a year post-discharge. The Intensive Case Management (ICM) arm received weekly face-to-face contact with their community case managers, and outreach telephone calls from experienced counsellors, vs the control arm who received standard post-discharge care. Males in the intervention arm had significantly improved depression, suicidal

ideation and quality of life scores. They also had more contact with formal mental healthcare services and reported greater service satisfaction rates. There were no suicides reported in either intervention or control arm in the 12-month study period (De Leo & Heller, 2007).

The use of newer forms of patient communication, such as telemedicine, has led to new models of patient-provider interaction being studied. This can be particularly useful for areas of countries which are difficult to access either due to geographic or financial reasons and may be a cost-effective option for patients if the communication infrastructure is present and already paid for. This also enables patients to remain in their communities, even though there is a general lack of healthcare infrastructure and expertise in marginalized and rural areas. A psycho-educational programme was developed and delivered to 51 in-patients in rural Australia. Thereafter, 24 patients were discharged by videoconference which also involved the local general practitioner and received six further sessions of the psycho-educational programme at home. There were less readmissions and treatment side-effects noted in the intervention group over a 12-month period, with greater treatment adherence and self-reported satisfaction rates (D'Souza et al., 2000).

2.6.2.3. Post-Discharge Psycho-Socio-Economic Support interventions

Multiple care continuity interventions studied have focused on the community context and support offered to mental healthcare users outside primary healthcare structures. This includes community outreach from mental healthcare workers, to psycho-social support from peer groups, to cash and other resource transfers which may facilitate greater engagement and maintenance of treatment.

Post-discharge empirical studies focus on a range of different strategies to improve COC for mental healthcare patients once discharged from their in-patient stay. These activities are heterogenous and range from maintaining an ongoing relationship from the discharging and referring institution, to linkage and maintenance of social supports in community, to peer and group support therapy, to ongoing support from higher levels of care, such as Assertive Community Treatment (ACT) teams. These are divided into short-term (generally 6-12 month, which most studies focus on) and long-term strategies (beyond 12 months).

Interventions just after discharge included Motivational Aftercare Planning (MAP), Brief Treatment Engagements (BTE) and Case Management (CM). These all include differing proportions of a mix of patient-provider engagements, with different strategies emphasized in each. A large mixed methods cohort trial (of 300 discharged mental healthcare users) in Brisbane Australia made use of MAP at discharge to provide patients with advanced forewarning of triggers for early relapse, with evidence of improved patient satisfaction with the new discharge process (Kisely, 2017). Smelson et al similarly ran a cohort study of 52 patients with mental illness and substance abuse, trialing the intervention of psychoeducation, psychotherapy, skills training, medication management and relapse prevention both at discharge and for 5 hours per week with care coordination and teaching performed by trained counsellors. More than double the percentage of patients in the intervention group attended their outpatient appointment within 14 days post-discharge when compared to the control group (69% vs 33%). Researchers also determined that mental healthcare users were more likely to still be engaged with mental healthcare users after 8 weeks (Smelson et al., 2012).

Various researchers have also reviewed the need to provide linkage to social supports. Noting the link between institutionalization for mental healthcare and homelessness, Chen et al trialed the use of Critical Time Interventions (CTIs), short-term psychosocial rehabilitation programmes to assist mental healthcare users transition back from institutionalized life back to communities, designed specifically to provide housing stability and ensure continuity of engagement with ambulatory mental healthcare services (Chen, 2014). In CTI, patients are encouraged to gradually take over responsibilities for ensuring their COC over time. Challenges these individuals face include loneliness, isolation and the need to navigate fragmented care systems (Chen, 2014). The Chen study utilised a grounded theory approach, to survey 12 CTI workers on their opinion of programme success. as extra supports in the transition to community living, but noted the importance of establishing a transient triangular relationship between patients, CTI workers and patient's primary supports (commonly social workers and psychiatrists), who could assist them with food, transport, welfare, education and employment opportunities, social connections and immigration issues over the long term. Forchuk et al, noting the number of mental healthcare users without any fixed abode or discharged to shelters performed an experimental study in London, Canada, aimed at decreasing rates of homelessness in mental healthcare users post-discharge. Of 14 recently discharged mental healthcare users at risk of homelessness, 7 were randomized to an intervention group which were provided with immediate linkage to housing assistance, and had both their first and last month's rent paid for them, with the control group receiving the usual post-discharge care. At months 3 and 6, all intervention group participants surveyed had maintained their housing payments, whereas in the control group, all but one had remained homeless (Forchuk et al., 2008).

Further person to person strategies which have been trialed include peer-to-peer and group therapy sessions.

A group of 75 participants in Israel in 2000 were divided by community clinics attended into a control and an intervention group, which provided an opportunity for mental healthcare users to have short-term transitional therapeutic counsellor-driven 're-entry' group meetings with trained psychotherapy counselors using a psychoeducational approach, covering mental illness, knowledge about treatment, and sharing of best practice in relationship management. The percentage of patients which maintained engagement with outpatient community mental health services was statistically significantly higher in the intervention group at 3-months (85.7% vs 51.5%) and after 1 year (78.1% vs 36.4%, $chi^2 = 12.1$, $p<0.002$), with less hospitalizations as well (39.4% vs 14.6%) (Kariel-Lauer et al., 2000). A similar approach in Canada in 2016, in utilized 6 weeks of post-discharge peer and environmental support to encourage and facilitate greater independence in illness management. There were no changes found in pre- and post-analysis of psychiatric symptomatology or readmission rates one month post-discharge, but improvements were noted in community functioning, integration and self-reported quality of life, suggesting that brief interventions may support better transition into communities, but further investigation regarding effectiveness for relapse control is necessary (Kidd et al., 2016).

Pure peer-support driven interventions are rarer, with less formal research performed in this area. Two empiric studies have been performed in Australia. Lawn et al reviewed the number of bed-days saved by a peer-to-peer support intervention of weekly group meetings themed on wellness, safety and treatment progress over 3 months in 2008. The evaluation determined a saving of 300 bed days over 3 months and related cost saving of over $100 000 AUS (Lawn

et al., 2008). A more recent Australian peer-to-peer support program in 2017 reviewed 38 mental healthcare users who had received individualized practical and emotional support over an 8-week period following discharge f. Self-reported mental health recovery, wellness and re-admission rates were reviewed at the end of the period, with improvements self-reported in functional and clinical recovery and a reduction in hospitalization (Scanlan et al., 2017).

Lastly, the use of ACT teams refers to a heterogenous model of community mental health services which is used to facilitate deinstitutionalize and successfully reintegrate mental health care users into their community of origin. It refers to a broad range of activities, including outreach services to homes and facilities, delivery of mental healthcare services in communities and a tighter integration of holistic, continuous mental healthcare services for patients (Bond & Drake, 2015). Mental health researchers have noted their effectiveness in reducing the revolving door phenomenon and improving the social and occupational functioning of mental healthcare users at high risk of relapse (Lund & Petersen, 2011). In South Africa, Botha et al had previously reported on reduced readmission rates and improvements in social functioning for 29 patients discharged from Stikland Hospital, in Cape Town, South Africa, who had received ACT interventions over a period of 12 months compared to controls, but raised concerns with regards to sustainability over time. In a randomized controlled trial, they committed an intervention group of 30 recently-discharged mental healthcare users from Stikland Hospital to receive support from care coordinators, who focused on maintaining engagement with community mental health services, ensuring compliance with medication and making use of existing community resources, such as Occupational Therapist and Psychologist services. A control group of 20 patients received standard post-discharge care. Although there were no full-time workers dedicated to the intervention, most healthcare consultations facilitated through the study occurred as home

visits, with a review of rehospitalizations over a period of 36 months. Patients in the intervention group had significantly less readmissions over time and spent less days in hospital during the period. Thus, long term sustainable solutions do require logistically feasible and affordable models for the context in which they are implemented (Botha et al., 2014).

As can be seen above, the assumed reasons for appointment discontinuity vary widely, including both individual and systemic factors. Methodologies followed to investigate discontinuity have also thus varied, and therefore the implicit and underlying theories of change need to be made explicit, in order to be interrogated (Tyler, 2019).

2.7. Conclusion

There is a significant burden of severe mental illness in low- and middle-income countries, of which South Africa is a typical example. Constraints in health department budgets and a lack of long-term policy direction have resulted in district and primary healthcare systems which are unable to effectively and efficiently meet the overwhelming demand for care.

Continuity of care is a vital element of effective mental healthcare service delivery and maintenance of psychiatric symptom control and improved social, economic and occupational functioning. Many service frameworks which have been developed globally and within South Africa emphasize the need to ensure COC for effective treatment.

This requires the effective integration of mental health-specific services at higher levels of the service pyramid with transversal and community-based services on the primary care platform. The time period directly after in-patient admissions for severe mental ill-health has been noted in the literature as a high-risk period for discontinuity with mental healthcare service appointments, treatment non-adherence and symptom relapse. Continuity of care for this period is defined as the number of persons hospitalized for mental health diagnoses with an ambulatory encounter with a mental healthcare practitioner within 30 days (OECD, 2004).

Thus, multiple interventions to improve the COC for mental healthcare-users post-discharge have thus been attempted and studied globally, spanning from in-patient interventions to interventions conducted from mental health services on the primary care platform, and broader interventions to provide psycho-social and economic support in communities. Interventions which have been found to successfully maintain care continuity are generally resource-intensive and must be tailored to local health system constraints in order to be implemented sustainably in a manner which is logistically feasible.

3. Purpose, Aims & Objectives

3.1.Purpose of the Study

Continuity, when transferring patients from higher levels of the health system to the primary care platform, is foundational to maintaining control of mental illnesses by ensuring efficient, consistent and ongoing support to patients and their families. The formal quantitative definition of COC between these levels that will be used is that given in the WHO Mental Health Atlas of 2014 for timely ambulatory follow-up after mental health hospitalisation

(WHO, 2015). This is defined as the percentage of persons hospitalised with a mental health diagnosis that have an ambulatory encounter with a mental healthcare practitioner on the primary healthcare platform within 30 days after being discharged.

This study will thus seek to quantitatively and qualitatively examine the degree of COC for mental healthcare users with severe mental health conditions, who have been discharged from the in-patient district hospital psychiatry service at Victoria Hospital and determine the factors which either facilitate or impede COC for these patients.

A quantification and explanatory qualification of the COC of these patients will assist in understanding the effectiveness (or lack thereof) of the new discharge and referral process to improve the rate of ambulatory follow-up on the primary mental healthcare platform within the designated 30-day time period.

This information can then be used by primary mental healthcare service practitioners, facility managers and district managers to better understand and address barriers to COC on the Primary Mental Healthcare platform.

3.2. Aim

The aim of this study shall be to determine the extent of continuity care of mental healthcare users on the primary care platform in a Cape Town district, with a view to identifying associated factors at patient, service and system level.

3.3.Objectives

1. Determine the 30-day outcomes of post-discharge mental healthcare users, by those who have ambulatory encounters, those who are readmitted and those who are lost to follow-up, and the patient factors associated with each.

2. Explore health manager and practitioner views and opinions on COC in mental health services in the district.

3. Identify facilitators and barriers to COC.

4. Methodology

Mixed methods research combines both quantitative and qualitative data inputs, representing a ‘third methodological movement’, one which is now regularly utilized in both the health and social sciences (Cresswell & Clerk, 2017).

Depending on the mixed method typology used, mixed methods research can be used to enable a dialogue between quantitative and qualitative elements under study. The resulting interaction can thus allow researchers to answer questions which would not be possible using

a single method (either quantitative or qualitative) study design alone (Leech & Onwuegbuzie, 2007).

Mixing of quantitative and qualitative elements may occur at all stages of research from objective setting, to data collection, to analysis and inference of findings (Leech & Onwuegbuzie, 2007). In presenting an 'Eight Dimension Framework' for describing Mixed Methods research, Leech & Onwuegbuzie note that the level of mixing of quantitative and qualitative elements may be partial (when only mixed at data interpretation stage) or full (when mixed within or across all stages), the time orientation of the mixing may be concurrent or sequential, and the approach emphasis of qualitative and quantitative components may be dominant status or equal status.

Mixed method research may be embarked upon for numerous reasons, including researcher ability and convenience considerations, but in terms of the rigour and depth of academic enquiry; mixed method research may be used to triangulate information from various sources.

In so doing, researchers can generate 'multiple ways of seeing and hearing' (Greene, 2007), by combining both quantitative datasets and primary respondent's analyses and personal opinions regarding the field of enquiry. Thus, Mixed Methods research lends itself to the investigation of complex phenomena (Cresswell & Clark, 2017), which arise within, and because of, complex adaptive systems.

Healthcare services are often described as 'complex adaptive systems', systems which self-organize, adapt and evolve with time, the complexity of which arises from the interconnectedness of various component parts. 'Adaptive' refers to an ability to change over

time based on experience (Holden et al, 2005). This applies in particular to Primary Healthcare services on the district health platform, which, as an individual unit of the broader healthcare system, maintains a comprehensive suite of basic services which all citizens must have access to, with numerous healthcare providers and facilities which operate in communities, where the social determinants of health such as poverty and can affect health seeking behaviour and level of access to healthcare.

Mixed methods research in the complex adaptive system of primary healthcare thus could increase the validity and reliability of enquiry into such as system, allow mapping and representation of its complexity. A diversity of views on statistical indicators and differences between facilities and geographic locations can increase and inform the representativity of quantitative data. The use of qualitative data garnered from frontline healthcare workers can also help define and locate sub-populations of mental healthcare users at higher risk for poor COC, which might not be captured in quantitative data. Insight can also be derived regarding possible adverse or unintended effects arising from interventions.

By discussion of themes and possible root causes to poor COC, qualitative data can be used to interrogate inconsistencies not explained by other quantitative variables. Quantitative analyses can even be stratified by elements identified in qualitative discourse. Thus, when integrated together, both forms of data can assist in either achieving convergence on certain root causes, whilst simultaneously highlighting a divergence of views and explanatory root causes in different parts of the system. This also allows for highlighting of assumptions and worldviews held by health system actors as to the nature of cause-and-effect relationships underlying complex phenomena such as discontinuity of care.

Mixed method research has also been noted for its inclusive approach in generating hypotheses with system role players. By adding context, conveying multiple perspectives and adding layers of understanding, this allows for the honouring of the voices of participants in the qualitative arm of enquiry. This by default adds an element of advocacy to mixed methods research, amplifying frontline calls for system transformation. In an environment where system components, such as discharge and follow-up processes have changed, mixed methods research can also be used to interrogate whether such interventions have been maintained, could be improved upon, and whether these changes have resulted in sustainable improvements to COC or not.

Mixed methods research does come with its own challenges, primarily related to researcher capacity, particularly in terms of time for the extensive data collection and sequential data analysis processes. Skill is required in both statistical analysis and semi-structured one-one-one and group interviews. Lastly, but importantly, are the financial resources required to conduct these activities.

4.1.Study Design

Table 4: Objectives, Design Steps and Methodology

Objective	Design Step	Methodology
Preliminary problem identification and scoping	Key Informant Interviews To be held in person or on Microsoft Teams	Qualitative

To measure the proportion of discharged patients with severe mental disorders successfully followed up at primary mental healthcare clinics within 30 days of discharge.	Continuity of Care Data Collection – Raw data from Victoria Hospital & PHDC	Quantitative
To determine time trends, patient demographics, socio-economic status (by household income groups), diagnoses and primary mental healthcare clinics are associated with poor Continuity of Care.	Continuity of Care Data Analysis To be performed in Excel & Stata	Quantitative
To determine Primary Mental Healthcare Nurse's opinions and understanding regarding: - **Definition and measurement of Continuity of Care** - **Factors associated with poor mental health Continuity of Care**	Focus Group Discussion To be held in person or on Microsoft Teams	Quantitative nesting in Qualitative
Synthesis	Report Write-Up	Mixed Data

This study will be conducted by mixed methods research methodology, and will be;

- Fully mixed: Mixed methods research has been planned into the design of the study, with quantitative and qualitative data being mixed both across and within stages.

- Sequential explanatory: The sequencing of this research will thus be Qualitative-Quantitative-Qualitative. Key Informant interviews will inform quantitative data collection requirements, which will form the material upon which the qualitative Focus Group Discussions will centre on.

- Equal Status: There will be equal emphasis on the quantitative and qualitative components of the study, to generate a comprehensive framework of understanding for COC for patients with severe mental healthcare illness on the primary care platform post-discharge

4.1.1. Quantitative

The quantitative aspect will be a retrospective observational study, with both descriptive and analytic components, of a cohort of psychiatric patients, discharged from Victoria District Hospital between 01/01/2015 to 31/12/2020. Continuity of care rates will be compared by patient factors, between time periods and between places of residence.

The primary outcome of interest will be to determine the COC rate, defined as a failure to attend an appointment at the allotted Primary Care facility, within 30 days post-discharge from a psychiatric in-patient service. Individual and group risk factors will be compared to the outcome of interest independently and collectively through frequency tables and graphs.

4.1.2. Qualitative

The concept of COC, informed by the primary and secondary outcomes of interest will form the basis of Key Informant Interviews with the Southern Health District and Victoria Hospital Managers and Senior Clinicians, and Focus Group Discussions with Mental Health Nurses from the Southern Health Sub-District PHC platform. The qualitative data collection process will seek to understand the factors which explain mental health COC rates in the Southern Sub-district PHC platform.

The initial Key Informant Interviews with Managers and Clinicians will be of an exploratory nature, to contextualise the research and provide direction to further quantitative and qualitative analysis.

The subsequent Focus Group Discussion with Primary Mental Healthcare Nurses will be of an explanatory nature, to determine their opinion and understanding of the quantitative data, and their experience of barriers and enablers of mental health COC on the primary healthcare platform in the Southern Sub-District.

4.2.Sample Size

4.2.1. Quantitative

The study will consist of all patients discharged from Victoria DH Psychiatric in-patient services, between the time periods of 01/01/2015 and 31/12/2020. There are approximately 80 patients discharged from Victoria DH per month on average. Thus, the study will include most of the total mental healthcare patient population for this six-year period, estimated to be approximately 6 000 patients, minus those not meeting the inclusion criteria, or with exclusion criteria. Based on a conservatively estimated COC rate of 70%, and with the WHO COC Rate for Africa being 94%, to determine a proportion with a 99% confidence interval and a margin of error of 2%, the required number of observations was 3 495, which our study exceeded (WHO, 2015).

4.2.2. Qualitative

For the exploratory component, initial key informant interviews will be held with three senior healthcare workers in charge of Victoria District Hospital's in-patient psychiatry service will

be purposively sampled to include Managers, Clinicians and Nurses from the Southern Sub-District of the Cape Metropolitan Health District. This includes the Consultant District Psychiatrist the Medical Manager, and the Sub-Structure Director.

For the explanatory component, after quantitative data analysis is complete, there will be a Focus Group Discussion held with 8-10 purposively sampled Primary Mental Healthcare Registered Nurses from Community Health Centres in the Southern-Western Sub-Structure. Primary Mental Healthcare Nurses will be sampled from Retreat CHC, Lady Michaelis CDC, Lotus River CDC, Hout Bay CDC, Strandfontein CDC, Grassy Park CDC and False Bay Hospital.

4.3.Characteristics of Study Population

4.3.1. Quantitative

The quantitative study sample has been drawn from a population of patients who have been discharged from Victoria DH Psychiatric in-patient services. It is noted that the study population does constitute a vulnerable population – who suffer from mental illness which has required admission for in-patient psychiatric services. This population has been chosen for this research, as it has been noted that there is a high rate of primary care appointment discontinuity in such patients, which is correlated with adverse treatment outcomes. Such

research would enable the identification of patients at-risk of discontinuity and allow such patients to be earmarked for enhanced vigilance with regards to appointment continuity and community care worker follow-up.

4.3.2. Qualitative

Key Informant Interviews will be held with the Consultant District Psychiatrist, who is in charge of the in-patient psychiatry service, the Medical Manager who oversees clinical care and governance at the hospital, and the Sub-Structure Director, who manages the Southern-Western Sub-Structure, including all district hospitals, community health centres and community-based services which are located in this geographic service area. The Focus Group Discussion will be held with Registered Nurses on the primary care platform who have specialised in Mental Health. They are the cadre of staff who manage out-patient psychiatric patients in communities, both before and after discharge from in-patient psychiatric services at district, regional and tertiary levels.

4.4.Inclusion & Exclusion Criteria

4.4.1. Quantitative

- Inclusion Criteria:
    - Patients must have been admitted for a psychiatric diagnosis at Victoria DH
    - Patients must be over the age of 18 at the time of their in-patient admission
    - Patients must have been booked for a follow-up appointment within a 4-week period at a primary MH clinic, at any of either Retreat CHC, Lady Michaelis

CDC, Lotus River CDC, Hout Bay CDC, Strandfontein CDC, Grassy Park CDC or False Bay Hospital

- Exclusion Criteria:
    - Patients who are below 18 years of age at the time of their in-patient admission
    - Patients who absconded during their hospital admission
    - Patients who required a direct transfer to another medical or psychiatric hospital

4.4.2. Qualitative

The Key Informant Interviews and Focus Group Discussions are purposively sampled to include healthcare workers and managers who are overseeing or working in mental health services in the Southern Sub-District of the Cape Town Metro.

4.5 Time Schedule

Data will be accessed from the WC PHDC and analysed over a two-month period, utilizing folder numbers from patients discharged from Victoria DH during the study time periods.

- End Aug 2021 – End Oct 2021: Dept Research Committee and Ethics Submission
- End Oct 2021 – End Nov 2021: Data Collection & Cleaning
- End Nov 2021 – End Dec 2021: Data Analysis
- End Dec 2021 – End Jan 2021: Report Writing & Presentation

5. Data Management

5.1. Data Collection Methods

5.1.1. Quantitative

5.1.1.1. Victoria DH Department of Psychiatry

The Department of Psychiatry maintains an Excel spreadsheet database of all patients discharged from the hospital. It is administered by a Mental Health Professional Nurse. This Nurse completes the database upon separation of patients from the hospital and is located on a password-protected hospital PC. The relevant information is captured from folder review of Mental Healthcare Practitioners' notes made during the patient's admission. This database, when anonymized, will include the following information:

i. Folder Number (also known as the Patient Master Index)
ii. Dates of Admission and Discharge

5.1.1.2. Western Cape Provincial Health Data Centre

Data from the Victoria DH Department of Psychiatry will be matched via the Patient Master Index, to follow-up appointment data, which will be obtained by an application process once formal ethics approval has been given. The databases which the PHDC will draw on for this information is the Primary Health Care Information System and Clinicomm, which is administered by information clerks at Community Day Centres. Community Health Centres and District-level hospitals. Patient attendance information contained in PHCIS and

Clinicomm is captured when patients present to retrieve their folders from clinic medical records. Data from the PHDC will be used to supplement and verify the data above, with addition of the following variables:

i. Primary Health Care 30-day post-discharge clinic attendance date
ii. District Hospital 30-day post-discharge re-admission date
iii. Age
iv. Gender
v. Diagnostic ICD10 Code
vi. Suburb of Residence
vii. Household Income Group

5.1.2. Qualitative

5.1.2.1. Key Informant Interviews

A single interviewer (the student investigator) will utilise a standardised questionnaire of open and closed questions to conduct the Key Informant Interviews. Interviews will be conducted over Microsoft Teams, which, as provincial employees, all planned interviewees have access to. Interviews will be recorded using the 'record' function in Microsoft Teams

Key Informant Interviews will be scheduled for sixty to ninety minutes in length. The scheduling of such interviews will be dependent on each interviewees schedule.

Questionnaires will be administered in a private and confidential manner, with the interviewee in a closed office, where interviews could be conducted in a private space with no disturbance. Interviewee answers will be transcribed and analysed into themes. Interviewees will be asked if they consent to follow-up questions of clarity via e-mail. No personally identifiable information will be requested or reported on in the analysis

5.1.2.2. Focus Group Discussion

A single interviewer (the student investigator) will utilise a guiding template to conduct a Focus Group Discussion with 8-10 Primary Mental Healthcare nurses. The Focus Group Discussion will be conducted over Microsoft Teams provincial employees have access to. The discussion will be recorded using the 'record' function in Microsoft Teams. The Focus Group Discussion will be a maximum ninety minutes in length.

The scheduling of the Focus Group Discussions will be dependent on attendees availability and is planned to commence after a monthly Friday meeting of Primary Mental Healthcare nurses in the Southern Health Sub-District. The discussion will be facilitated by the student investigator, who will be based in a private and confidential locked office, with his video and audio on. Attendees' answers will be transcribed and analysed into themes.

Attendees will be asked if they consent to follow-up questions of clarity via e-mail. No personally identifiable information will be requested or reported on in writing up of the

analysis. The discussion will commence with an introduction of the student investigator and topic under investigation, followed by questions of clarity before recording commences. Thereafter the student investigator will present COC data in table and graph format, followed by a series of open-ended statements with requests for commentary.

Questions will be asked in a non-leading manner firstly by volunteer, then by request. Key questions and themes will be kept on hand for the student investigator to refer to. Discussion will start with open ended questions, before circling back to themes and topics with closed-ended questions. The student investigator will practice active listening and steer discussions to receive opinions, convergent and divergent views on data, and cause-effect relationships.

In broad outline, the order of the Focus Group Discussion will be;

a. Introduction of topic
b. Establishment of rapport
c. Circulation of information sheets
d. Presentation of quantitative data results
e. Information extraction from participants, first concrete then conceptual

5.2. Data Safety & Monitoring Plan

Victoria DH Department of Psychiatry data will be retrieved by the Co-Investigator, from the Victoria DH Mental Health Professional Nurse, by means of a solid-state flash drive. PHCIS and Clinicomm follow-up data will be accessed via the WC PHDC. Confidential datasets will be stored on the Co-Investigator**s** password protected laptop**.** Once datasets have been matched by hospital folder numbers, these will be removed and replaced with anonymous study-specific numbers. A reference table will be stored in a separate, password-protected

Excel file, linking folder numbers to study numbers. It will be kept in the Co-Investigator's access-controlled provincial work office.

5.2.1. Data Analysis

5.2.1.1. Quantitative

All data analysis will be completed on the work laptop of the Co-Investigator. This laptop is under lock and key and is password and firewall software protected. Once datasets have been matched, the de-identified data will be stored in a password protected Microsoft Excel (2010) spreadsheet and pivot table. A reference table linking folder numbers to study-specific anonymous numbers will be kept in a password-protected Microsoft Excel 2010 spreadsheet on a separate flash drive, which will be kept in the co-investigator's access-controlled office.

Data will be analysed using a combination of Microsoft Excel 2010 and STATA V14. Matched datasets will be analysed to determine care continuity rates. Data will be descriptively analysed using frequency tables for univariate and bivariate analyses of continuity rates by diagnostic and demographic data.

5.2.1.2. Qualitative

The mixed methods design in use will be that of a sequential explanatory design. The sequencing of this research will thus be Qualitative-Quantitative-Qualitative. Key Informant interviews will inform quantitative data collection requirements, which will then form the material upon which the qualitative Focus Group Discussions will centre.

The theoretical framework for COC is taken from the Mitchell & Selmes Model, in which non-adherence to treatment plans is multi-factorial and may be intentional or non-intentional. In this model, COC is noted to be a spectrum, with patients ranging from ideal attendance to total disengagement, (Figure 9) (Mitchell & Selmes, 2007: 423), the degrees and underlying factors of which can only be elucidated from qualitative data analysis, after analysing the quantitative COC data.

For qualitative data emanating from the Key Informant Interviews and the Focus Group Discussions, transcripts will be (1) **prepared** by printing out and gathered together with researcher notes from the sessions. Sources for each transcript will be marked accordingly.

Next, data will be (2) **reviewed and explored**, with annotation and queries regarding discussion points marked out. Other thoughts and ideas which arise from repeat readings of the transcripts will be noted. Thereafter, using highlighters, sticky pads and margin notes, key words and sentences demonstrating ideas, opinions and beliefs will be highlighted in order to (3) **create initial codes** and categorize the data. These codes will then be (4) **revised and combined into themes.** Finally, these themes will be (5) **sequenced into a cohesive narrative**, which will then be written in paragraph form.

Quality control during qualitative data analysis will be assured by ensuring validity and reliability of the research (Stiles, 1993). Reliability of the research will be ensured by;

- **Disclosure of orientation:** ensuring that my personal expectations, preconceptions, values, and orientation are disclosed both to study participants as well as to readers of any academic products emanating from this research.
- **Explication of social and cultural context:** Making implicit cultural assumptions explicit by stating shared viewpoints and relevant values.
- **Description of Internal Processes of Investigation:** Ensuring I am explicit regarding how my own views and opinions may have been shaped by the data collection and analysis process.
- **Engagement with the Material:** Which refers to intimate familiarity with the phenomenon under investigation, which would be facilitated by the comprehensive and triangulated nature of this enquiry, which seeks data from healthcare managers, of healthcare users, and interpretation by healthcare workers.
- **Iteration:** Repeated encounters between theories and observations will be part of the sequential explanatory design of this study, which will have an initial exploratory component, followed by write up and analysis, followed by quantitative data analysis and thereafter further qualitative data collection and analysis, ending with data mixing and derivation of the study findings.
- **Grounding of Interpretations:** Any report writing process is an interpretation of study data, thus primary rough materials will be made available upon request.

Validity of the research will be ensured by;

- **Triangulation:** Qualitative data will be analysed from multiple sources, including managers, senior clinicians, and multiple primary mental healthcare nurses. Questions during the focus group discussion will probe opinions and views, to determine if these are shared by a consensus of participants or not. Quantitative data will be analysed in the context of qualitative inputs during integration, allowing for further triangulation.
- **Coherence:** This refers to internal consistency in the narrative of report write ups and comprehensiveness in analysing codes and themes generated during research. This will also require an analysis of COC in the study population relative to COC and the factors impeding and facilitating this in the literature. Conclusions regarding facilitators and impediments in this environment will be linked to reasoned explanations supported by data uncovered during the research process.
- **Uncovering self-evidence:** This refers to the uncovering of cause-and-effect relationships, particularly with regards to problems and solutions. This will be done by asking healthcare workers for their own ideas regarding potential facilitators to improve care continuity which could be introduced into the mental healthcare system.
- **Testimonial validity:** Mental healthcare nurses authentic personal views and experiences will be sought in the focus group discussion process.
- **Catalytic validity:** This refers to the process of conscientization and energization towards instituting change, which this research will hope to stimulate via hosting a forum in which ideas for improved care continuity can be discussed.
- **Reflexive validity:** The thesis will also demonstrate how the researcher's own views and ways of thinking developed and changed during data collection and analysis.
- **Consensus amongst researchers:** Interpretation of study findings will be reviewed with the study principal investigators, to determine consensus with past research.
- **Double coding:** Two researchers validated codes and derived themes by consensus.

It is hoped that by using the above range of qualitative analysis techniques to improve trustworthiness, reliability and validity, the research may overcome participants' propensity to avoid difficult topics, such as the role of management in improving COC, a lack of hardware elements such as sufficient infrastructure or software elements such as inter-personal collaborative skills and thus avoid responses which display desirability bias.

NVivo 12 research software will be used for coding of the qualitative data set generated.

6. Description of risks and benefits

6.1. Potential risks & discomforts

The quantitative research component is not anticipated to pose any physical, psychological, economic, or legal risks to patients in the quantitative study sample or population.

The qualitative research component consists of one-one-one Key Informant Interviews with healthcare managers and Focus Group Discussions with Primary Mental Health Care Nurses who work on the primary healthcare platform. Information from the Nurses, as employees of the managers and thus a relatively vulnerable population, will not be shared with the healthcare managers thereafter. Similarly, personal views and opinions from healthcare managers regarding respective mental healthcare clinics will not be shared with the cohort of nurses.

6.2.Risk classification & minimization

The overall risk of this observational study is minimal – the probability and magnitude of harm anticipated to the patient population and healthcare workers is minimal. All study sample patients have already been identified as suffering from a mental health diagnosis or symptomatology which required in-patient admission and treatment.

The main risk to patients and healthcare workers who participate in the study would be due to a breach in data confidentiality, which will be minimized as follows;

6.3. Risk minimization

Patient and healthcare worker study information will be anonymized by using simple study generated participant identification numbers after study datasets have been linked. All personal identifying information (e.g. names, folder number) will be removed from the database for analysis. PC access control and password protection will be maintained. A folder number – study number reference table will be stored in a separate, password-protected Excel file, on a solid-state flash drive, linking folder numbers to study numbers. It will be kept in the Co-Investigator's access-controlled provincial work office.

Individual patient and healthcare worker information will not be given to other healthcare workers, the provincial administration, or any other institutions or persons. Data will be disposed of once data analysis is complete and the necessary reports have been generated, which is estimated to be complete by December 2021.

6.4. Potential benefits

The results may have indirect benefits to patients who utilize the Cape Town Southern Sub-District's Mental Healthcare services and whose data is present in the study sample, by resulting in quality improvement projects aimed at improving COC. The results of the data analysis may be utilized to determine mental healthcare users at risk for discontinuity to primary mental healthcare appointments and therapy and can thus be used to flag and direct intensive community-based follow-up of similar patients in future.

The results of this study could be of use to provincial health planners, mental healthcare practitioners and mental healthcare users in the Cape Town Metropolitan Health District, by improving provincial healthcare service support to patients at risk of loss to follow-up, in order to decrease appointment discontinuity.

6.5. Harm: Benefit

The risk of harm due to the research process is minimal. Although there may be no direct benefits to study sample patients, there is considerable health system and study patient population benefit which may be derived due to the results of this research. As it seeks to determine the reasons for poor COC rates, this study may have significant benefits for healthcare workers and managers, whose input may result in improved linkage, retention and success of mental healthcare treatment on the primary platform after in-patient discharge. The results of the study may improve provincial District Mental Health care continuity planning processes and may be used to direct further investigations into the risk factors for patient being non-adherent to their primary mental healthcare appointments.

6.6. COVID-related considerations

Qualitative data collection activities (Focus Groups and Interview Sessions) will occur via Microsoft Teams, and quantitative data collection and analysis will be via personal computer. There are thus no contact sessions between researchers and participants which would increase the risk of transmission of COVID, or other infection diseases.

6.7.Limitations

The qualitative aspect of this study is directed at primary mental healthcare providers as key stakeholders based in patient communities, to understand the factors on the district and primary healthcare platform which affect mental health COC. As such, it does exclude the views and opinions of patients, families and communities. Depending on the results of this study, this may become the focus of follow-up research.

7. Informed Consent Process

For the quantitative arm of the study, due to the considerable size and timespan of patient discharge periods from Victoria DH Department of Psychiatry, a waiver of the need for formal written consent from the patient population is requested from the University of Cape Town Human Research Ethics Committee. Obtaining the written consent from approximately all 2500 patients would be a logistical improbability, due to the sheer number, the geographical distance, unavailable or incorrect contact details, and the level of mobility inherent in any population over an extended period.

The failure to obtain this waiver of written informed consent would render this study unfeasible, given the lack of investigator time and financial resource available to conduct such a consent procedure. For the qualitative arm of the study, informed consent will be sought from all participants of the Key Informant Interviews, the Semi-Structured Interviews and Focus Group Discussions.

8. Privacy & Confidentiality

8.1.Quantitative

Patient identity will be anonymised once the Victoria DH dataset is linked to the WC PHDC dataset, by use of uniquely allocated participant identification numbers.

A separate reference table linking hospital numbers to study numbers will be kept in a password-protected Microsoft Excel (2010) spreadsheet, on a solid-state flash drive, in the Co-Investigator's access-controlled work office. Thus, study data will not include any real-world information which could be used to uniquely identify patients.

Patient's personal identification details, including first, middle and surnames, identity number, or passport numbers will not be recorded or solicited separately. Patient's residential addresses will not be included in the database.

The P.I.'s laptop is also kept under lock and key within the aforementioned access-controlled environment during the day, in a locked room at night, and is password and firewall software protected. Data will be backed up to a solid-state flash drive and to a Microsoft OneDrive

cloud storage account, which is password protected, owned by and will remain in the Co-Investigator's possession at all times during data collection and analysis. All copies of primary study data will remain in the sole possession of, and be accessible solely to, the Co-Investigator, which will remain in an access-controlled office environment, for a period of two years, after which time all information will be deleted.

8.2.Qualitative

Healthcare worker privacy and confidentiality will be respected by holding Key Informant Interviews and Focus Group Discussions over Microsoft Teams, whilst facilitating discussion in a locked office room.

Key Informant Interviews will be conducted in a one-one-one manner. Focus Group Discussion participants will be requested to complete non-disclosure agreements as to information discussed within the Focus Group Discussion

Participant identity will be anonymised at the point of primary data acquisition by the use of uniquely allocated participant identification numbers. The qualitative study data will not include any real world information which could be used to identify specific staff members, including personal identification details, including first, middle and surnames, identity number, passport number or driving licence numbers, which will not be solicited for recording.

Interviews and Discussions will be audio recorded by consent and deleted after transcription and theming. Completed paper notes from the Key Informant Interviews and Focus Group

Discussions will be kept under lock and key in the work office cabinet by the student investigator, in an access-controlled room. Qualitative paper data will be destroyed by paper shredding after theming and write up of the final study report is completed, within one year after data collection.

9. Reimbursement for Participation

Patients whose records are contained within the study database will neither be approached or offered reimbursement for disclosure of further information.

Staff who participate in the interviews or group discussions will neither be approached for or offered remuneration for their participation or for disclosure of further information.

10. Emergency Care and Insurance for Research-related injury

Research-related injury is not a possible outcome of this minimal-risk, retrospective observational study.

11. Study Closure Process

Once the data collection process is complete, analysis and report writing will commence, and is expected to be complete within a period of three calendar months. A presentation of the study results will be prepared for delivery at the Public Health Association of South Africa Conference, 2021. A report of the study results will be submitted to a local medical journal

(such as the South African Medical Journal) for publishing consideration. The resulting article and presentation will be delivered to the Southern-Western Sub-Structure of the Cape Town Metropolitan District Health Services and the Victoria DH Department of Psychiatry.

12. Conflict of Interest Declaration

Neither the Principal Investigator nor the Co-Investigator has a proprietary interest involving any agent, device or software being used within this study.

13. Ethical & Regulatory Compliance Declaration

This protocol is in compliance with the Declaration of Helsinki (2013).

This study does not require approval by the Medicines Control Council.

This study will require and will seek approval from the University of Cape Town Human Research Ethics Committee.

This study has sought and received authorisation from the Director of the Southern-Western Sub-Structure, and the District Psychiatrist in charge of the Department of Psychiatry at Victoria DH.

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Part B: Publication-ready Manuscript

BMC Health Services Research Journal

Article Title:

Primary Mental Healthcare Continuity

Post-Discharge Continuity of Care for Mental Healthcare Users

Primary Mental Healthcare Continuity

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Abstract

Background:

There is a 40% lifetime prevalence of mental illness in the Western Cape province of South Africa, placing significant pressure on the healthcare system (Herman et al, 2009). Post-discharge continuity of mental healthcare is poor in low-and middle-income settings yet is foundational to preventing relapse, the extent and causes of which are unknown in South Africa.

Methods:

This mixed methods study examined continuity rates and underlying factors for mental healthcare users discharged from an in-patient district hospital service to primary care in a Cape Town Health sub-district. First, six purposively sampled interviews were conducted with managers and clinicians. Thereafter, retrospective data analysis of 5 818 patients discharged from 01/01/2015 to 31/12/2020 was conducted to determine Continuity, Readmission and Loss to Follow-Up Rates by univariate and bivariate data analysis. Codes and data generated from this were reviewed in a focus group discussion with four primary care Mental Health Nurses. Themes and indicators generated from the different phases were analysed using the Van Olmen Health System Dynamics Framework.

Results:

Two-thirds of patients (66.6%) had no contact within 30 days of discharge, less than a quarter (24.7%) had attended a clinic visit, and a minority (8.7%) were readmitted. Discontinuity was higher in males, those of working age and in higher income groups. Individual-level barriers to continuity of care included diagnostic complexity, severity and co-morbidity, whilst health system barriers included lack of mental health nurses at certain clinics, cross-district referral complexities, and poor collaboration within facilities and with community-based services, and contextual barriers included violent crime, gangsterism and substance abuse. A paucity of diagnostic coding data and concerns regarding incomplete attendance capturing called into question the validity of the indicators generated.

Conclusion:

Based on available data, the mental health service in the sub-district under study had poor post-discharge continuity of care, signaling the need for an integrated district mental health services policy, with quality-controlled care continuity indicators. Mixed methods research techniques allowed for the qualitative exploration and explanation of poor continuity. Further research is required which focuses on high-risk groups for poor continuity, and the quality of data collection, analysis and reporting in health districts.

Key Words:

Primary Mental Healthcare, Continuity of Care, Loss to Follow Up, Readmission, Disengagement from Care.

Key Messages (176 words)

1. Post-discharge Continuity of Care was poorer in this sub-district than in other healthcare systems and was also poorer than expected by healthcare workers from the sub-district.

2. Continuity of Care is associated with a multiplicity of patient and health systems factors, which need to be analysed comprehensively to determine appropriate solutions.

3. The quality, validity and completeness of official datasets is poor, and requires improved diagnostic coding, frontline worker interpretation and regular accessibility.

4. There is need for an overarching mental health policy and shared vision, with guidelines for operationalization of;
   a. Service integration at primary health care level.
   b. Multidisciplinary teamwork, cross-cover, handover, and referral algorithms.
   c. Appropriate clinical supervision, training, support and coordination.

5. There needs to be improved communication and referral from Primary Care Mental Health nurses to Community-Based Services, Community Support Programs and Assertive Community Teams, and vice versa.

6. Further research is required which focuses on Mental Healthcare Users and caregivers' experiences of continuity of care in the mental health service.

Background

Post-discharge continuity of care in mental healthcare services

Continuity of Care (COC) has been defined as the 'degree to which a series of discrete healthcare events is experienced as coherent, connected and consistent with a patient's medical needs and personal context' [1].

In 2004, the indicator for post-discharge mental health COC was defined by the Organization for Economic Co-operation and Development (OECD) as the number of persons hospitalized for primary mental health diagnoses with an ambulatory mental health encounter with a mental healthcare practitioner within 30 days of discharge respectively, divided by the number of persons hospitalized for primary mental health diagnoses (See Appendix 9: Table 11) [2]. The latter time frame is an important proxy marker for treatment non-adherence, as patients generally receive one month of medication at discharge. Post-discharge COC within 30 days has since been included as a mental health service indicator in the WHO Mental Health Atlas 2014 Report, with low-income countries displaying the lowest percentage of 30-day post-discharge COC overall, at 47% (See Appendix 8: Figure 20) [3].

Mental health burden of disease

The global burden of disease due to neuropsychiatric disorders has been measured at 13% [4], with the sub-set of severe mental disorders affecting 4% of the world's adult population. These commonly include Schizophrenia, Bipolar Mood Disorders, and moderate to severe Depression [5], as well as any mental illnesses which result in significant functional impairment in the normal activities of daily life [6]. Following World Health Assembly Resolution 65.4, the World Health Organization (WHO) quantified the treatment gap of

unmet need for mental healthcare services in low- and middle-income countries (LMICs) as 76% to 84% of persons with severe mental disorders [7]. The effects of these high rates of untreated mental disorders (including substance abuse) can ultimately hamper countries' efforts to have a growing vibrant economy [8], due to the indirect costs of increased unemployment and caregiver burnout, family stress and psychological suffering [9]. Subsequently, the promotion of mental health and wellbeing has also been included as a target under Sustainable Development Goal 3 [10].

A large majority of persons with mental health disorders live in LMICs, making up more than 80% of the global burden of mental ill-health [8] with depressive, mood, psychotic and alcohol use disorders collectively accounting for almost one-fifth of all disability in LMICs [11]. In South Africa, a middle-income country, neuropsychiatric disorders ranked third in disability-adjusted-life-years lost (DALY) in the second South African National Burden of Disease Study [12]. The South African Stress and Health (SASH) study, also completed in 2004, determined that the lifetime prevalence (the percentage of individuals to be diagnosed at any time in their lives) for any mental disorder in South Africa is approximately 30% [13]. The WC province recorded the highest lifetime prevalence in the country, at 39.4%. Despite mental illness being increasingly recognized as an important public health problem, mental health services in the country across all provinces have been chronically under-resourced [14].

Frameworks for optimal mental health continuity of care

The WHO's Service Organization Pyramid for an Optimal Mix of Services for Mental Health describes an integrated pyramidal continuum of care, from informal and community care as

the foundation which takes place within families and communities, to long-stay specialist psychiatric facilities at the peak [15] (Fig. 1). Cost and frequency of care required are inversely related as one traverses down the referral pyramid, with self- and informal community care costing the least in terms of expenditure but being required more frequently, and in-patient psychiatric services provided by trained professionals being the most expensive and less frequently required. The South African Mental Health Policy adopted the WHO model [16], with an emphasis on decentralization of mental healthcare to communities on the primary care platform.

Figure 1: World Health Organization service organization pyramid for an optimal mix of mental health services (Funk, 2008)

The South African primary healthcare platform is however not homogenous and includes a range of different institutions and actors (Fig. 2). Whilst the primary healthcare clinic is a port of entry into the platform, each clinic also interacts with local Community Care Workers (CCWs), PHC Outreach Teams, Social Welfare and Development offices, local government Environmental Health offices, receiving outreach and clinical guidance from district, regional

and specialist facilities, and standards support and policy guidance from national department of health structures [17]. The Western Cape (WC) province has also developed its own Home and Community Based Care Framework [18], with COC being a key deliverable of providers on the primary healthcare platform, especially non-governmental Community-Based Services (CBS).

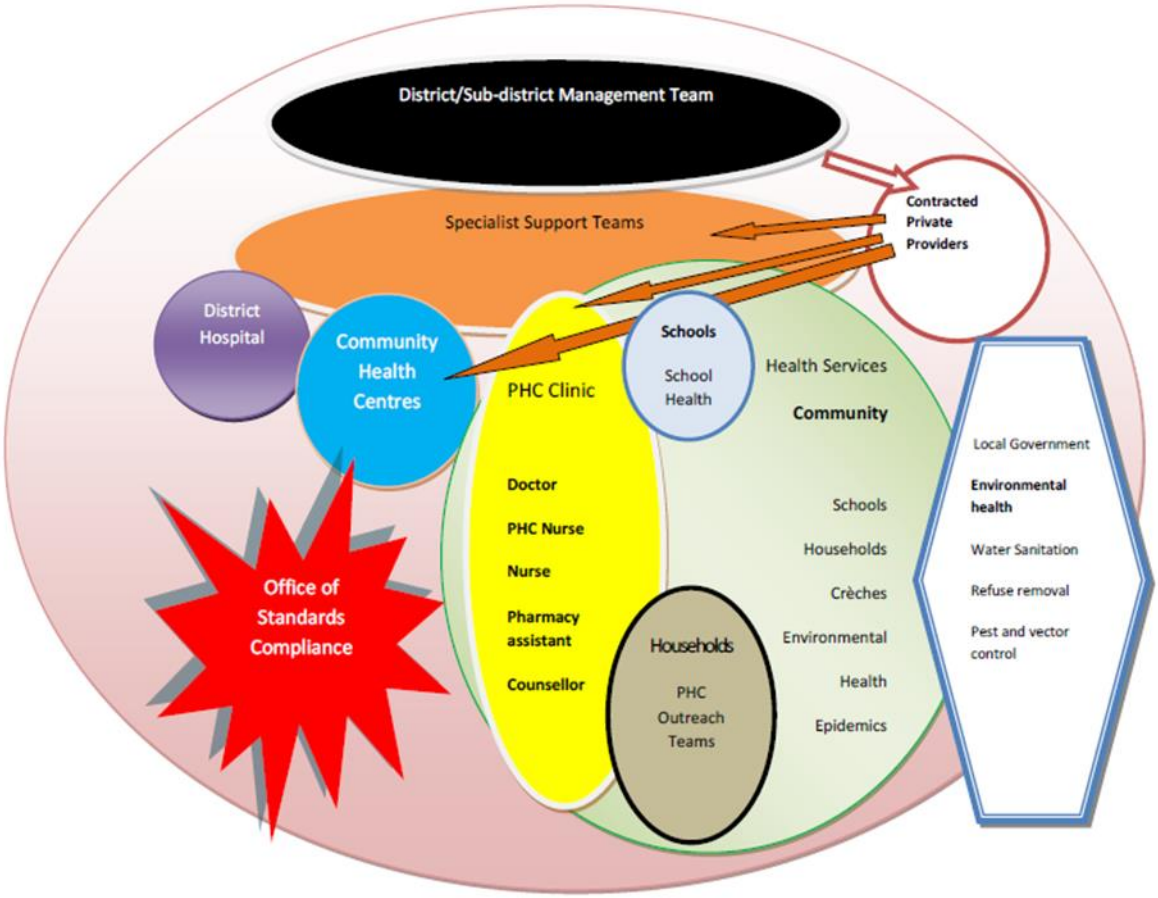

Figure 2: District Health Services Model (Mohamed & Asmall, 2015)

Petersen & Lund point out the 'revolving door' phenomenon that has accompanied South Africa's attempts to decentralize care – referring to the high rates of re-admission due to bed-pressure-induced early discharges, psychotropic drug unavailability, poor treatment adherence, a non-attendance of primary care appointments, and a lack of capacity within CBS

[19]. A compounding problem was the lack of information systems and minimum data set indicators to monitor de-institutionalized care.

Post-discharge mental health continuity of care research

The literature on mental health COC is dominated by quantitative studies from high-income countries (HICs) focusing on patient-related factors for discontinuity in post-discharge care. In a systematic review of research, performed mostly in the USA and the UK, Mitchell & Selmes created a framework of causative factors for failure to maintain engagement with mental health services [20]. Therein they note that the causes of discontinuity of care are multiple, related to patient factors (perception and cost of care), illness factors (such as insight, rationality and socio-economic status) and health systems factors (quality and style of communication).

The proportion of missed follow-up consultations after discharge from psychiatric hospitals has varied in global studies from 20% to 50% [21]. Quantitatively determined predictors and associated factors of poor COC have included non-Caucasian ethnicity, rural places of residence, poverty and homelessness, poor levels of familial and social support, and length of time between discharge and first post-discharge ambulatory consultation [22-24].

Multiple interventions to improve COC for mental healthcare-users post-discharge have been attempted and studied globally, but those found to be successful are generally resource-intensive, requiring tailoring to local health systems constraints for feasible implementation. The time period directly after in-patient admissions for severe mental ill-health has been noted in the literature as a high-risk period for patient disengagement with mental healthcare

services, treatment non-adherence and symptom relapse. A missed primary care appointment, following an in-patient admission to control psychiatric symptoms, can be viewed as a poor return on investment.

This study would be the first to use routine data systems to determine the post-discharge mental health COC rate in South Africa, and, together with an exploratory analysis of the factors associated with care continuity, would assist in suggesting identifiable barriers to COC for mental healthcare users.

Methods

Study Aim

This study aimed to determine the extent of COC of mental healthcare users on the primary care platform in a Cape Town health sub-district, with the view to identifying associated factors at patient, service and system level.

Study Objectives

1. Determine the 30-day outcomes of post-discharge mental healthcare users, by those who have ambulatory encounters, those who are readmitted and those who are lost to follow-up, and the patient factors associated with each.

2. Explore health manager and practitioner views and opinions on COC in mental health services in the district.

3. Identify facilitators and barriers to COC.

Study Design

This study used a sequential mixed methods study design, with full mixing and equal weighting given to the quantitative and qualitative elements, with both exploratory and explanatory qualitative components in relation to the quantitative phenomenon of poor COC.

The sequencing of the different elements of the research was Qualitative-Quantitative-Qualitative, as follows. First, exploratory Key Informant interviews (KII) were held with six senior clinicians and managers in the sub-district to elicit their views and opinions regarding the mental health service and its perceived COC. These staff are all involved in planning, governance and operational management of mental health services in the sub-district. Second, the themes generated from these interviews were used to inform the method of collection and the content of the quantitative dataset. Third, both exploratory themes from the interviews and the summarised quantitative data were presented at a Focus Group Discussion (FGD) with four primary mental healthcare nurses (the total number of MH Nurses currently

employed in the Sub-District), which added explanatory codes and themes to the qualitative dataset. These staff are involved in frontline service delivery on the ambulatory primary care platform.

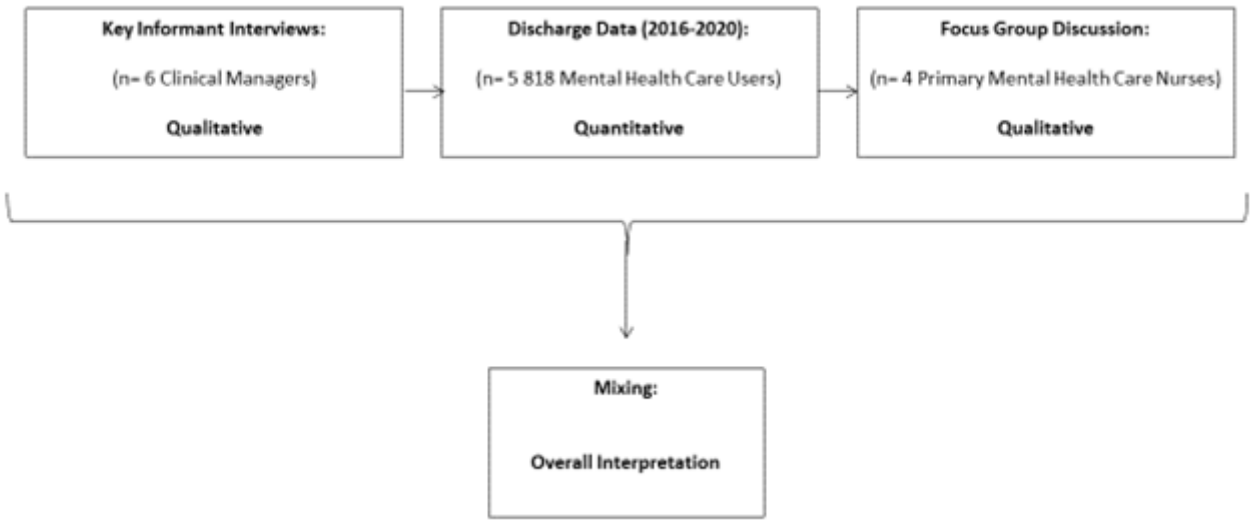

Figure 3: Sequential explanatory mixed methods study design

These three phases were used sequentially to generate a comprehensive framework of understanding of mental health COC in the district (Fig. 3). The quantitative aspect was a retrospective descriptive observational study of patient records, of a cohort of mental healthcare users discharged from the in-patient psychiatric service located in a large District Hospital (DH) in the sub-district, between the 1st of January 2015 and the 31st of December 2020. This quantitative portion of the study sought to ascertain the COC Rate (and associated factors) for these patients, defined as the attendance of an Ambulatory Visit (AV) in the district within 30 days post-discharge. Other outcomes were Re-Admission (RA) to the mental health facility, or Loss to Follow Up (LTFU).

Whereas the quantitative data provided a measurable COC indicator, the qualitative data collection processes sought to understand the health systems context of the health sub-district, and to explain the health system factors affecting COC. The themes and sub-themes generated during the qualitative sections of the study, as well as the quantitative data generated were arranged according to the Van Olmen System Dynamics Framework for further analysis. This framework, which considers both healthcare and wider contextual system components, was first described by Van Olmen et al to analyse interactions of healthcare system components for health systems strengthening [25].

Study Setting

The WC is divided into six health districts, of which five are rural, and the sixth, the Cape Metropolitan Health District, coterminous with the City of Cape Town, which contains two-thirds of the provincial population. The district is further divided into eight sub-districts, which contain a multitude of nurse-led primary mental healthcare clinics, and in-patient involuntary and assisted psychiatric care at district, regional and tertiary hospitals. There are also multiple specialised facilities for tertiary in-patient mental healthcare.

This study was set in one of the City's sub-districts, which is an exemplar for health systems complexity. Although the sub-district contains only one in-patient mental healthcare service within a large DH, it also includes a diverse array of socio-economic communities, multiple primary mental healthcare clinics, and multiple referral pathways to different tertiary facilities, in different sub-districts of the Metro. The DH runs a limited post-discharge out-patient clinic, with most patients down-referred to Primary Healthcare Clinic Mental Health (MH) Nurses, who are supported on certain days of the week by rotating Psychiatry

Registrars. Since 2015, the DH has introduced numerous innovations to their discharge procedure; all patients are referred to CBS for home visitation, a follow-up appointment is pre-arranged at the appropriate PHC facility within two weeks post-discharge, and Primary MH nurses receive electronic discharge summaries before the appointment date, and weekly summaries of all discharged patients.

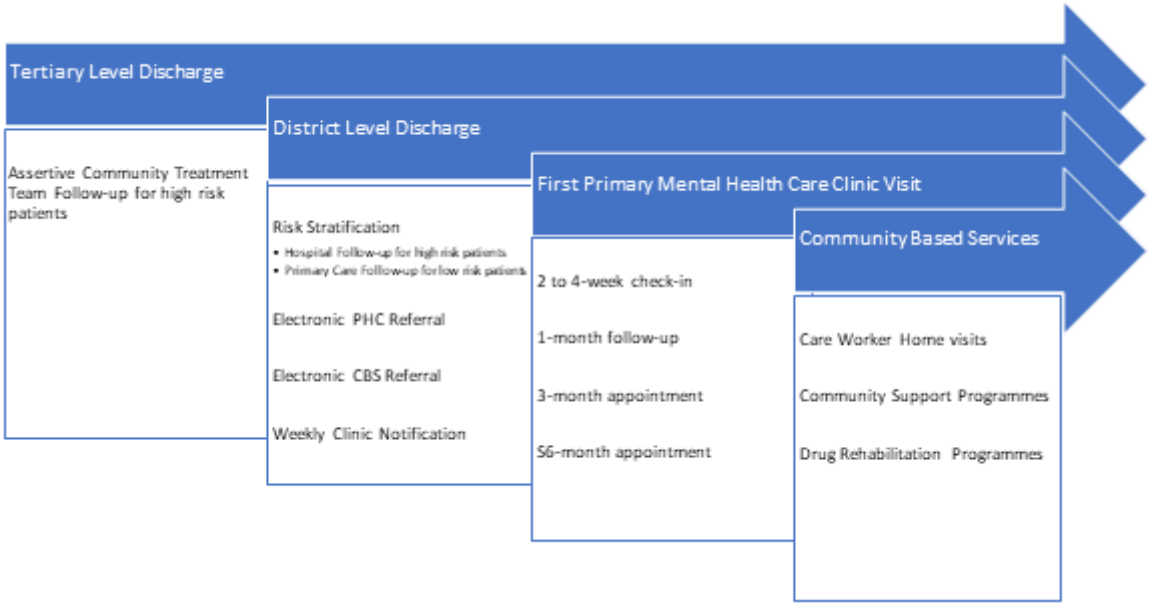

Figure 4: District Mental Healthcare User Discharge Process

Data Sources

Quantitative observational data were accessed from the WC Provincial Health Data Centre (PHDC), for 5 818 mental healthcare users who had been discharged from the district hospital from 2015 to 2020. Qualitative data were generated from; (1) six KIIs held with six Senior Managers and Clinicians in the health sub-district, including District Directors, Facility Managers, Family Physicians and Consultant Psychiatrists, and (2) an FGD with four clinic-based Mental Health specialty-trained Registered Nurses, who manage patients post-discharge in the DH drainage area. All key informant interviewees were senior staff responsible for management and clinical governance of mental healthcare services in the

health sub-district, and all had been in their current positions for longer than five years. All focus group participants functioned as the only MH nurse at each of their facilities, and each had been fulfilling their present role for several years, with the range being six to twenty years in post.

Selection Criteria

The KII and FGD participants were purposively sampled to include managers, senior clinicians and MH nurses responsible for respectively overseeing and delivering mental healthcare services in the health sub-district.

Inclusion Criteria for patient records

Patients must have been admitted for a psychiatric diagnosis at the DH and were all over 18 years of age at the time of their in-patient admission.

Exclusion Criteria for patient records

Patients under the age of 18 years of age at the time of their in-patient admission, patients who died during admission, who were transferred to another hospital, or who absconded during their hospital admission were excluded from the study.

Data Extraction and Quality Appraisal

The Patient Master Index (PMI) numbers of all patients during the study period were obtained from the DH, which maintains a database of all discharged patients, together with basic demographic details. These were then matched to further data from the PHDC:

1. Age
2. Gender
3. Date of Discharge
4. Date of First contact within 30 days of discharge and 90 days of discharge
5. Diagnostic ICD10 Code
6. Suburb of Residence
7. Household Income Group

KIIs were conducted and recorded over Microsoft Teams, by a single interviewer utilizing a standardised questionnaire of open and closed questions. After analysis of the above descriptive data, an FGD was conducted in person with four Mental Healthcare Nurses. Using a set of guideline questions drawn from the analysis, COC data were presented in tables and graphs, followed by a series of open and closed questions with requests for commentary. KII and FGD participants' answers were then transcribed, coded, themed and analysed by the Van Olmen Health Systems Dynamics Framework.

Statistical Analysis

Based on a conservatively estimated COC rate of 70% (and with the WHO COC Rate for Africa being 94%) [3], a study sample size of 3 495 would allow for the determination of a single proportion with a 99% confidence interval and a margin of error of 2%, which our

sample size exceeded. The study determined COC rate was also similarly distant from 50% for the above parameters to still hold true. Once datasets were matched on the PMI, de-identified data and a separate linked reference table were stored in password protected Microsoft Excel (2010) spreadsheets and pivot tables. Quantitative data were analysed using Microsoft Excel. After descriptive univariate analysis, COC Rate percentages were calculated overall and for bivariate sub-groups.

The theoretical framework used for the qualitative data component was adapted from the Mitchell & Selmes COC Model, in which a comprehensive approach to non-adherence to treatment plans is regarded as multi-factorial and may be intentional or non-intentional. In this model, COC is noted as a continuum, with patients ranging from ideal attendance to total disengagement [20] (Figure 9), with the degrees and underlying factors being elucidated from qualitative data analysis. NVivo 12 research software was used for coding and creation of the qualitative data set. The KIIs and the FGDs transcripts were (1) prepared by combining them with researcher field notes from the sessions, and (2) reviewed and explored using NVivo 12, where sentences demonstrating ideas, opinions, beliefs and understandings were highlighted in order to (3) create initial codes (or sub-themes) to categorize the data. These sub-themes were then (4) revised and combined into themes according to the Van Olmen Health Systems Dynamic Framework. Finally, these themes were (5) sequenced into a cohesive narrative.

Quality control during qualitative data analysis was assured by ensuring the validity and reliability of the research [26]. Reliability and trustworthiness of the research was ensured by rigorous engagement with the source material by transcription, coding and iterative review of the codebook after each sequential data collection process. Validity of the research was sought by triangulating data from multiple sources, ensuring coherence by linking

quantitative data associations to reasoned qualitative explanations, and by following a process of double coding in which two researchers validated codes and derived themes by consensus.

Results

Mental Health Care User Data

Univariate analysis

From the 1st of January 2015 to the 31st of December 2020, a total of 5 818 mental healthcare users were discharged from the DH. Approximately two-thirds of these patients were male, with the majority between the ages of 20 and 60 years old. There was an increased number of patients discharged from the district level in the last two years of the period (1 159 and 1 230 respectively), which included 2020, the first year of the global COVID pandemic. The most frequently reported places of residence were from low-income areas, characterized by higher levels of poverty, violent crime and gangsterism. A large majority of patients came from the lower household income groups; the formally unemployed (782 patients) and those earning less than R5 833 per month (4 471 patients), with small minorities of patients in the higher income groups; those earning between R5 833 and R20 833 per month (239 patients) and those earning more than R20 833 per month (213 patients). The most commonly coded ICD10 primary diagnoses in the dataset were psychosis (41.5%), mood disorders (12.7%), acts of self-harm (10.3%), and substance abuse (7.4%) (See Table 1). The remainder, almost a quarter of patients (23.1%) had no diagnosis coded in hospital information systems.

Table 1: Descriptive characteristics of Mental Health Care Users discharged from District Hospital (2015 to 2020)

Descriptive characteristics of Mental Health Care Users discharged from District Hospital (2015 to 2020)				
	30 Day Post-Discharge Status			
Variables	**Continuity of Care (COC)** **(n = 1 442, 24.7%)**	**Re-admission (RA)** **(n = 504, 8.7%)**	**Lost-To-Follow-Up (LTFU)** **(n = 3 872, 66.6%)**	**Total** **(n = 5 818)**
Gender				
Male	807 (22.5%)	300 (8.3%)	2 478 (69.1%)	3 585
Female	634 (28.4%)	204 (9.1%)	1 392 (62.4%)	2 230
Indeterminate	1 (50.5%)	0 (0.0%)	1 (50.0%)	2
Unrecorded	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
Age Category				
10 to 19	40 (3.2%)	6 (0.5%)	80 (6.3%)	126
20 to 29	269 (2.0%)	116 (0.9%)	954 (7.1%)	1339
30 to 39	435 (2.3%)	172 (0.9%)	1 306 (6.8%)	1913
40 to 49	253 (2.4%)	92 (0.9%)	694 (6.7%)	1039
50 to 59	227 (2.9%)	65 (0.8%)	490 (6.3%)	782
60 to 69	139 (3.2%)	36 (0.8%)	264 (6.0%)	439
70 to 79	62 (4.8%)	13 (1.0%)	55 (4.2%)	130
80 to 89	14 (3.3%)	4 (0.9%)	25 (5.8%)	43
90 to 99	3 (4.3%)	0 (0.0%)	4 (5.7%)	7
Household Income Group (monthly)				
H0 (unemployed)	227 (2.9%)	78 (1.0%)	477 (1.0%)	782
H1 (<R5833)	1090 (2.4%)	401 (0.9%)	2980 (0.9%)	4471
H2 (R5833-R20833)	74 (3.1%)	12 (0.5%)	153 (0.5%)	239
H3 (>R20833)	32 (1.5%)	10 (0.5%)	171 (0.5%)	213
Unrecorded	19 (1.7%)	3 (0.3%)	91 (0.3%)	113
Years				
2015	215 (2.3%)	79 (0.9%)	621 (6.8%)	915
2016	160 (2.2%)	68 (0.9%)	503 (6.9%)	731
2017	227 (2.7%)	80 (0.9%)	545 (6.4%)	852

2018	244 (2.6%)	99 (1.1%)	588 (6.3%)	931
2019	278 (2.4%)	76 (0.7%)	805 (6.9%)	1159
2020	318 (2.6%)	102 (0.8%)	810 (6.6%)	1230
Diagnostic Category				
Psychotic Disorder	524 (2.2%)	199 (0.8%)	1 690 (7.0%)	2 413
No Code	301 (2.2%)	132 (1.0%)	910 (6.8%)	1 343
Mood Disorder	190 (2.6%)	64 (0.9%)	482 (6.5%)	736
Self-Harm	212 (3.5%)	40 (0.7%)	347 (5.8%)	599
Substance Abuse	116 (2.7%)	47 (1.1%)	266 (6.2%)	429
Other	57 (3.4%)	14 (0.8%)	99 (5.8%)	170
Intellectual Disability	42 (3.3%)	8 (0.6%)	78 (6.1%)	128
Place of Residence (n =/> 50)				
Retreat	190 (2.4%)	78 (1.0%)	538 (6.7%)	806
Lotus River	160 (2.9%)	53 (1.0%)	332 (6.1%)	545
Grassy Park	151 (3.2%)	53 (1.1%)	263 (5.6%)	467
Steenberg	101 (2.8%)	37 (1.0%)	219 (6.1%)	357
Ottery	96 (3.0%)	18 (0.6%)	204 (6.4%)	318
Wynberg	72 (2.4%)	28 (0.9%)	198 (6.6%)	298
Parkwood	82 (3.0%)	30 (1.1%)	165 (6.0%)	277
Lavender Hill	40 (1.9%)	28 (1.3%)	147 (6.8%)	215
Plumstead	45 (2.5%)	19 (1.0%)	119 (6.5%)	183
Imizamo Yethu	20 (1.2%)	12 (0.7%)	130 (8.0%)	162
Capricorn	30 (1.9%)	20 (1.2%)	111 (6.9%)	161
Pelikan Park	44 (2.9%)	13 (0.8%)	96 (6.3%)	153
Seawinds	38 (3.5%)	6 (0.6%)	64 (5.9%)	108
Hout Bay	16 (1.5%)	12 (1.1%)	77 (7.3%)	105
Strandfontein	12 (1.2%)	4 (0.4%)	82 (8.4%)	98
Westlake	20 (2.3%)	7 (0.8%)	59 (6.9%)	86
Strandfontein Village	12 (1.6%)	4 (0.5%)	58 (0.5%)	74
Diep River	21 (3.0%)	1 (0.1%)	47 (0.1%)	69
Heathfield	17 (2.7%)	7 (1.1%)	39 (1.1%)	63
Cafda Village	23 (3.8%)	4 (0.7%)	34 (0.7%)	61
Eagle Park	16 (3.2%)	5 (1.0%)	29 (1.0%)	50

Outcome and Associated factors

Of the total sample of patients (5 818), 66.6% (3 872) fulfilled the study criteria for Loss to Follow-Up (LTFU). A minority of patients, 1 442 (24.7%), had maintained COC. The smallest outcome category of patients were those already Re-Admitted (RA) by 30 days post-discharge, a total of 504 (8.7%).

Patients at the extremes of age had lower LTFU rates, with the worst performing category being patients aged 20-29 years of age, with a LTFU rate of 71.2%, and an RA rate of 8.7%. The best performing age category was 70-79 years of age, with an LTFU rate of 42.3%, and the best COC rate of 47.7%, and an RA rate of 10.0%. Males fared worse than females, with a LTFU rate of 69% vs Females at 62%. The LTFU rates were unevenly distributed across suburbs (Table 2), with reasons for this being further elucidated in the FGD. Surprisingly, there was increasing LTFU with higher income groups, possibly due to health-seeking in the private sector, and thus not reflecting follow-up in the public sector database.

Loss to Follow Up (Range: 63% - 69%), Re-Admission (7 – 11%), and Continuity of Care (23 – 27%) rates remained consistent over the study period, including the last pandemic-affected year. People with psychosis had the highest LTFU and lowest COC rate (70% and 22%), followed by those with Mood Disorders (65% and 26%), Substance Abuse (62% and 27%), and Intellectual Disability (61% and 33%). Patients who had performed acts of Self-Harm had the lowest LTFU and highest COC rate (58% and 35%).

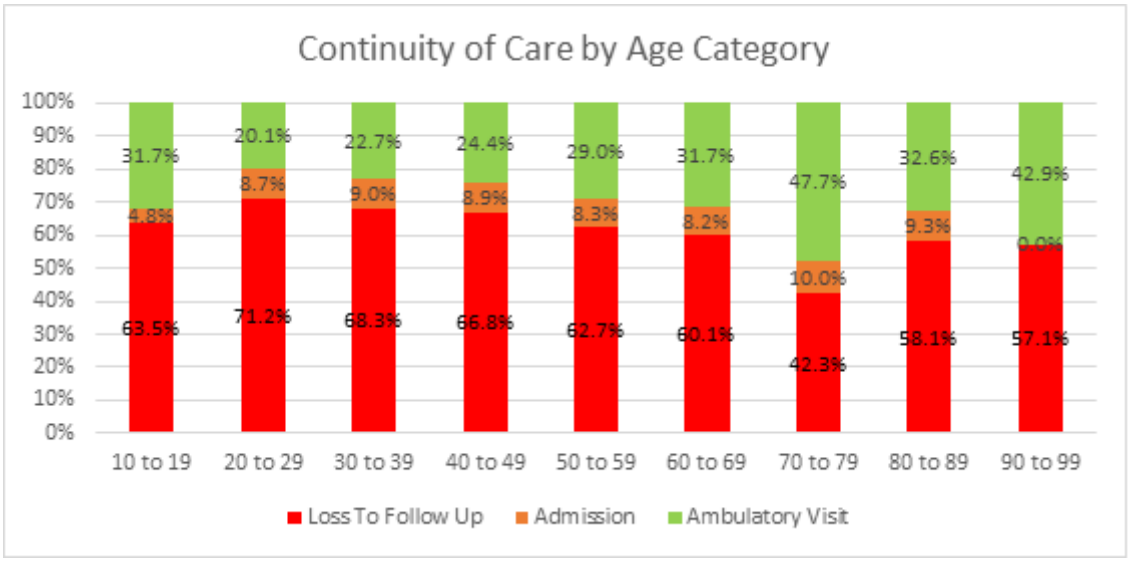

Figure 5: Bar Graph of Ambulatory Visit, Readmission and Loss to Follow Up by Age Category

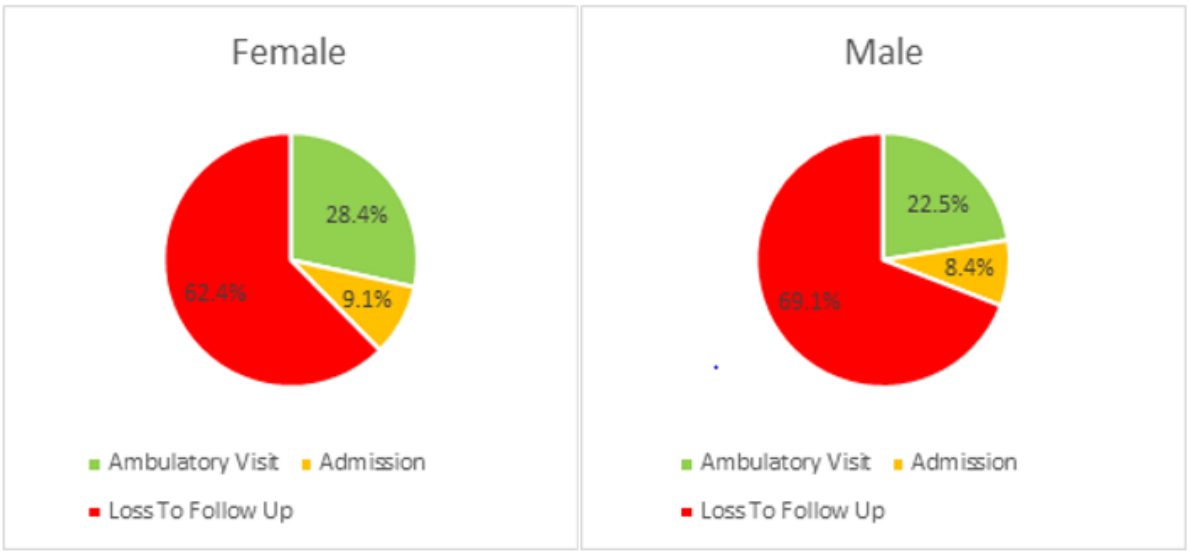

Figure 6: Pie Charts of Ambulatory Visit, Readmission and Loss to Follow Up by Sex

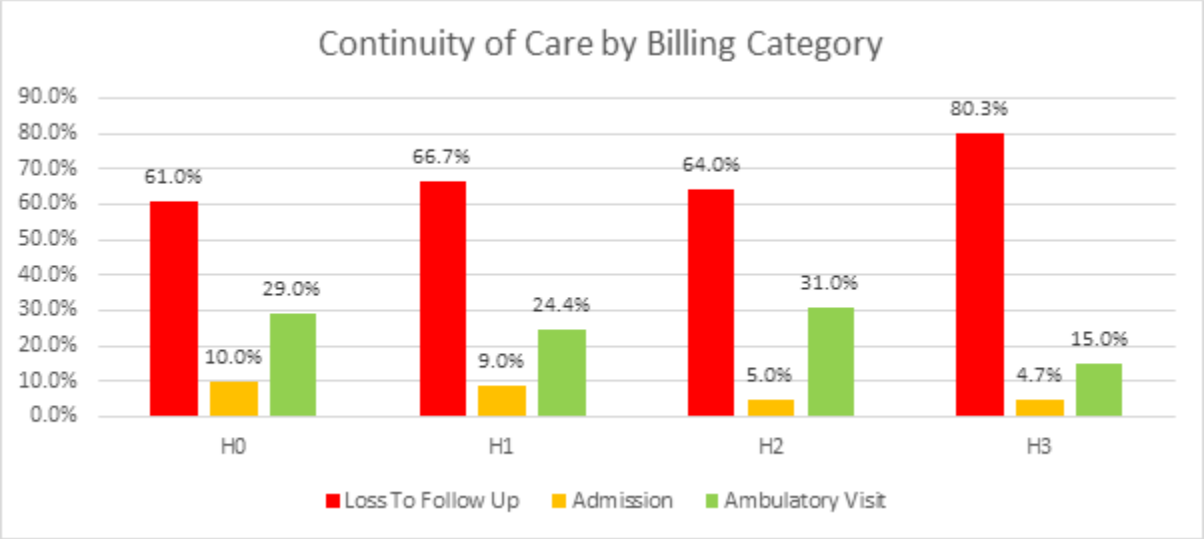

Figure 7: Bar Graph of Ambulatory Visit, Readmission or Loss to Follow Up by Household Income Group

Table 2: Ambulatory Visits, Readmission or Loss to Follow Up by Suburb of Residence with more than 50 patients 2015-2020 (ranked by Loss to Follow Up)

Suburb (with more than 50 patients 2015-2020)	Ambulatory Visit	Ambulatory Visit %	Readmission	Readmission %	Loss to Follow Up	Loss to Follow Up %	Grand Total (2015 – 2020)
Strandfontein	12	12.2%	4	4.1%	82	83.7%	98
Imizamo Yethu	20	12.3%	12	7.4%	130	80.2%	162
Strandfontein Village	12	16.2%	4	5.4%	58	78.4%	74
Hout Bay	16	15.2%	12	11.4%	77	73.3%	105
Capricorn	30	18.6%	20	12.4%	111	68.9%	161
Westlake	20	23.3%	7	8.1%	59	68.6%	86
Lavender Hill	40	18.6%	28	13.0%	147	68.4%	215
Diep River	21	30.4%	1	1.4%	47	68.1%	69
Retreat	190	23.6%	78	9.7%	538	66.7%	806
Wynberg	72	24.2%	28	9.4%	198	66.4%	298
Plumstead	45	24.6%	19	10.4%	119	65.0%	183
Ottery	96	30.2%	18	5.7%	204	64.2%	318
Pelikan Park	44	28.8%	13	8.5%	96	62.7%	153
Heathfield	17	27.0%	7	11.1%	39	61.9%	63
Steenberg	101	28.3%	37	10.4%	219	61.3%	357
Lotus River	160	29.4%	53	9.7%	332	60.9%	545
Parkwood	82	29.6%	30	10.8%	165	59.6%	277
Seawinds	38	35.2%	6	5.6%	64	59.3%	108
Eagle Park	16	32.0%	5	10.0%	29	58.0%	50
Grassy Park	151	32.3%	53	11.3%	263	56.3%	467
Cafda Village	23	37.7%	4	6.6%	34	55.7%	61

Health System Dynamics Framework perspectives of senior managers, clinicians and mental health nurses

Participant inputs from both the KIIs and the FGD were transcribed and grouped into sub-themes and themes according to the Van Olmen Health System Dynamics Framework. These are presented according to themes, sub-themes and illustrating quotes in the tables and paragraphs which follow [25].

Outcomes & Goals for Continuity of Care

Table 3: A summary of themes, sub-themes and illustrating quotes relating to Outcomes & Goals for Continuity of Care

Theme	Sub-theme	Illustrating example/quotes
Outcomes & goals for continuity of care	Care continuity importance	"The thinking behind the emphasis of remaining in care is… If we pay more attention to maintaining the follow up or the discharge loop sequentially, we may see a decrease in presentations back to hospitals" [Senior Clinician 1]
	Defaulting	"Defaulting is when patients do not come for their appointments, and when they do not take their medication." [Mental health nurse 3]
	Assumed improvement	"I think there is available data to back up what I'm saying… that things have on the whole improved." [Senior Manager 1]
		"The new discharge methods have improved COC in a way, but not completely." [Mental health nurse 3]
	Revolving door	"Major pressure points were in district and regional hospitals…and a lot of the increase was due to known patients that defaulted… So, it's that sort of revolving door" [Senior Clinician 1]

There was broad agreement on the usefulness of the OECD 30-day post-discharge COC Rate indicator, given that mental healthcare users are discharged from district hospital level with four weeks of medication, and that the DH defines failed discharges as patient readmissions within 30 days of discharge as well.

"If we pay more attention to maintaining the follow up or the discharge loop sequentially, we may see a decrease in presentations back to hospitals"

[Senior Clinician 1]

There was a large discrepancy between expected and observed COC Rates. The data demonstrated that the COC rate remained poor and relatively constant, around 25% throughout the study period. The pattern of post-discharge visits (n = 1 442) demonstrated spikes as expected for patient follow-up appointments at day 1, day 7, day 14, day 21, and day 28 (post-discharge data included in appendices). Likewise, the LTFU and RA Rate remained within the range of 65-70% and 8-11% respectively. However, MH Nurses had assumed that more than 70% of post-discharge patients were connected to the primary care platform within one month of discharge, given that most patients are provided with two-week follow-up appointments, and were surprised at the COC rate of 24.7%. Senior Managers and Clinicians were likewise optimistic that the COC rate had improved over time.

A lack of diagnostic coding data (23.1% of patients did not have ICD10 primary diagnostic code) made assessment of COC rates across different diagnostic categories difficult. The percentage of admissions due to substance abuse was 7.4%, which was far lower than anticipated by MH nurses, and was also assumed to be the result of missing primary diagnostic code data. A lack of secondary diagnostic codes also made assessment of co-morbidities difficult.

Patient Population

Table 4: A summary of themes, sub-themes and illustrating quotes relating to the Patient Population

Theme	Sub-theme	Illustrating example/quotes
Patient Population	Extremes of Age	"Geriatrics and Adolescent care is definitely prejudiced against and doesn't get recognized... The school doctor system is about to collapse... The district school health doctor is now gone." [Senior Clinician 1]
		"Patients who are newly diagnosed with a mental health disorder under the age of 18 years, those are your defaulters." [Mental health nurse 1]
		"The elderly generally follow-up appropriately, as they are either in old-age homes who bring them for appointments or live with their family who do this for them." [Mental health nurse 2]
	Gender	"We know that women tend to access healthcare more than men in general. I don't know the reasons, scientifically, but probably I guess if you're a male with a mental health condition, you might be less inclined to attend" [Senior Clinician 1]
	Socio-Economic Status	"People with higher socio-economic status are going to be able to attend visits and perhaps, attend other additional things, like Psychologists, Occupational Therapists, privately." [Senior Manager 1]
		"Most of private patients come to us when their funds are depleted. Private do not take psychotic patients. They will send these to Victoria. Then patients move back to private at the start of each year, when their funds are replenished." [Mental health nurse 4]
		"In my experience, it's a very small number of patients who will not be able to attend the clinic at all because of finance. Most people will make a plan to come." [Mental health nurse 3]
	Psychiatric diagnosis	"The ones with Psychosis, you know when they lose the ability to reason. They sometimes default because they just they are having symptoms of psychosis. They forget what they did, and they lose self-care." [Senior Clinician 2]
	Co-morbidities	"…and then of course, if you are, if you got other co-morbidities, but it is making you ill and less mobile, and it's harder for you to attend your visits." [Senior Manager 2]
	Disease severity	"The most severe psychiatric conditions make it worse for continuity of care, and often they would require more regular visits, if they're on depot, you know, monthly, and so, it might make it harder for them to come in." [Senior Clinician 3]
	Substance abuse	"Substance abuse is a much bigger problem than is represented in the data." [Mental Health Nurse 1]
	Healthcare provider stigma	"Transfer of care happens until a patient looks at them wrong – then it's 'go back to the mental health nurse." [Mental health nurse 2]

Both groups of study participants correctly assumed that male patients had poorer COC and LTFU rates than female patients, and this was a consistent theme across all healthcare services. However, the prediction that patients at the extremes of age had worse COC rates was not borne out in the quantitative data. Instead, patients of working age (age 20 to 60) registered the worst outcomes, with a frontline mental health nurse noting that elderly patients generally received assistance to attend visits.

Whilst senior managers and clinicians assumed that patients from socio-economically deprived areas had the poorest COC rates due to difficulty in paying for public transport, mental health nurses noted that it was relatively uncommon for patients to default their appointments due to an absolute lack of funds, and that these patients could generally rely on community-based organizations or their family members to accompany them to clinic visits.

> ***"People with higher socio-economic status are going to be able to attend visits and perhaps, attend other additional things, like Psychologists, Occupational Therapists, privately."***
>
> ***[Senior Manager 1]***

Paradoxically, patients in the highest household income bracket were noted to have the lowest COC and highest LTFU rates, which mental health nurses explaining in the FGD that such patients often make use of out-patient private mental healthcare services after discharge, resulting in Loss to Follow-Up selection bias. These patients required the use of public sector services only once their medical aid benefits had been depleted for the calendar year,

although it had been observed that the total number of insured patients requiring the services of the public sector had grown over time in response to rising inflation and unemployment.

Context

Table 5: A summary of themes, sub-themes and illustrating quotes relating to Context

Theme	Sub-theme	Illustrating example/quotes
Context	Lack of emotional support	"It depends on patient's social circumstance; if people have no support, or come from broken homes, or their relatives are gang bosses, and they are doing this (substance abuse) to belong, then they are going back into that, and nobody cares. It's almost liked a circle of abuse." [Mental health nurse 1]
	Transport routes	"[X] Clinic does not have a direct taxi routes, clients would prefer not to walk in dangerous areas." [Mental health nurse 2]
	Gangsterism and violent crime	"The areas around my clinic – that is where people are playing lekker Cowboys and Crooks. It's like having Guy Fawkes on a daily basis." [Mental health nurse 1]
	Pandemic disruption	"Over the last two pandemic years, we are seeing more previously private patients coming to public clinics, and that is because of a loss of jobs, it is becoming quite prevalent. We are seeing more referrals from the private sector to state mental health services, especially since the start of the pandemic." [Mental health nurse 4]

Place of residence was a complex factor for interviewees to consider, in that residential address is also tied to many other possible factors affecting possible COC. Place of residence is a proxy for socio-economic status, dwelling type, transport access, frequency and severity of violent crime or civil unrest en route to the clinic, which clinic is most appropriate to attend for out-patient care, and what services one has access to there.

Areas with poorer COC rates such as Lavender Hill, Retreat and Strandfontein were also noted to have reputations as hotspots for violent crime, gangsterism and unsafe public transport, with high prevalence of poverty and substance abuse in the community. It was

noted however that clinics built closer to transport nodes, such as in Retreat, may be viewed as safer, as they required less distance to be walked to on foot. The suburbs which demonstrated the poorest COC rates were those which either lacked the services of a mental health nurse for the clinic of the area, or which, despite being in the geographic drainage area of the local district hospital, were serviced by a different tertiary psychiatric hospital.

> ***"The areas around my clinic – that is where people are playing lekker Cowboys and Crooks. It's like having Guy Fawkes, on a daily basis."***
>
> ***[Mental health nurse 1]***

Despite the effects of the pandemic being a major concern for senior managers and clinicians, it was reported by MH nurses that the number of mental healthcare users attending their appointments had not decreased, and the data did not demonstrate any major increases in the LTFU and RA rates or decreases in the COC rate.

> ***"Over the last two pandemic years, we are seeing more previously private patients coming to public clinics, and that is because of a loss of jobs, it is becoming quite prevalent."***
>
> ***[Mental health nurse 4]***

Leadership & Governance

Table 6: A summary of themes, sub-themes and illustrating quotes relating to Leadership & Governance

Theme	Sub-theme	Illustrating example/quotes
Leadership & Governance	Threat to mental health nurse roles	"There is… lack of agreement on the recognized model to actually manage severe mental illness; the job description of a mental health nurse, which needs to prioritize severe mental illness as opposed to counselling." [Senior Clinician 1]
	Service planning	I find that with Psychiatry, it feels very fragmented. Are we doing the right thing? Are they doing what we think they are doing at the District hospital? We don't know about some things, until they start doing it, and we're not speaking to each other. The communication to and fro is maybe just not great, and I think we all want the right patient to be seen at the right place. [Senior Clinician 1]
	Policy gaps	I do think you need specifically orientated people towards actual chronic severe mental illness. So, I believe in a dedicated model, with a mental health practitioner at the district level. Okay, you can see this problem at X hospital, and the designated mental health Medical Officer was not replaced. It's a nightmare… What is the greatest barrier to mental healthcare? It's a policy vacuum. [Senior Clinician 1]

The lack of an overarching mental health service policy and shared vision for the province, which ideally would be linked to human resources and monitoring & evaluation plans, was readily evident. The emphasis on integration and provision of comprehensive PHC services were viewed as threatening to the cohort of MH nurses, as this de-emphasized the role of discipline-specific specialist healthcare practitioners, in favour of multi-functional generalist practitioners. Subsequently, there appeared to be a lack of a shared vision and planning for mental health services, within the greater emphasis on comprehensive PHC service provision in the district. MH nurses expressed concern regarding the inability of generalist practitioners and CCWs to care for mental healthcare users, whilst senior managers and clinicians noted the ever-increasing burden of disease, which could no longer be delegated to a small and diminishing cohort of specialist-trained MH nurses.

At a local clinic level, many MH nurses described a situation of having sole responsibility for the care of mental healthcare users, without support from facility managers and other practitioners. There was also no policy directive stipulating which patients should be seen by which practitioner, given the large burden of mental ill-health. Only certain clinics were reported as having a 'pro-mental health' culture, in which MH nurses and their colleagues had built trusting relationships. Here, MH nurses were confident of their generalist colleagues' ability to manage mental healthcare users appropriately, and not turn them away without consultation or medication when MH nurses were off duty.

> ***"There is… lack of agreement on the recognized model to actually manage severe mental illness; the job description of a mental health nurse, which needs to prioritize severe mental illness as opposed to counselling."***
>
> ***[Senior Clinician 1]***

Resources

Table 7: A summary of themes, sub-themes and illustrating quotes relating to Resources

Theme	Sub-theme	Illustrating example/quotes
Resources: Infrastructure	Clinic layout	"So, what often happens is, you see a patient with multiple comorbidities, but also on psychiatric treatment, and by default we use this to triage - we send straight to mental health nurses, with the clinicians seeing patients in the chronic diseases area, which then forget to follow-up on the mental health aspect." [Senior Clinician 3]
		"What makes a big difference is orientating patients to a facility, so they know the system and are familiar with the people. They know they can go to the triage room; they know who to go to." [Mental health nurse 2]
Resources: Information	Lack of data-driven healthcare	"We need better data and data sets and indicators. We need to reduce assumptions about what each part of the system is doing, and actually know what progress has been made because I think people operate in silos, which are reducing." [Senior Manager 1]
		"You know, the fact that we don't have great use of electronic systems to monitor where the patients are and follow-up on them; it's not really embedded in our practice. So, I think that's a barrier. And also, if the patient does not come and it's not picking it up and not linking with CBS." [Senior Clinician 2]
	Electronic health records	"We actually send a copy of the (Electronic Continuity of Care Record) to the relevant mental healthcare Sister who the patient will follow up with… at the end of every week, we send all the discharges relevant to each Sister, then we keep a list of each." [Senior Clinician 4]
	Poor data validity	"They (clerks) would not know who has or who hasn't come for follow-up, as they are not getting communication from the discharging hospital. We know what to expect. They will only know who attends on the day." [Mental health nurse 2]
	Outdated contact details	"All of those lost-to-follow-up, they might not have a phone, so we're not be able to phone them, but they can't afford the phones, and if you don't get them you can't trace them." [Senior Clinician 3]
	Patient-provider relationships	"When I went on Maternity Leave, and patients would come to see me, they would turn around and leave, and only come back to the clinic when I was back months later. All my patients ended up in Stikland after being stable for many years." [Mental health nurse 1]
		"It's all about relationships you build with clients over the years. Clients don't like to have to speak to a new person. They have their own perception." [Mental health nurse 1]
		"It's also important for patients not to get too attached, as there are other clinicians that can see them." [Mental health nurse 3]

Resources: Human Resources	Lack of mental health nurses	"At [x] Community Day Centre there's a stop-start mental health service, so the person would need to go further to [y] Hospital. [Senior Manager 1]"
	Multi-disciplinary teams	"Unfortunately, I do not have the luxury of having a designated MO to help me. There is no one there who is passionate or invested in working with Mental Health patients. If I am not there, patients will leave and not come back until I am. I cut my leave short, because I don't want my patients to relapse and default." [Mental health nurse 3]
	Mental health nurse supervision/ support	"Support for us, because we do not have any. We cannot go to Family Physicians to ask them for assistance with mental healthcare users." [Mental health nurse 3]
		"We need to maintain supervision, support, and structure for them, and we need to delineate very clearly the nature of the diagnoses that they are supposed to be managing." [Senior Clinician 1]
Resources: Financial Resources	Historical mental health neglect	"Mental Health is so fundamental to people's well-being and health, but it's relegated to last place and I'm sad about that, so I think it needs to change." [Senior Manager 1]
		"Over the years, mental health has been at the bottom of the food chain." [Mental health nurse 1]
	Scarcity	Everybody needs additional resources and as a manager I'm constantly faced with what staff do I get new; an additional social worker or additional midwife or an online genius? [Senior Manager 1]

Infrastructure & Supplies

There was concern that one clinic did not have enough consulting rooms to enable specialist mental health practitioners to consult with patients in a discreet and private environment. One of the clinics was noted to regularly run out of medication and was therefore avoided as a step-down referral clinic by the district hospital. Such medication stockouts would also be a deterrent to patients attending specific primary care clinics, and further trips to the district hospital for appointments would incur greater expenditure in transport costs. There could thus be inappropriate utilization of the district hospital out-patient service, both because of

hospital staff avoiding down-referral to certain clinics, as well as patients themselves bypassing these clinics for other facilities.

Knowledge & Information

The importance of informational continuity was commented on by all interviewees. The new electronic discharge system with weekly notifications was noted by MH nurses to be extremely useful in tracking and following up of patients' post-discharge, as discharge summaries can now be reviewed via a computer in clinic consultation offices even if the physical copies had been misplaced. Access to the information generated during the in-patient stay and the discharge plan was seen as vital to continuing appropriate therapy.

There is an absence of, and need for, complete and regularly accessible data for assessing system performance. This included diagnostic information, as well as service indicators such as COC rates, in order to provide data-driven healthcare planning, and institution of measures to alert CCWs to patients who had not arrived for scheduled visits. Managers and senior clinicians were hopeful that individual patient data and monthly aggregate service statistics would soon be made available. Although MH nurses found the electronic discharge system highly beneficial for acceptance of down-referred patients, clinicians still required greater utility from electronic systems for tracking and tracing of patients.

> ***"We don't have great use of electronic systems to monitor where the patients are and follow-up on them; it's not really embedded in our practice."***
>
> ***[Senior Clinician 2]***

Human Resources

Most clinics in the district have one permanently appointed full-time MH nurse, who sees to all patients with severe mental illnesses. In addition to this, there is a visiting (and rotating) Psychiatric Registrar who sees patients by referral on a once-a-week basis. If there is no handover process or joint understanding between specialist and generalist mental health service providers to cover the service, planned or unplanned absenteeism may result in a reduction in mental health service delivery time. This results at times in practitioners just re-scripting medication without providing further therapy or support, or some patients choosing to defer their appointments to times when their regular specialist mental healthcare service providers were on duty. This was posited by MH nurses as a cause of treatment non-adherence and LTFU and may also be a cause of patients not being followed up within 30 days of discharge.

> ***"It's all about relationships you build with clients over the years. Clients don't like to have to speak to a new person. They have their own perception."***
>
> ***[Mental health nurse 3]***

Human resource constraints are not commonly cited as a cause for poor COC in the literature, with the focus primarily being on patient-related factors. However, a mental healthcare service does presuppose a cohort of trained mental healthcare practitioners, which not all clinics in the district have. Patients from areas with no mental healthcare practitioner are either consulted by generalist healthcare workers in their area clinics or must attend specialist providers in clinics further away. There was difference of opinion between senior managers and frontline nurses as to whether the decision to not appoint MH nurses was by design, or

due to a lack of suitable staff, with senior managers reporting a lack of suitable candidates, and frontline staff assuming that the decision not to appoint specialist MH nurses was purposefully taken. A common complaint across most primary care clinics was the lack of an integrated multi-disciplinary team approach in providing mental health services. This resulted in an over-reliance on specialist mental health nurses and a service gap (especially for patients deemed 'difficult') when these staff members were on leave or away for training.

Finances

With the constant demand for additional resources posed by all service streams in a budget-constrained environment, district managers are constantly forced to consider service equity and utility of all expenditure items, often with incomplete data. Budgets are also managed away from the district level, with changes to budget line items needing negotiation facilitated by the District Director, most especially budget for new staff, as personnel costs forms a majority of health system expenditure.

"Over the years, mental health has been at the bottom of the food chain."

[Mental health nurse 1]

Nevertheless, the introduction of a new Child & Adolescent Psychologist for the District was well-received by frontline mental health workers and was noted to be having positive effects on COC of patients falling into this age group. There was still an overall lack of psychologists on the clinical platform however, as well as other auxiliary services such as social workers and occupational therapists, who are often stretched across multiple clinic services across the district.

Service Delivery and Community-Based Services

Table 8: A summary of themes, sub-themes and illustrating quotes relating to Service Delivery

Theme	Sub-theme	Illustrating example/quotes
Service Delivery	Risk stratification	"The post-discharge District Hospital ambulatory service is for people who we are discharging, probably early, and bringing them back the next week if we feel that they need a little contact with the people who have been treating them at the district hospital level, before they move to the clinic. [Senior Clinician 1]
	Referral system complexity	"So, it's (area x). Its general catchment is to our District Hospital, but its catchment psychiatric hospital is to (outside the district). There are issues… about coordinating care, referring differences in terms of protocol… and it takes longer." [Senior Clinician 1]
	Service integration	We can no longer only have mental health professional nurses rendering mental health care because there are just insufficient numbers of them. [Senior Manager 1]
		"The idea is to make us integrate and multi-task, but how do you do it with such a big workload." [Mental health nurse 2]
		"There are multiple interpretations of integration on the ground, but that is probably more of a cost-saving measure in a sense." [Senior Clinician 1]
	Long waiting times	"Some patients obviously become quite impatient and say they wait too long at the CHC for them to be seen. And so, they get quite restless and they leave." [Senior Clinician 3]
	Clinic culture	"I can definitely say that some are more pro-mental health than others…that depends on the culture and the particular mental health nurse that's working in that facility." [Senior Clinician 2]
		"The Medical Officers at my Clinic are not interested in mental health. These patients just get told to go to that Sr's office. It's difficult if there is no support." [Mental health nurse 2]
		"We need to…decrease the stigma of healthcare workers towards mental health…they do not know how to treat mental health patients; they are not eager to deal with these clients." [Mental health nurse 4]

Table 9: A summary of themes, sub-themes and illustrating quotes relating to Community-Based Services

Theme	Sub-theme	Illustrating example/quotes
Community-Based Services	Assertive Community Teams	"The ACT team? I don't know where they are." [Mental health nurse 1]
		"We have not seen the ACT team for a very long time, as they stopped coming out to our facilities during COVID." [Mental health nurse 2]
		"They used to come to my room in the Clinic to see local area patients (also because of the dangerous environment in certain areas, such as Lavender Hill. Patients have asked me to write letters to the ACT team to come and see me again. I was told though that it does not work that way unfortunately." [Mental health nurse 1]
	Lack of communication	"We do send out CCW's to check up on patients who are complex or who have defaulted, but there is no coordinated work between the CCW's and the Mental Healthcare Nurses for patients who have been discharged." [Mental health nurse 3]
		"The District Hospital will refer patients separately to the Primary Healthcare Clinic and to the local CBS. So there is no point in time where we get together, and they come to me, and the CCW's report back to me, that I went to this patient's house, and this one is not looking well, and I told him to come to the Clinic." [Mental health nurse 4]
		"CBS do not communicate with us. I don't know about the others. Even if the CCW's do a visit, there is no feedback to us. Our patients just tell us 'Oh, yes, there was someone there by me the other day." [Mental health nurse 3]
	Lack of mental health training	"The CCW's are not used to working with psychiatric patients and are unable to provide a detailed psychiatric assessment of patients. There should be incorporation of mental health training within general CCW training." [Mental health nurse 3]
	Lack of community support programmes	"There are not enough resources in the community for patients either, such as resources, support, homes and halfway houses, for psychiatric patients in the community." [Mental health nurse 1]

Tension exists between the vertical specialist mental health service from quaternary down to primary care platform level, and the general emphasis on comprehensive primary health care, with horizontal integration of all services including mental health, for patient-centred care. This policy level discussion needs to be further operationalised to a clinical human resources

level, to better describe how different cadres of specialist staff are to interact with each other in order to provide patient-centred primary health care.

> ***"The idea is to make us integrate and multi-task, but how do you do it with such a big workload."***
>
> ***[Mental health nurse 2]***

There is a lack of community support structures and limited inter-departmental collaboration to meet the needs of mental healthcare users in community, such as Community Support and Drug Rehabilitation Programmes. The addition of standardised referral to CCWs on discharge has thus been welcomed by the mental health service. These are generally lay community members, working for stipends via Non-Governmental Organizations (NGOs) which run CBS. Their main aim is to improve access to primary healthcare services, by linking patients to service providers at clinics, providing health information, screening, and referring minor ailments and chronic illnesses to local clinics for treatment [27].

> ***"CBS do not communicate with us. I don't know about the others. Even if the CCW's do a visit, there is no feedback to us. Our patients just tell us 'Oh, yes, there was someone there by me the other day."***
>
> ***[Mental health nurse 3]***

Currently however, district hospital mental health discharge referrals to CBS occur in parallel with referrals to PHC clinics, creating a communication gap between CCWs and PHC nurses. There is also no formal relationship, line management, in-service training or standard report-

back template offered between MH nurses and CCWs, resulting in a siloed CBS service, undermining the potential to improve COC.

"The ACT team? I don't know where they are."

[Mental health nurse 1]

Both MH nurses and senior clinicians raised their concerns with regards to the limited volume of patients and outreach support to primary care staff provided by the Assertive Community Treatment (ACT) Team of outreach mental healthcare practitioners based at the specialist psychiatric referral centre.

Discussion

Post-discharge COC was poorer in this sub-district than other healthcare systems globally [3] and was also poorer than expected by healthcare workers from the sub-district. Poor COC was noted to be higher in male patients, in patients of working age and in higher income groups. Such poor performance indicators could be deemed a health system crisis in continuity of care, given the failure to connect patients to services, after intensive and expensive in-patient psychiatric service provision. These findings were, however, undermined by gaps in official datasets. Individual patient-related barriers that surfaced in interviews and group discussions included diagnostic complexity, disease severity and co-morbidity. Contextual barriers included violent crime, gangsterism and substance abuse, and health systems barriers included lack of mental health nurses at certain clinics, cross-district referral complexities, and poor collaboration within facilities and with community-based services. Use of the Van Olmen Health Systems Dynamic Framework allowed for the

grouping of both healthcare system and non-healthcare system factors into the qualitative analysis, both of which were found to impact patient COC.

In the global literature, a discharge process lacking in multi-disciplinary team planning (with such teams being inclusive of caregivers, nurses, pharmacists, social workers and transitional case managers) [28-33] was also found to be predictive of poor care continuity. Post-discharge transitional care management, including the connection of patients to community-based resources such as housing and foodbanks, enhanced communication with care givers. In addition, ongoing teleconsultation by care coordinators have resulted in improved treatment adherence over 30 days but had not been found to be sustainable beyond this time period [30, 32, 34-36]. This has been the case in South Africa as well [37].

Multiple care continuity interventions have focused on the community context and support offered to mental healthcare users outside primary healthcare structures. This includes strengthened back-referral to the primary care platform [16, 38], via community outreach from mental healthcare workers in ACT teams, to psycho-social support from peer groups, to cash and other resource transfers which may facilitate greater engagement and maintenance of treatment [39-48]. Despite these demonstrating short-term effectiveness, concerns have been raised regarding their sustainability over time [11, 49].

Our quantitative analysis of district healthcare service data for the study period found that the mental health post-discharge COC in this district to be only 24.7%, far lower than the World Health Organization's previously determined post-discharge COC rate of 84% for the Africa region, and 47% for low-income countries [3]. The post-discharge COC was much poorer than the rate expected by senior managers, clinicians and frontline workers, and the data did

not demonstrate an improving trend over time. This COC rate places the district at the lower end of empiric post-discharge COC studies, which display a wide COC range of 20-50% globally [21].

COC in the district appears to be affected by a multiplicity of patient, provider and health systems factors. Whilst our study did not seek to establish causal relationships via quantitative analytical techniques such as data regression, the official health department quantitative datasets (accuracy and completeness notwithstanding) were presented in the focus group, followed by discussion on the factors related with poor COC, in order to interpret the quantitative data through the explanatory qualitative data collection process [26]. Factors related with differential COC rates in previous studies have included patient's places of residence, psychiatric diagnosis, and absence or presence of social support structures [22, 23].

In our study, factors related to poor mental health COC included patients who were male, adults of working age, and clinics without MH nurses or clinics in which multi-disciplinary teamwork between MH nurses and generalist clinical practitioners was lacking. Contextual factors included clinic working cultures which engendered stigma against mental healthcare users, and a tension between specialist mental healthcare service provision and comprehensive primary health care service provision at the primary care level. These tensions appeared to be worsened by the lack of a clear vision for district mental healthcare service delivery, and policy guidance regarding comprehensive primary healthcare service integration. Together, these could assist in delineating patient flow algorithms based on diagnosis, severity and level of symptom control, and set parameters for ongoing in-service training and up-skilling of both specialist and generalist mental healthcare providers.

The use of mixed methods research for investigation of a specific indicator (post-discharge COC rate) embedded within a complex system (district mental health services) was able to generate deeper insights than would have been possible by only quantitative methods [50]. Mixed methods research is also recognized as a tool for advocating the opinions of often-ignored actors in complex systems and was used in this study to provide a voice to frontline healthcare workers, by eliciting their views, opinions and experiences of the impact of managerial level-policy decisions on patient COC. Similarly, we were able to explore the motivations and policy constraints on senior managers, most especially in terms of human and financial resources [50]. Our study demonstrated that quantitative data could not be taken at face value, but required interpretation from various role players, especially frontline workers, in order to validate quantitative indicators, trends and interrogate causality. Whereas most senior managers and clinicians assumed that poorer income groups would demonstrate worse COC rates, the opposite was in fact found to be true – with the nuance of mixed public-private care for higher income groups only appreciated by frontline MH nurses.

During quantitative data collection, it became evident that the completeness (and therefore the external validity) of official datasets is poor, particularly with regards to ICD diagnostic coding. The data, which had never previously been made available to managers or clinicians, was subsequently not trusted by frontline workers, both in terms of the accurate capture of patient disease profile and clinic headcount. The use of Electronic Health Records (EHRs) has been noted as an important facilitator of patient COC, by enabling the tracking of patient journeys through health systems and quality improvement of indicators [51-53]. Whilst the study sub-district does make use of an EHR, there is a need for data quality control, including improved collection, regular analysis and review of healthcare services data by mental health and administrative staff, for better appreciation of the value of accurate data collection. As

noted from as far back as 2005 by various researchers in the WHO Assessment Instrument for Mental Health Systems (AIMS), there is still no minimum indicator dataset for mental health services in the country [54, 55].

There is a need for a shared vision and an overarching mental health policy in the province, district and sub-district, with steps for operationalizing complex mental health service strategies such as decentralization and service integration. Despite the country having an established Mental Health Service Policy & Framework, none of the study participants referred to such a document. The National Policy does indicate the need for in-service training for mental health, task-shifting to generalist practitioners and ongoing supervision and mentoring, and the development of provincial strategic and operational plans inclusive of routine indicators for monitoring and evaluation of services [16]. However, these are worded as aspirational statements of intent, and have seemingly not been followed through at provincial and district levels. The operationalization of the National Policy needs to include a shared understanding of service integration, decentralization, multi-disciplinary teamwork and appropriate clinical supervision, support, in-service training and coordination for mental healthcare practitioners. The importance of leadership, governance and policy guidance has not previously been linked to quantitative or qualitative studies of mental health COC but is a strong theme in health systems literature and forms one of the WHO building blocks [56].

Similarly, there needs to be improved communication and service coordination between Primary Care MH nurses to CBS, Community Support Programs and ACTs. Studies from the global north have demonstrated improved short to medium term improvements in mental health COC rates when discharges are completed by multi-disciplinary teams inclusive of pharmacists, nurses and social workers, and make provision for longitudinal follow-up in

community by dedicated case managers. Such community follow-up interventions are well-described in the literature as being enablers of improved COC. Although the method of follow-up and the cadre of staff tasked with doing so is heterogenous (including at times social workers, or case managers), this is often dependent on system resources [30, 36 41, 57]. Despite ACT teams featuring in both global and South African health systems literature on COC, with some demonstrating short term COC improvements [19, 48, 49], the experience of the primary care platform and district mental health governance structures has been that the ACT service offered is very limited in volume, narrow in focus and unintegrated in delivery, when compared to broader efforts in the district to improve care continuity.

Positionality

As the former Public Health Medicine Registrar linked to the Southern Sub-District of the Cape Metropolitan health district, the student researcher was asked to consider research reviewing the phenomenon of loss to follow-up and repeated admission of patients post-discharge from in-patient psychiatry services at the local district hospital, by the health sub-district Director.

The request for this research was therefore one internal to the Provincial Department of Health and pre-dated the COVID pandemic. Initial plans to perform only a quantitative data analysis were adapted at the request of the Director to include a qualitative element, by engaging with primary mental health nurses to understand and elevate their insights as to why patients might fail to attend their appointments, relapse in communities and then repeat present to the district hospital. To this was added the insights of other managers of facilities as well as clinicians responsible for mental health service delivery in the district.

The time frame between initial conversations to final ethical approval and data collection was approximately four years, time during which the student researcher left the health district and was subsequently employed at a tertiary healthcare facility within the same district, but under separate management structures in the provincial department of health.

The health sub-district Director, as initiator of this Research to conduct a mixed-methods study inclusive of the views of MH nurses, was included as one of the Key Informant Interviewees. The Director was not however involved in data collection, analysis or write-up of the final report. The research findings indicated poor COC, with a multiplicity of associated factors and responsible actors, from District Managers (for Mental Health vision and policy) to frontline healthcare workers (for multi-disciplinary teamwork) to support teams such as the ACT and CHW's (for service co-ordination) and patients themselves.

The student researcher is a health systems student. Therefore, the multi-factorial nature of poor COC, and the complexity of interactions between actors, policies, process and context was familiar to him. Tensions between actors was readily identifiable, but all were adamant in their concern for improved patient care, and confidentiality of all interviewees and discussants was maintained.

Researcher Reflections

As a health systems manager of a different component within the same provincial health department, the lead researcher was familiar with the district hospital, clinics, and referral system, and half of the key informant interviewees were already established colleagues. This

did facilitate a shared understanding of the complex nature of healthcare service provision in our shared setting, and a certain level of empathy towards this cohort of participants. There were significant differences of opinion with regard to integrated primary mental healthcare provision between specialist mental healthcare providers (against) and generalist clinicians and managers (for), which made for an interesting and contested dialogue between elements of the qualitative research.

The aforementioned relationships with managerial colleagues notwithstanding, a specific aim of this research was to explore frontline practitioner views and opinions on COC in mental health services in the sub-district, and authentic opinions (which were counter to managerial opinion) were surfaced in the confidential focus group discussion with mental health nurses. The focus group discussants, although junior to the researcher, were not managed by the researcher and had no prior working relationship, although the researcher does face similar difficulties in his own sphere of influence, with regard to the competing aims of maintaining service delivery and ensuring the continuous professional development of staff, to which the researcher is predisposed to enabling. The greatest influence on this research may possibly be the researcher's prior knowledge and experience of this particular health system, and the conceptual frameworks which inform healthcare managers and frontline workers understanding, vocabulary, ideas and goals for their service. Although this may have led to a narrower analysis, it also assisted the researcher to honour the input of participants, helping to bring their authentic voices to the fore.

Conclusion

Mixed methods research, by including multiple views and interpretations, lends itself to the investigation of complex phenomena, within complex adaptive health systems [50, 58]. Using a mixed method approach we were able to determine the post-discharge mental health COC rate and related, possibly explanatory, factors. Embedding of the quantitative data in the context of the qualitative experiences of both senior managers and frontline mental healthcare practitioners allowed for the interrogation of potential causal links between these.

Despite the data used in this study being routinely collected in healthcare facilities and being readily available from the PHDC, there remains no minimum data set for mental healthcare services on the primary care platform. Plans to integrate national mental health indicators into district health information systems have been in place since the South African National Mental Health Policy Framework & Strategic Plan was published in 2013 [16]. Unfortunately, our findings are consistent with research performed over a decade ago by Petersen & Lund, who noted the lack of indicators to monitor de-institutionalized care [19]. Such reports should be used for continuous monitoring and evaluation by facility, district and provincial managers. This regular review of the information generated by the service would also enable assessment of data completeness and accuracy, including basic data such as headcount and diagnostic coding, which is often incomplete.

Male patients were found to have worse COC than female patients, as did patients of working age and patients in higher income groups. Further research is required to determine the reasons why such groups are at greater risk of LTFU and RA, and whether such reasons can be mitigated by interventions targeted at these groups. With regards to patients in higher

income groups, sharing of patient data between public and private providers would enable better tracking of patients across both services.

The next iteration of the South African Mental Health Policy Framework must include details on implementation in the various provinces, districts and sub-districts, with input required from frontline staff, as well as facility and sub-district managers. This would assist in creating a shared vision and understanding for the service, inclusive of a human resources plan, standardized clinical governance structures, treatment and referral protocols, agreed healthcare service indicators (including COC) and ongoing in-service training and knowledge transfer, both for specialist and generalist healthcare practitioners working in mental health.

Crucially, further policy guidance must be given for the integration of mental health policy and service provision within the framework of comprehensive primary health care service delivery. Horizontal integration would encompass improved Multi-Disciplinary Team coordination between MH nurses and other generalist healthcare practitioners at primary care clinics, as well as tighter and more meaningful integration of service provision with CCWs, whose roles in mental health service provision still require clear definition. Vertical integration would encompass greater collaboration on complex cases with tertiary outreach ACTs, improved coordination and discharge planning with district and regional hospitals, and regular supervised training from specialist psychiatrists.

Finally, although MH nurses have established working relationships with community support programmes, drug rehabilitation programmes, financial relief organizations, local police, indigent shelters and other healthcare services, it was noted that these support services were often in short supply and could not meet the demand for care.

Limitations

This study focused on the 30-day post-discharge mental health COC rate, and the grounding of summarized quantitative data in qualitative data analysis to elicit the factors related with poor COC from managers and clinical workers on the primary care platform. As such, further advanced statistical techniques, such as regression and further multivariate analyses were not pursued, although may be included in further quantitative research studies. In terms of the qualitative data component of the study, it is important to note that there were a small number of respondents, who were senior managers, clinicians and mental health nurses. We did not include other generalist primary healthcare workers, CCW's or patients, and given the importance of these staff cadres to COC, this is an area for follow-up research.

Longer term studies confirm that an ambulatory visit within 30 days is protective against further care discontinuity [24], but this needs to be confirmed in LMIC settings. The qualitative aspect of this study was directed at primary mental healthcare providers as key stakeholders based in patient communities, and managers and senior clinicians based within one health district and one district hospital respectively, to understand the factors on the primary healthcare platform which affect mental health COC. As such, it excluded the views and opinions of patients, families, communities and CCWs based in CBS organizations, and is not necessarily generalisable to other sub-districts, districts, provinces or hospitals. Further research is required which focuses on patients, both those adherent and non-adherent to their treatment regimens, as well as their families and CCWs, to confirm the mechanism by which the factors determined by this research affect COC.

List of Abbreviations

ACT	Assertive Community Treatment
BCTI	Brief Critical Time Intervention
CBS	Community-Based Services
CCW	Community Care Worker
CDC	Community Day Centre
CHC	Community Health Centre
COC	Continuity of Care
CTI	Critical Time Intervention
DALY	Disability-Adjusted Life Years
DH	District Hospital
ICP	Integrated Care Pathway
ICM	Intensive Case Management
ICDM	Integrated Chronic Disease Management
MAP	Motivational Aftercare Planning
MH	Mental Health – a state of well-being in which every individual realises his or her own potential and is able to contribute to his or her community (WHO)
MHCU	Mental Health Care User
OPD	Out-Patients Department
PHC	Primary Health Care
PMI	Patient Master Index
RIC	Retention in Care
SAFMH	South African Federation for Mental Health
TCM	Transitional Case Management
WHA	World Health Assembly
WHO	World Health Organization

Declarations

Ethics approval and consent to participate

Ethical approval for this research was granted by the Human Research Ethics Committee of the University of Cape Town's Faculty of Health Sciences, Reference Number: 634/2021, and administrative approval from the National Health Research Database, Reference Number: WC_202202_009. All interviewees and discussants have given written consent to their inclusion in the qualitative arm of the study. A waiver of consent was requested for use of the de-identified patient data for the quantitative arm of the study.

Consent for publication

All interviewees and discussants have given written consent to use of their quotes anonymously in published articles and presentations. A waiver of consent was granted for the use of de-identified patient data by the Human Research Ethics Committee of the University of Cape Town Faculty of Health Sciences.

Availability of data and materials

De-identified data is available on request from the corresponding author

Competing interests

Nil to declare

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Nil to declare

Authors' contributions

SP performed literature review, data collection, analysis and write-up

MSK was primary supervisor of both arms of this mixed methods research study

MS was secondary supervisor of the work and assisted with double coding of themes

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Part C: Appendices

Tables, Figures & Legends

Appendix 1: Quantitative Data Collection Spreadsheet

Variables:

1. Victoria DH Dept of Psychiatry
    i. Folder Number (also known as Patient Master Index)
    ii. Dates of Admission and Discharge

2) Western Cape Provincial Health Data Centre
    i. Primary Health Care 30-day post-discharge clinic attendance date
    ii. District Hospital 30-day post-discharge re-admission date
    iii. Age
    iv. Gender
    v. Principal Diagnosis (with ICD10 Code)
    vi. Suburb of Residence
    vii. Household Income Group

Table10: Quantitative Data Collection Spreadsheet

Study Number	Folder Number	Admission Date	Discharge Date	Age	Gender	Diagnosis ICD10	Suburb of Residence	Household Income Group	PHC/DH Attendance or Readmission Date

Appendix 2: Data Request Form (Provincial Data Centre)

The following application form is to be completed by all person/persons/organisations/groups who wish to access to health-related datasets from Western Cape Department of Health and is to be completed in accordance with the Departments' *Guidelines on requests for access to patient datasets from the Department of Health*. Please note that application for use of data does not guarantee that the data request will be approved. If the intended purpose for data access is altered or extended in anyway, a new agreement must be entered into.

Applicant details: *(Refers to the detail of the person requesting the change.)*

Name:	**Shrikant**	**Surname:**	Peters
Designation / Rank:	**Manager: Medical Services**	**Date:**	02/03/2022
Organisation:	Groote Schuur Hospital / Western Cape Department of Health		
Email:	Shrikant.Peters@uct.ac.za	**Tel/Cell:**	083 799 5263 / 021 404 5195

Please supply the contact detail of the person to whom the processed application must be returned.

Details of Data Request: (please append any additional information where necessary)

Type of Data Requested : (please tick appropriate option)	Aggregated data	Non-identified individualised data	Identified individualised data
Please provide a short description of the data requested. Please attach a list/attach a list of the variables required. **I will be reviewing encounter data on Single Patient Viewer of patients discharged from Victoria Hospital psychiatric services from the 1st of April 2015 to the 31st of March 2017.**			
Do you have a National Health Research Database ref no.?	Yes X No	Number:	WC_202202_009
Time period the data should cover:	Start date: 01/04/2015		End date: 31/03/2017
Frequency of Access: (please tick appropriate option)	Once-off:		Periodically: X
If periodically, please specify time frames for access: **I will be accessing this data from the start of March (once given access) until the end of July 2022.**			
Is the data to be used for research purposes?	Yes X		No
Please provide a brief motivation for this request, highlighting the purpose for which the data will be used I will be reviewing clinic attendance post-discharge to determine the % of patients attending within a 30-day period. This is a marker of health system quality of care, which is measured by the WHO, the UN and the World Bank. **Study not funded/funded by: Not funded**			
Do you have a security protocol for handling the data (attach detail if necessary)?	Yes X contained in research protocol		No

PHDC Manager- Technical assessment and comments:		□ Feasible *Where relevant:* □ Protocol cover □ Ethics □ Consent docs
Assigned PHDC analyst: **Assigned Time:**	**PHDC Manager Signature:**	**Date:**

Outcome of Application: (To be completed by the Designated Health Authority)

Name:		**Surname:**	
Designation / Rank:		**Signed:**	
Application Approved:	Yes / No	**Date:**	dd/mm/

TERMS OF AGREEMENT FOR ACCESS TO HEALTH DATASETS

The Western Cape Department of Health is committed to ensuring availability of data that supports the provision of health care and other essential services to authorised Users. This agreement aims to ensure the authorisation, maintenance of confidentiality and appropriate use of datasets provided to Users.

This agreement is between:
The Western Cape Government: Department of Health, hereafter "the Department"
AND

……Dr Shrikant Peters……., hereafter "the User"

1. Application for use of data must be made through the channels identified in the "*Guidelines on requests for access to patient data and patient information systems*" document.
2. This agreement sets forth the terms and conditions to which the Department will disclose certain confidential health information in the form of a Dataset(s).
3. The User agrees that the Department is the owner of the Dataset(s).
4. Permitted Uses and Disclosures:

4.1. Except as otherwise specified herein, the User may make all uses and disclosures of the *(Insert name of Data Set/s)* Dataset(s) necessary to conduct the *(Insert Project name/Report name for which access was granted)* for the period starting (*insert date User will receive Dataset(s))* and ending *(insert date agreement expires)*.

4.2. The User will receive the Dataset(s) **once-off/periodically** *(delete whatever is not applicable)* per *(insert frequency)*, from the designated Department official.

4.3. In addition to the User, the individuals, or classes of individuals, who are permitted to use or receive the Dataset(s) for purposes of the Identified Project include: *(insert names of persons who may use or receive the dataset)*.

5. User Responsibilities:

5.1. The User will not use or disclose the Dataset(s) for any purpose other than permitted by this Agreement pertaining to *(Insert Project name/Report name)* for which written approval was granted.

5.2. The User agrees that the Dataset(s) provided will not be released to any third party that is not included by the provisions of the agreement between the primary parties, without the written permission of the Department. A third party will be required to complete an agreement as well.

5.3. The User agrees that the Department will be provided with an opportunity to comment and give feedback prior to the finalisation of any report/publication derived from the Dataset(s) according to the following conditions:

5.3.1. The data will be used to compile *(insert document name)* for *(insert for whom/what the document is intended)*.

5.3.2. The report will be sent to the Department for perusal prior to finalisation. The latter should respond or react within 31 working days on the report being issued. If this period lapses it will be interpreted as a confirmation that the Department acknowledges the presentation and interpretation of data as correct and factual in the report.

5.4. The User will ensure that the Department is acknowledged in any output resulting from the use of the data including.

5.5. The User will communicate any data quality issues identified to the Department, to improve the dataset.

5.6. The User agrees that any use of the Dataset(s) or reliance by the User on any of the Dataset(s) is at the User's own risk and that Department shall not be held liable for any loss or damage howsoever arising as a result of such use.

5.7. The User agrees that he/she will make no statement nor permit others to make statements indicating or suggesting that interpretations/views drawn from the findings are those of the Department.

5.8. The User agrees that he/she will maintain confidentiality in accordance with item 6. Below.

6. Data Security and Confidentiality:

All Dataset(s) from the Western Cape Department of Health are to be treated as confidential and used in accordance with the following security standards:

6.1. Database storage: At a minimum the database must have user-level security, may not be housed on laptops or external media unless these are encrypted. Ideally the data should be stored on a central server with restricted access and not be stored on portable computer equipment like memory sticks, external hard drives and laptops.

6.2. The Data Sets(s) must be password protected and such passwords are not to be shared with anyone other than the principle user.

6.3. Data may not be linked to personally identifiable records from any other source unless prior approval has been explicitly granted.

6.4. File storage: At a minimum file will be stored with AES encryption e.g. 7-zip, and 15-character passwords which include numbers, special characters and letters.

6.5. Passwords and files may not be provided together but using two different methods of communication e.g. data zipped and e-mailed while password is SMS'ed to User.

6.6. When the timeframe for the agreed utilisation of the data expires (see item 4.1. above) the data must be destroyed in all its forms.

7. In making information available, the Department of Health reserves the right to set conditions in which its staff (including academic staff in joint provincial posts) should be invited to participate in any research undertaken that uses the data they have generated with a view to co-authorship of the final report/s.

8. The User accepts that this data is routinely collected as part of service delivery and therefore the data quality may not be of the highest quality.

9. Failure to adhere to the written agreement can and may be sanctioned

Signatories:

Dr Shrikant Peters		**02/03/2022**
User's Name (Print)	Signature	Date
Department of Health (Designated authority)	Signature	Date

Appendix 3: Participant Information Sheet

- See next page

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Tel: +27 21 406 6818 | Fax: 086 566 2887
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Internet: www.westerncape.gov.za/dept/health

- ***Why is this study being done?***
  This study is being carried out to determine what the continuity of care rate is for mental healthcare patients is in the Southern Health Sub-District, why mental healthcare patients default their primary mental healthcare visits after discharge from Victoria District Hospital's in-patient psychiatric service, and whether changes to the discharge process has improved continuity of care for patients. The results of this study will be used by the Department of Health to understand the reasons why defaulting of appointments occurs, and how this can be improved over time.

- ***By whom is this study being carried out?***
  This study is being carried out by Dr Shrikant Peters, a Public Health Medicine Specialist. He will be taking consent, leading interviews and group discussions, and writing a report once the study is complete. He works as a Medical Manager at Groote Schuur Hospital and is studying further at the University of Cape Town.

- ***If you choose to participate, what will you be expected to do?***
  You will be interviewed one-one one (Healthcare Managers and Clinicians)/in a group of your peers (Primary Mental Healthcare Nurses), in which you will be presented with data on continuity and default rates of mental healthcare users in the Southern Health Sub-District, and thereafter will be asked questions regarding your views and opinions on the continuity of care rates for these patients. The interviews and group discussions will take place over the provincial electronic meeting platform (Microsoft Teams). Interviews and discussions will be recorded, but the information contained remains private and confidential.

- ***Why are you being invited to take part?***
  You have been invited to take part in the study as you are either a Healthcare Manager, Senior Clinician or Primary Mental Healthcare Nurse involved in or overseeing the care of mental healthcare users on the primary care platform and have insight into the reasons why such patients may have poor continuity of care.

- ***How much of your time does the study interview need?***
  One on one interviews and focus group discussions will be scheduled to take place at a time convenient to yourself. Interviews will be scheduled to last no longer than 60 minutes in total and focus group discussions not longer than 90 minutes in total. If you consent to receiving follow-up questions, this will be via email.

- ***What will happen to the information I provide during the interview?***
  The information you provide will be transcribed and grouped into themes. Recorded interviews and Focus Group Discussions on Microsoft Teams, as well as transcribed written information will remain private and confidential. You will not be personally identified in reports. You do not have to answer all questions posed.
- ***What are the risks and discomforts of taking part in this research?***
  You may be asked questions which highlight system inefficiencies or community issues which affect access to mental healthcare. Personal information that you provide in this study either regarding yourself, your patients or other staff will not be disclosed to third parties. You are under no compulsion to answer questions which you feel uncomfortable to.

- ***Are there any benefits to you if you take part in this research?***
  You will not receive any direct benefit from taking part in the study, and you will not be paid in money or any other manner for taking part in the study. However, the results of the study will help the Department of Health to understand how the Southern-Western Sub-Structure can improve continuity of care for mental healthcare users, which will benefit these patients and hopes to increase the effectiveness of all healthcare workers and managers in improving the mental health of such patients sustainably over time.

- ***Do you have a choice to take part?***
  You can choose to not take part in the interview or focus group discussion; you can choose to participate and answer only some of the questions posed, or you may answer all the questions in the interview.

- ***What happens if you do not want to take part in this research?***
  If you do not wish to participate in the interview or discussions, you do not have to. If at any time during the interview or group discussion you wish to stop participating, you may do so. The decision to participate or not will not be disclosed to third parties and you will not be discriminated against for having done so.

- ***Who reviewed or approved this study?***
  The University of Cape Town's Human Research Ethics Committee (HREC)

- ***What is a Research Ethics Committee?***
  The research ethics committee ensures the safety, rights and welfare of people participating in research. Their contact details are:
  - Internet Address: www.health.uct.ac.za/fhs/research/humanethics/about#sthash.oqkqwJ61.dpuf
  - Telephone Number: 021 406 6338
  - E-mail: sumayah.ariefdien@uct.ac.za

- ***If you have any further questions, who should you call?***
  If you have any further questions related to the study, please contact the following people:

  Dr Shrikant Peters (Principal Investigator) (MBChB UCT, BA UNISA)
  - Tel: +27 21 483 6863
  - E-mail: Shrikant.Peters@uct.ac.za

  Prof. Maylene Shung-King (School of Public Health & Family Medicine):
  - Email: Maylene.ShungKing@uct.ac.za

Appendix 4: Interview Questionnaire

- See next page

"PRIMARY MENTAL HEALTHCARE CONTINUITY"

POST-DISCHARGE CONTINUITY OF CARE
FOR MENTAL HEALTH CARE USERS

KEY INFORMANT INTERVIEW QUESTIONNAIRE

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THANK YOU FOR YOUR TIME

This questionnaire is designed to be completed within 60 minutes by interview and response. Please answer all questions to the best of your ability, although answering all questions is not mandatory. Your answers and your identity will be kept strictly private and confidential. Results from this study will help the department of health understand the concerns and insights of healthcare managers and healthcare workers around continuity of care for mental healthcare users on the primary care platform and how this may be improved, specifically between Victoria District Hospital and Primary Mental Healthcare Clinics in the Southern Health Sub-District.

INSTRUCTIONS

Please answer all questions as accurately as possible.

A Space (_____) is provided for writing down participant answers

PART 1: CURRENT POSITION AND ROLE IN MENTAL HEALTHCARE SERVICES

Question 1
What is your formal position in the Department of Health?

_____

Question 2
How long have you served in your current position?

_____

Question 3
What is your role in mental healthcare services in the Southern-Western Sub-Structure?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

PART 2: VICTORIA DISTRICT HOSPITAL DISCHARGE PROCESS

Question 4
Are you familiar with the psychiatric discharge process from Victoria Hospital, and if so please describe it?

_____

_____

_____

_____

Question 5
Has Victoria Hospital's psychiatric discharge process changed over time, and if so, how?

_____

_____

_____

_____

Question 6
Have follow-up rates at Primary Mental Healthcare Clinics improved over time? Please elaborate.

_____

_____

_____

_____

_____

PART 3: CONTINUITY OF CARE FOR MENTAL HEALTHCARE PATIENTS

Question 7
What do you understand by the term 'Continuity of Care'?

_____

_____

_____

_____

Question 8
What do you think are the greatest barriers to Continuity of Care for mental healthcare patients?

_____

_____

_____

_____

Question 9
Do you think that any of the following factors affect Continuity of Care, and if so, how?

- ☐ AGE
- ☐ GENDER
- ☐ SOCIEO-ECONOMIC STATUS
- ☐ PSYCHIATRIC DIAGNOSIS
- ☐ OTHER CO-MORBIDITIES
- ☐ SUBURB OF RESIDENCE
- ☐ PRIMARY MENTAL HEALTHCARE CLINIC

_____

_____

Question 10
Do you have any other ideas which might improve mental healthcare Continuity of Care?

Question 11
Do you have any further comments or questions with regards to Mental Health Continuity of Care?

Appendix 5: Focus Group Discussion Outline Form

- See next page

PRIMARY MENTAL HEALTHCARE CONTINUITY"

POST-DISCHARGE CONTINUITY OF CARE
FOR MENTAL HEALTH CARE USERS

FOCUS GROUP DISCUSSION OUTLINE FORM

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Southern-Western Sub-Structure
Provincial Health Department
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Internet: www.westerncape.gov.za/dept/health

THANK YOU FOR YOUR TIME

This focus group discussion is designed to be completed within 90 minutes.

We intend to determine Primary Mental Healthcare Nurses views and opinions on mental healthcare user Continuity of Care between Victoria District Hospital and Primary Mental Healthcare Clinics. Please answer all question to the best of your ability, although answering all questions is not mandatory. Your answers and your identity will be kept strictly private and confidential.

Results from this study will help the department of health understand the concerns and insights of healthcare managers and healthcare workers around Continuity of Care for mental healthcare users on the primary care platform and how this may be improved, specifically between Victoria District Hospital and Primary Mental Healthcare Clinics in the Southern Health Sub-District.

The facilitator will present service data from the last five years and then ask questions about:

1. Patient Continuity of Care Rates
- PMHC Nurses understanding of loss to follow-up and Continuity of Care Rates
- PMHC Nurses estimation of default rates
- PMHC Nurses opinions on the reasons for loss to follow-up at Primary Mental Healthcare Clinics
- Validity of the 30-day discharge follow-up as an indicator of overall Continuity of Care
- Other possible measures of Continuity of Care

2. Differences in Continuity of Care Rates
- Between Clinics and Suburbs
- For patients of different diagnoses
- For patients of different ages and genders
- For patients of different socio-economic groups

3. Changes in Continuity of Care Rates over time
- General trends over the last five years
- Changes in Continuity of Care Rates since the institution of Victoria Hospital's new discharge process
- Sustainability of improvement in the Continuity of Care rate (if any)
- Other ideas to improve Continuity of Care on the Primary Healthcare platform

***Participants**:* Primary Mental Healthcare Nurses involved in the primary healthcare and community-based services management of mental healthcare users in communities of the Southern Health Sub-District of Cape Town

Participant Consent: Participants will sign a consent form to participate in the focus group discussion. Audio recording of the Focus Group Discussion will be via the provincial Microsoft Teams video conferencing software.

Demographic data: Anonymous demographic data will be collected from participants regarding their primary place of work.

Facilitator/Moderator: The Facilitator for this Focus Group Discussion is the Student Investigator of the study. He is a medical doctor and Public Health Specialist based at Groote Schuur Hospital.

Continuity of Care Data: At the start of the session, the Facilitator will present data on Continuity of Care Rates for mental healthcare users in the Southern Health Sub-District. This is anonymized and no personally identifying information will be shown. Data will be shown for the different Clinics and Suburbs which they drain.

Data collection: This Focus Group Discussion will be recorded over Microsoft Teams. The discussion will be transcribed, after which themes and quotes will be extracted and noted for the final report. Thereafter the recording will be deleted. The transcription will not use personally identifying information and all quotes used will remain anonymous. Participant privacy and confidential will be strictly preserved.

Time and Place for Focus Group: The Focus Group Discussion will be concluded once the timer on the recording reaches 90 minutes of discussion time. The date and time for the Discussion will be scheduled at the convenience of the participants.

PART 1: PRE-SESSION QUESTIONS DURING INFORMED CONSENTING

Question 1
Which Primary Mental Healthcare Clinic are you currently based at?

_____

Question 2
How long have you served in your current position?

_____

Question 3
Which Community-Based Services do you interact with most commonly?

_____

_____

_____

_____

PART 2: FOCUS GROUP DISCUSSION GUIDE

Welcome

Thank you all kindly for volunteering to take part in this focus group discussion. You have all been asked to participate as crucial stakeholders in the improvement of primary mental healthcare in the Southern-Western Sub-Structure. I know that you are very busy, and I appreciate the time you have given me out of your schedules. We will be no longer than 90 minutes.

Introduction

We are holding this focus group discussion to determine your views and opinions on mental healthcare user Continuity of Care between Victoria District Hospital and the Primary Mental Healthcare Clinics of the Southern health Sub-District. I wish to listen very closely to what you are saying. May I press record so that I can transcribe notes of our conversations afterwards?

Anonymity

Please answer all question to the best of your ability, although answering all questions is not mandatory. Your answers and your identity will be kept strictly private and confidential. After writing my notes of the discussion, I will delete the meeting recording. My notes will remain in a locked facility, and the notes I make will not identify you personally. Any quotes that I use in my final report and article will remain anonymous. I will not share the information discussed here with other healthcare workers or managers. Likewise, it would be appreciated that the discussions held here are not commented on outside of our discussion. So please do feel free to answer as accurately as possible and try to be as involved in discussions as possible.

Ground rules

- The most important rule is that only one person speaks at a time. There may be a temptation to jump in when someone is talking but please wait until they have finished.
- There are no right or wrong answers
- You do not have to speak in any particular order
- When you do have something to say, please do so. There are many of you in the group and it is important that I obtain the views of each of you
- You do not have to agree with the views of other people in the group
- Does anyone have any questions? (answers).
- OK, let's begin

Warm up

- First, I'd like everyone to introduce themselves. I am sure you all know each other professionally. Can you tell me your name?

Introductory question

I would like to give everyone a few minutes before we start with the presentation, to share their experience of working with mental healthcare patients, particularly when following them up on the community care platform after they have been discharged from Victoria Hospital. Is anyone happy to share from his or her experience?
If there are no further comments, let's begin with our presentation.

Continuity of Care Data Presentation

1. Overall Continuity of Care Rate Analysis
2. Bivariate Continuity of Care Rate Analysis
3. Pre- and Post-Discharge Project Continuity of Care Rate Analysis

Guiding questions

- When people refer to the term 'Continuity of Care', what does this mean to you? What does defaulting mean?

- Is the formal definition of 'Continuity of Care' useful to you? What other definitions would you suggest?

- How would you describe the continuity of care for patients attending your Clinic? Why do you think patients attending your Clinic may have poor continuity of care? How could this be remedied?

- Do some clinics and suburbs have worse continuity of care rates than others? Why do you think this is so?

- Are there any similarities you have noticed of patients that have poor continuity of care? Why do you think these are associated with poor continuity of care? Prompt: diagnoses, age, gender or socio-economic status

- Are you aware of the Victoria Hospital Mental Healthcare Patient Discharge Project which was started in 2016? If so, what do you know about how it has changed the process of transferring patient care to the Clinics?

- Do you think the mental health continuity of care rate has improved or worsened over the last five years?

- If there were any improvements in continuity of care since 2016, have these been sustained until now? If so, why do you think so? If not, why not?

- What do you do at your Clinic to improve patient continuity of care? What would you like to do in future?

- What do you think the Health Department, or others, could do to better support Continuity of Care?

Concluding question

- Of all the points we have discussed today, what is the one most important take away for you that you would like to emphasize about improving continuity of care for your mental healthcare patients?

Conclusion

- I would just like to take the opportunity now before we close to thank you for participating in our discussion. It has been very interesting for me to listen to your views, which are crucial. I look forward to writing my report.
- I hope you have also found the discussion and data to be interesting
- Remember that any comments made will be kept anonymous in the final report
- If you are in anyway uncomfortable with the discussions had, please feel free to contact me by phone or email

PART 3: FURTHER CONTACT DETAILS

Who reviewed or approved this study?

The University of Cape Town's Human Research Ethics Committee (HREC)

What is a Research Ethics Committee?

The research ethics committee ensures the safety, rights and welfare of people participating in research. Their contact details are:

- Internet Address: www.health.uct.ac.za/fhs/research/humanethics/about#sthash.oqkqwJ61.dpuf
- Telephone Number: 021 406 6338
- E-mail: sumayah.ariefdien@uct.ac.za

If you have any further questions, who should you call?

If you have any further questions related to the study, please contact the following people:

Dr Shrikant Peters (Principal Investigator) (MBChB UCT, BA UNISA)

- Tel: +27 21 483 6863
- E-mail: Shrikant.Peters@uct.ac.za

Prof. Maylene Shung-King (School of Public Health & Family Medicine):

- Email: Maylene.ShungKing@uct.ac.za

Appendix 6: Consent Form

- See next page

"PRIMARY MENTAL HEALTHCARE CONTINUITY"

POST-DISCHARGE CONTINUITY OF CARE
FOR MENTAL HEALTH CARE USERS

PARTICIPANT CONSENT FORM

School of Public Health & Family Medicine
Faculty of Health Sciences
University of Cape Town
Tel: +27 21 406 6818 | Fax: 086 566 2887
E-mail: Shrikant.Peters@uct.ac.za
Internet: www.uct.ac.za

Southern-Western Sub-Structure
Provincial Health Department
Western Cape Government
Tel: +27 21 404 5195 | Fax: +27 21 483 3648
Internet: www.westerncape.gov.za/dept/health

TO BE COMPLETED BY THE PARTICIPANTS:

I, (Initial & Surname) _____agree to participate in this study, conducted by Dr Shrikant Peters, a public health doctor from the University of Cape Town. I understand that this study explores the reasons why Mental Health Care Users default their follow-up appointments at Primary Mental Health Clinics after discharge from Victoria District Hospital's psychiatric in-patient service.

1. I am participating in this study of my own choice and I understand that I may withdraw at any time, for any reason.	Yes ☐	No ☐
2. I understand that I will be interviewed individually or in a group on an electronic platform (Microsoft Teams) by a public health doctor, who will facilitate and record confidential discussions regarding continuity in care and defaulting of primary health care visits by mental healthcare patients.	Yes ☐	No ☐
3. I have been given a study information sheet. I know I will be asked about the reasons for non-attendance of primary mental healthcare clinic appointments in the Southern-Western Sub-Structure. I will not have to disclose personal identifying details either about myself or my patients.	Yes ☐	No ☐
4. I understand that I will NOT receive any money or other form of payment in exchange for participating.	Yes ☐	No ☐
5. I understand there will be no direct benefit for participating in this study.	Yes ☐	No ☐
6. I understand that my names, identity number, staff PERSAL numbers, and any other personal information I share will remain confidential and will not be provided to other staff, the provincial government, or my patients.	Yes ☐	No ☐
7. I understand that the results from this study will be used to help the provincial health department improve retention continuity of care for mental health patients on the primary healthcare platform after discharge.	Yes ☐	No ☐
8. I have only given consent for my information to be used in this study only, and no other study.	Yes ☐	No ☐
9. I understand that the products of this research may be reviewed by line managers in the Department of Health and may include quotes from myself regarding the mental healthcare services in the Southern Sub-District, which may, given the small number of clinics, be traceable back to myself. I still consent to participate, if quotes remain anonymous	Yes ☐	No ☐
10. (Focus Group Discussion only): I understand that there is a limit on confidentiality when discussing issues in a group of people, and that there	Yes ☐	No ☐

is a risk that comments I provide during the session may be repeated by other participants outside the confines of the study being conducted.		

TO BE COMPLETED BY THE STUDENT INVESTIGATOR:

1. I agree to the use of anonymous quotes when writing this research	Yes ☐	No ☐
2. I have explained to the participant the nature of the research and its future purpose.	Yes ☐	No ☐
3. I have explained to the participant the potential risks involved in partaking in this research and the possible benefits.	Yes ☐	No ☐
4. I have invited the participant to freely ask questions on any aspect of the questionnaire they do not understand	Yes ☐	No ☐

TO BE COMPLETED BY THE RESEARCHERS:

_____	_____	_____
Initials of Participant (Block Capitals)	Date	Signature
_____	_____	_____
Initials of Researcher (Block Capitals)	Date	Signature
_____	_____	_____
Initials of Witness (Block Capitals)	Date	Signature

Should you have any further queries, you are welcome to contact the following supervisor:

Prof. Maylene Shung-King (School of Public Health & Family Medicine):
Email: Maylene.ShungKing@uct.ac.za
If you have any ethical concerns or questions regarding your right or welfare as research participants, you can contact the ethics committee of the University of Cape Town:

Human Research Ethics Committee (University of Cape Town):
Email: sumayah.ariefdien@uct.ac.za Tel: +27 21 406 6338

Appendix 7: Ethics Approval Letter

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room 45 E-52-E-Floor- Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 406 6492
Email: hrec-enquiries@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

20 January 2022

HREC REF: 634/2021

A/Prof M Shung-King
Division of Health Policy & Systems
FHS
Email: maylene.shungking@uct.ac.za
Student: shrikant.peters@uct.ac.za

Dear A/Prof Shung-King

PROJECT TITLE : "PRIMARY MENTAL HEALTHCARE CONTINUITY" – POST-DISCHARGE CONTINUITY OF CARE FOR MENTAL HEALTHCARE USERS (MASTER'S DEGREE – DR SHRIKANT MAURICE PETERS)

Thank you for your response letter, addressing the issues by the Faculty of Health Sciences Human Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

This approval is subject to strict adherence to the HREC recommendations regarding research involving human participants during COVID -19, dated 17 March 2020: 06 July 2020 & 01 July 2021.

Approval is granted for one year until the 30 January 2023.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

The HREC acknowledge that the student: Dr Shrikant Peters will also be involved in this study.

Please quote the HREC REF 634/2021 in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval, where necessary, before the research may occur.

Appendix 8: Additional Figures

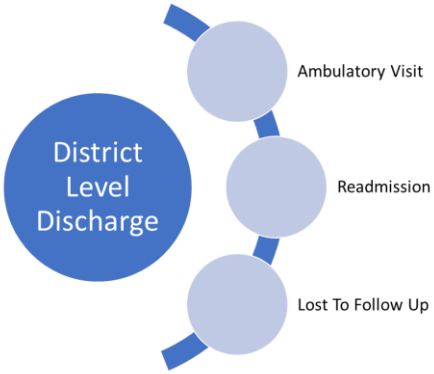

Figure 8: Patient outcomes post-discharge

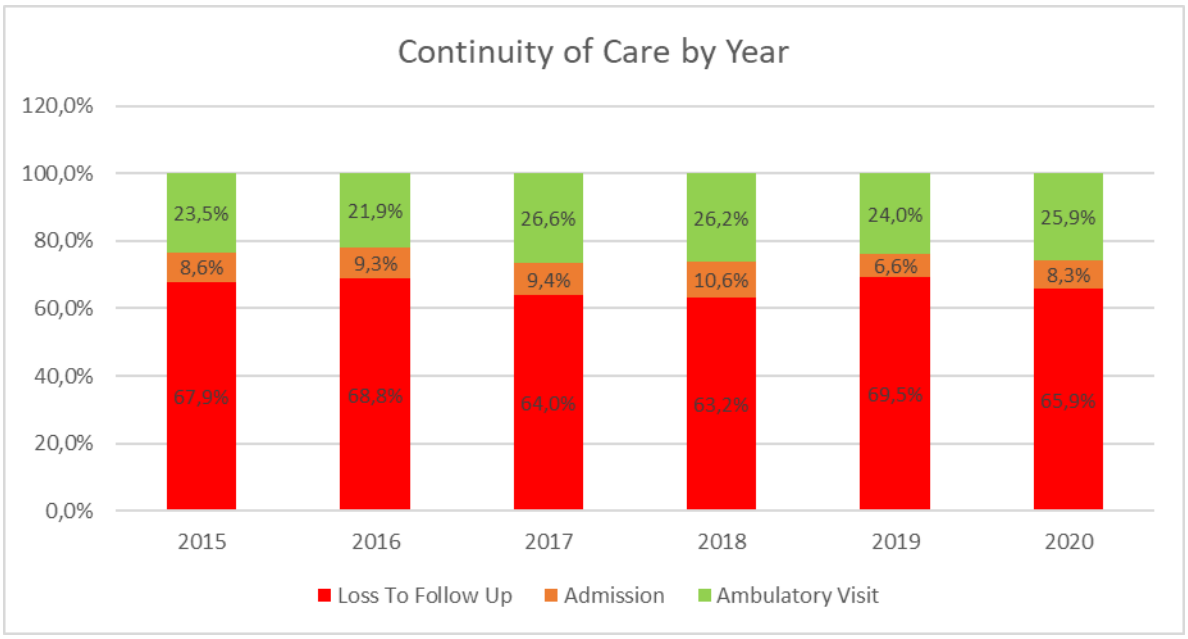

Figure 9: Bar Graph of Ambulatory Visit, Readmission and Loss to Follow Up by Year of Discharge

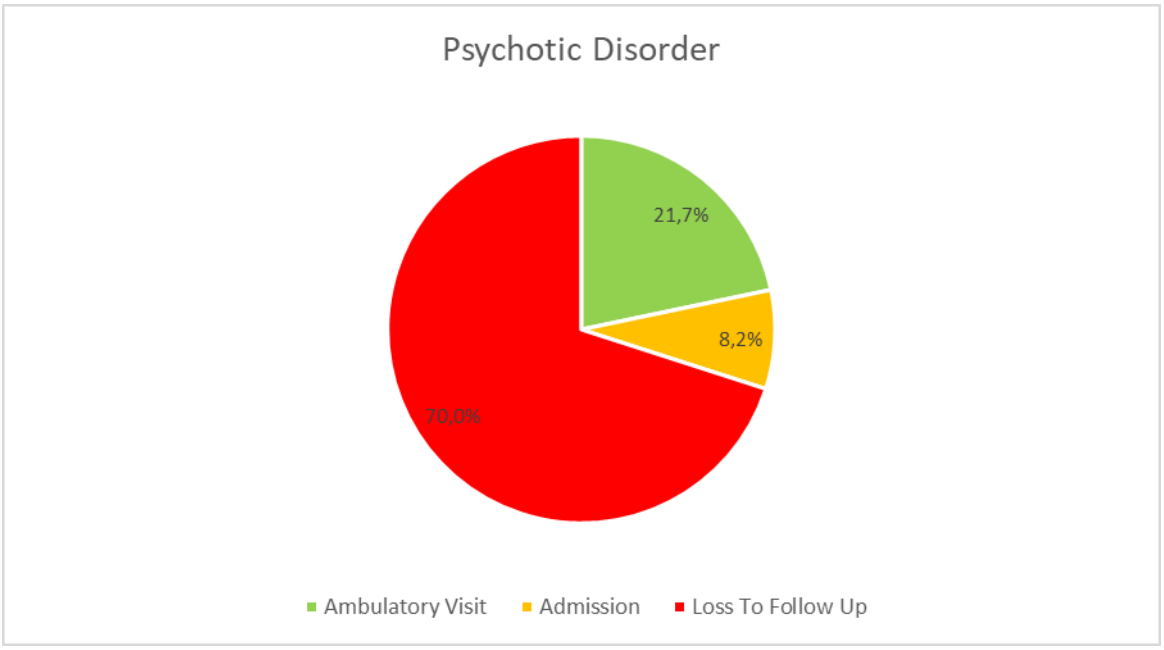

Figure 10: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with Psychosis

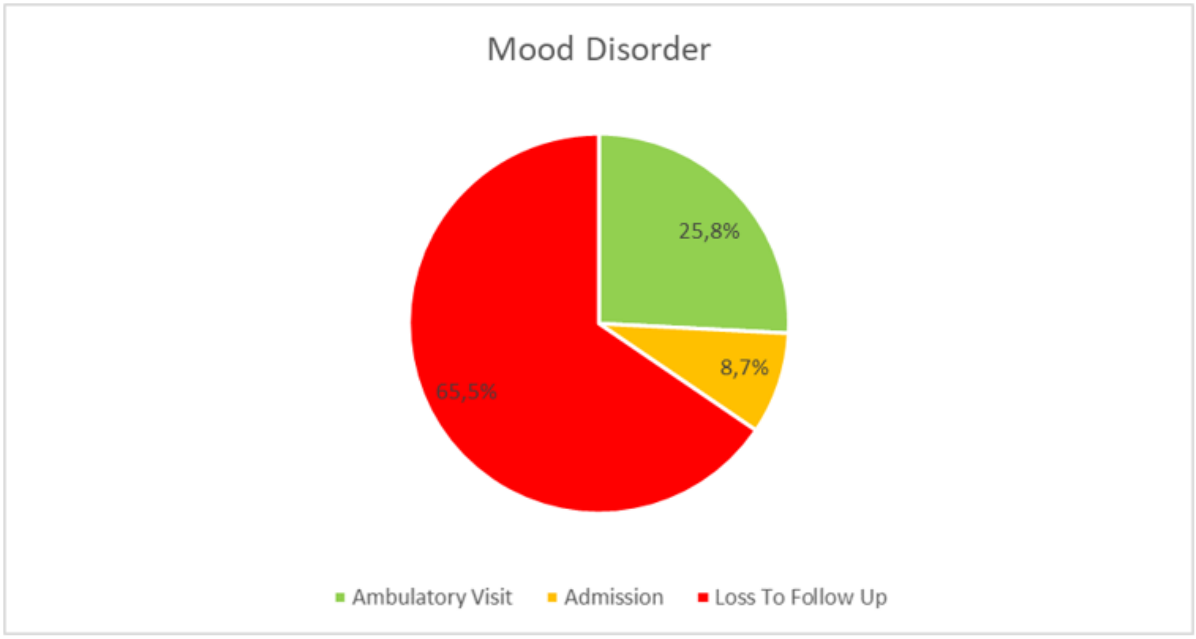

Figure 11: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with Mood Disorder

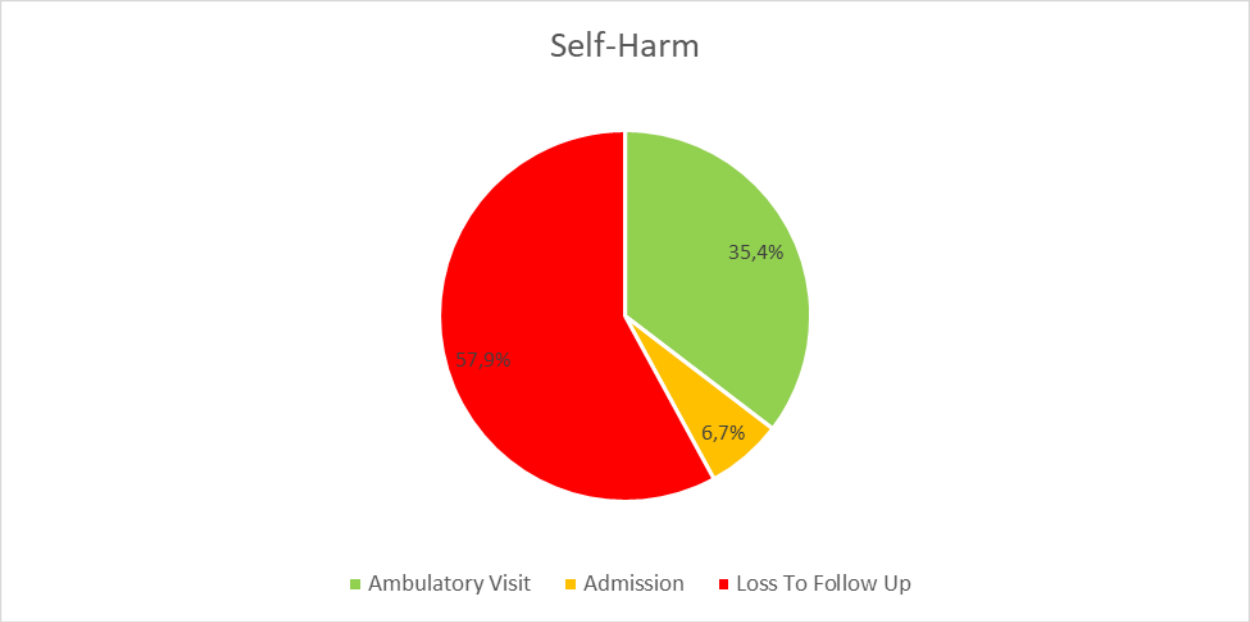

Figure 12: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with an episode of Self-Harm

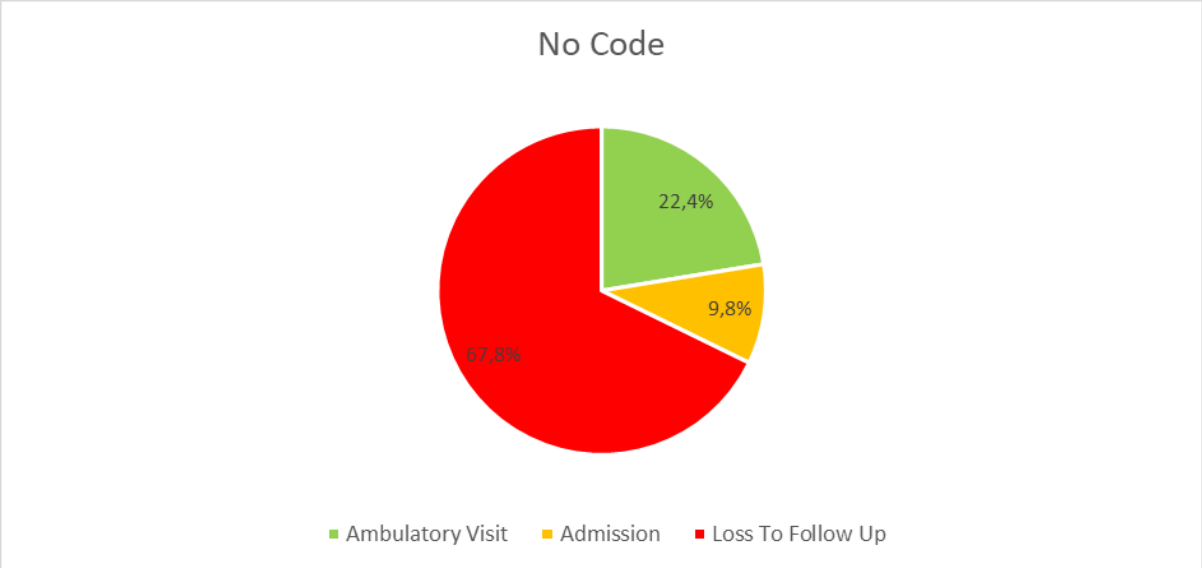

Figure 13: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with no coded Diagnosis

Figure 14: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with an episode of Substance Abuse

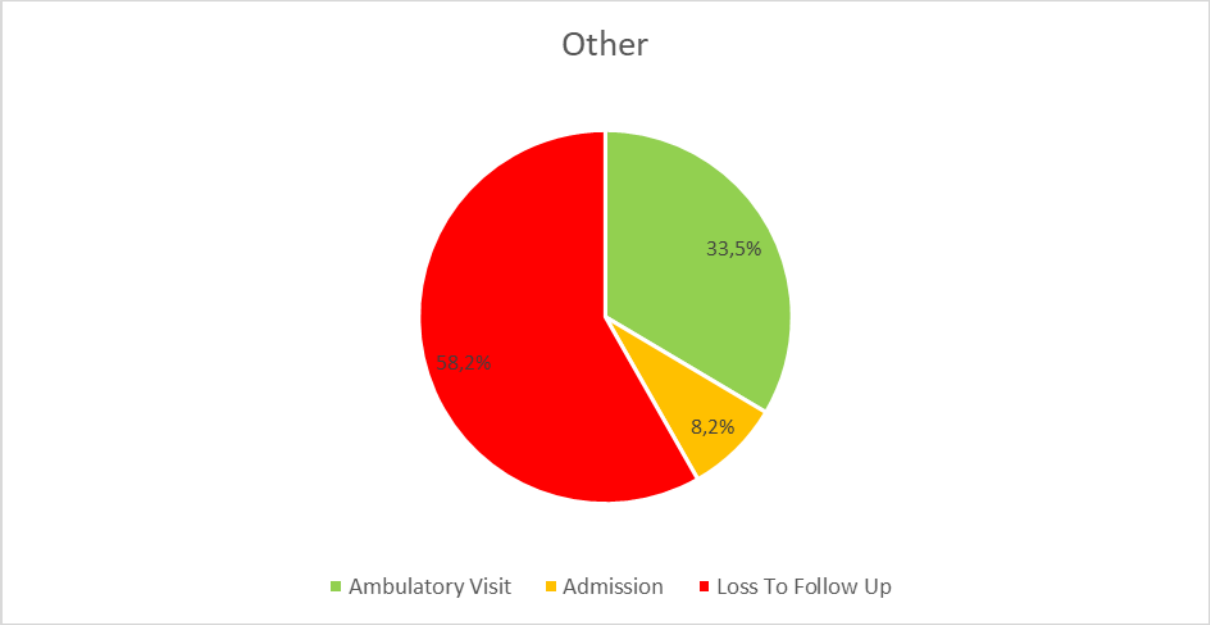

Figure 15: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with other (non-Psychiatric) Diagnoses

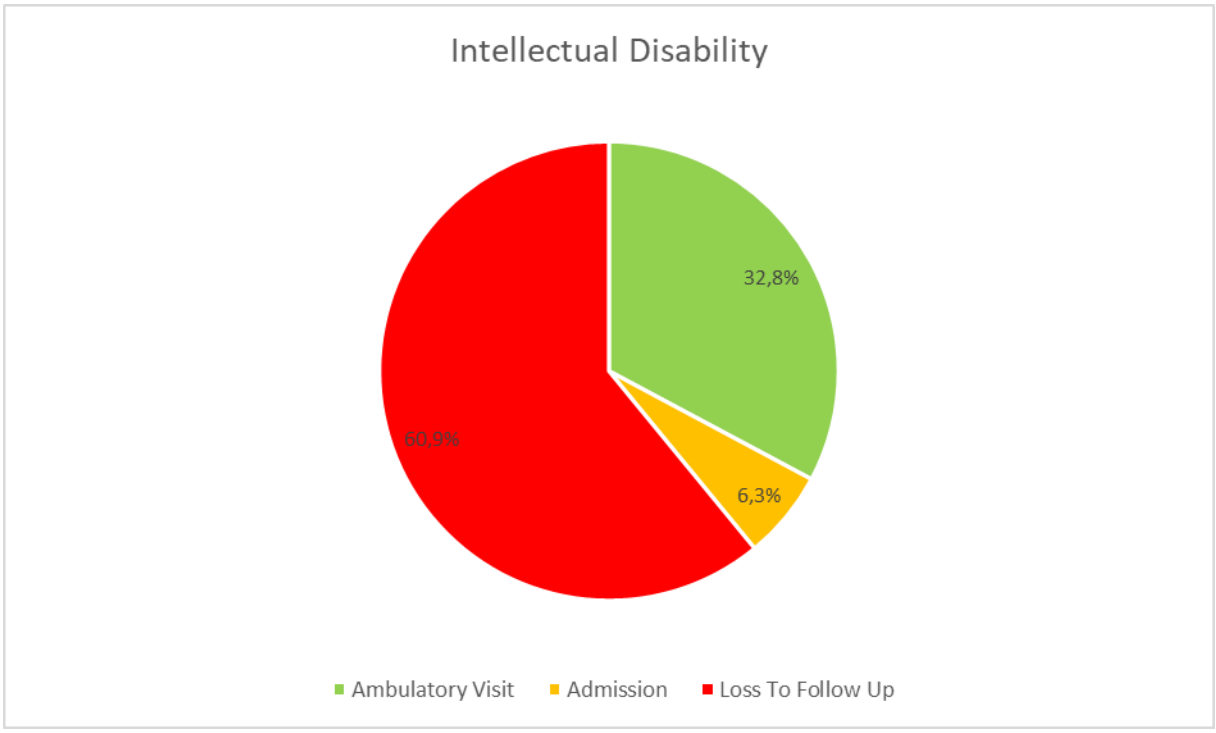

Figure 16: Pie Chart of Ambulatory Visits, Readmission or Loss to Follow Up in patients with an Intellectual Disability

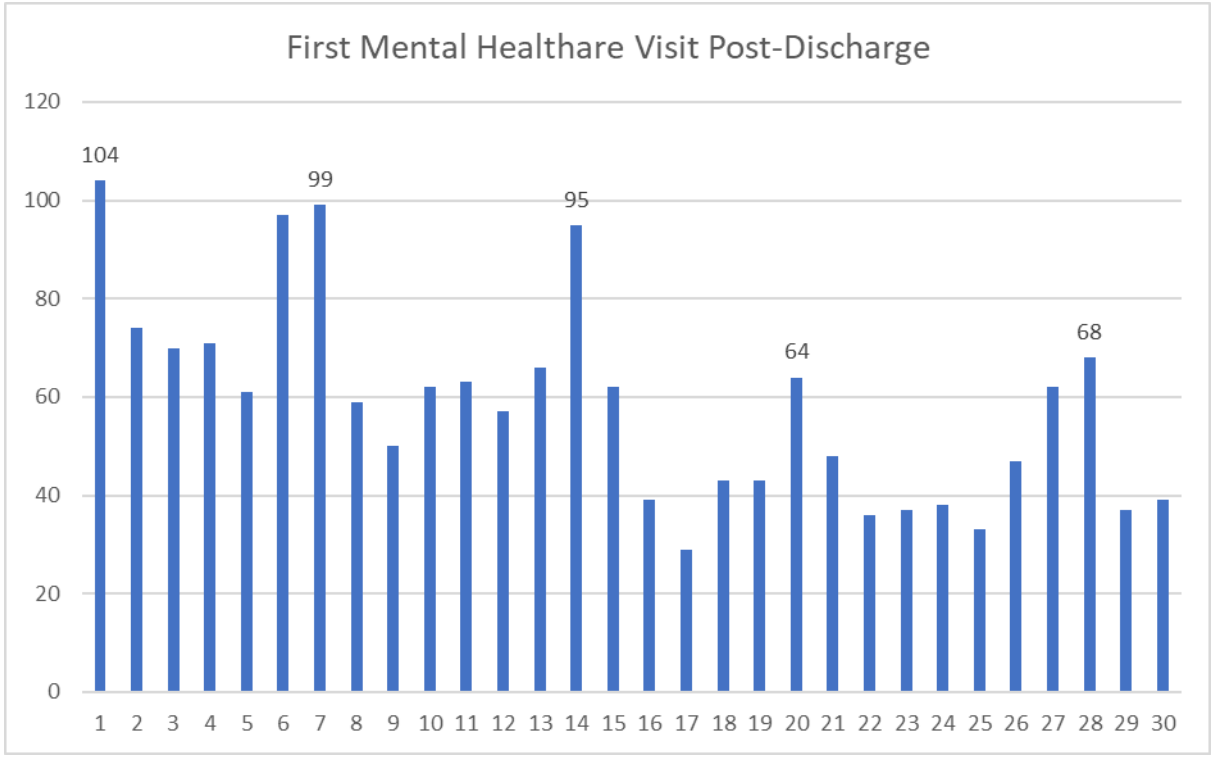

Figure 17: Bar Graph of First Primary Mental Healthcare Clinic Visit by Day Post-Discharge

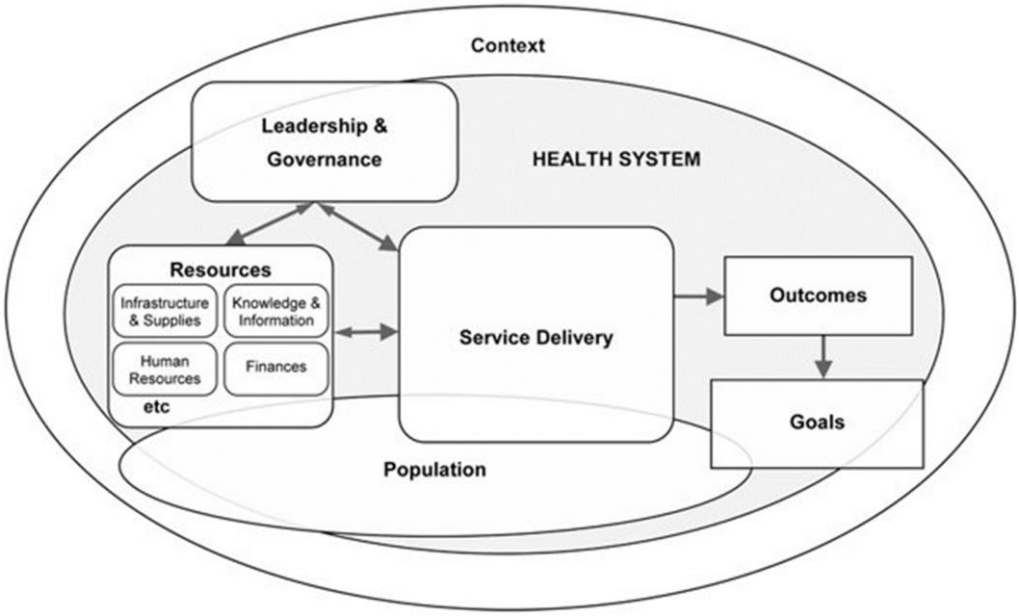

Figure 17: Van Olmen Health System Dynamics Framework (Van Olmen et al, 2012)

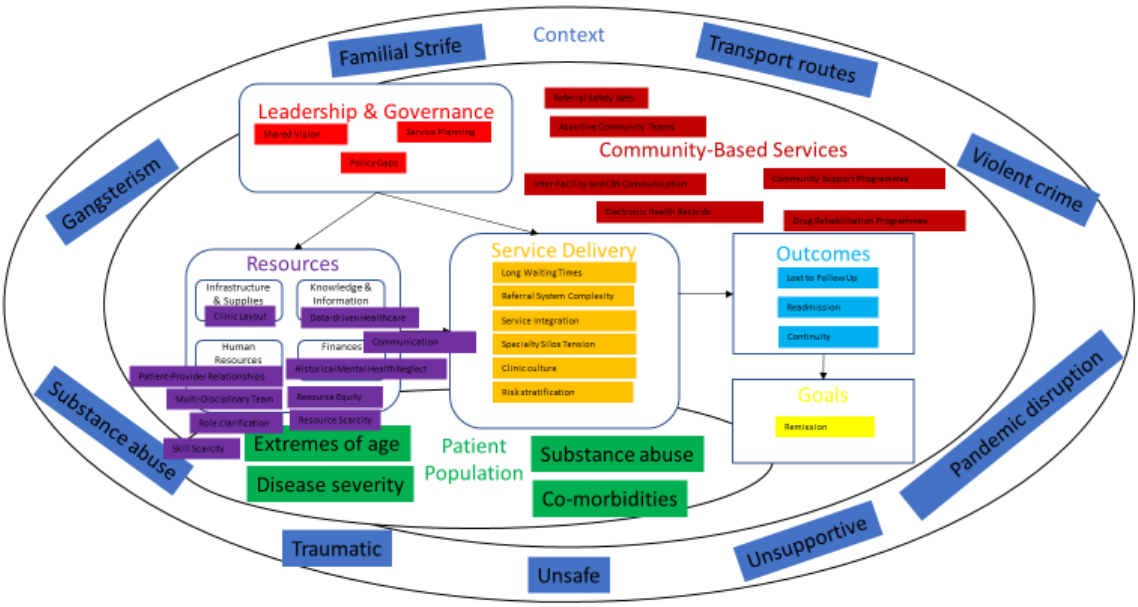

Figure 18: Applied Van Olmen Health System Dynamics Framework (Van Olmen et al, 2012)

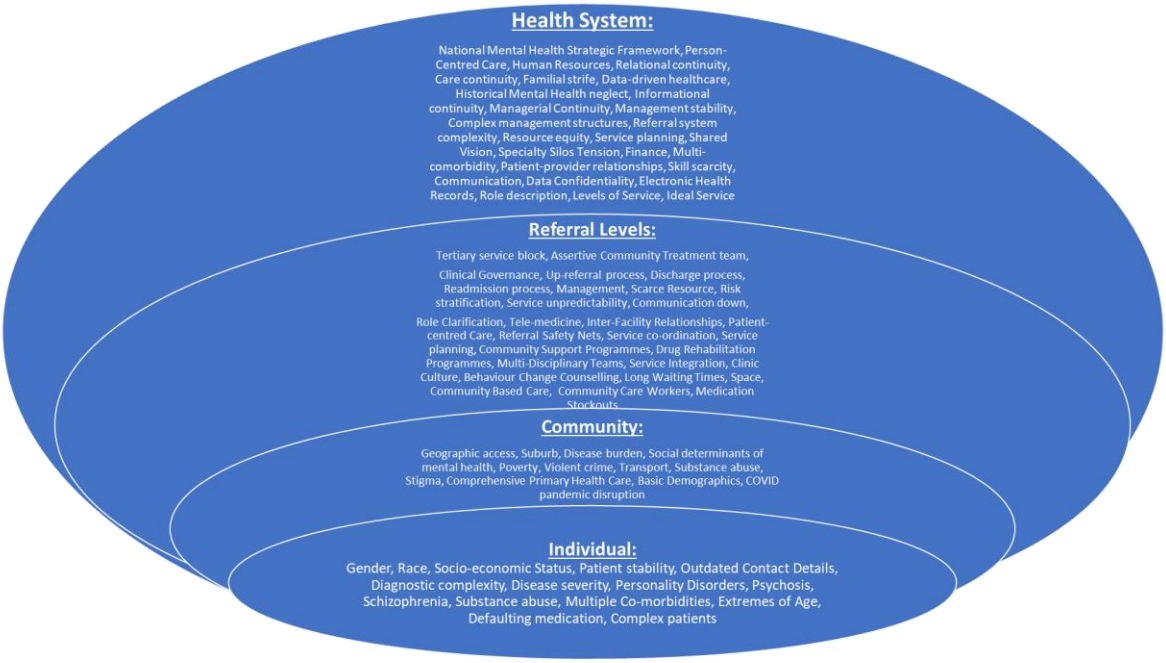

Figure 19: Applied Socio-Ecological Model

	Facilities (total population per facility, in millions) (N = 153)	Beds (rate per 100,000 population) (N = 141)	Admissions (rates per 100,000 population) (N = 118)	Continuity (% discharged patients seen within a month) (N = 26)
Global	**2.85**	**6.5**	**35.8**	**73%**
WHO region				
AFRO	8.36	1.9	10.5	84%
AMRO	1.34	8.7	44.2	34%
EMRO	4.15	4.2	27.9	55%
EURO	0.64	35.0	238.6	81%
SEARO	28.78	2.1	14.5	89%
WPRO	7.48	3.5	2.8	79%
Income group				
Low-income	11.67	1.6	7.6	47%
Lower-middle income	4.40	4.0	14.4	80%
Upper-middle income	1.78	14.4	41.9	63%
High-income	0.78	41.8	142.3	76%

Figure 20: Mental Hospital indicators by WHO region and World Bank country income group (WHO, 2015)

Appendix 9: Additional Tables

Table 11: Summary Table of recommended mental healthcare indicators (OECD, 2004)

Area	Indicator Name	Numerator	Denominator
Continuity of Care			
	Timely ambulatory follow-up after mental health hospitalisation	Number of persons hospitalised for primary mental health diagnoses with an ambulatory mental health encounter with a mental health practitioner within i) 7 days and ii) 30 days of discharge.	Number of persons hospitalised for primary mental health diagnoses.
	Continuity of visits after hospitalisation for dual psychiatric/ substance related conditions	Number of persons with at least four psychiatric and at least four substance abuse visits within the 12 months following discharge.	Number of hospital discharges for dual diagnosis of psychiatric disorder and substance abuse.
	Racial/ethnic disparities in mental health follow-up rates	Number of persons with at least one visit in 12 months after initial visit stratified by race/ethnicity.	Number of individuals with a mental health-related visit.
	Continuity of visits after mental health-related hospitalisation	Number of persons with at least one visit per month for six months following hospitalisation.	Number of persons hospitalised for psychiatric or substance-related disorder.
Coordination of Care			
	Case management for severe psychiatric disorders	Number in receipt of case management (all types).	Number of persons with specified severe psychiatric disorder in contact with the health care system.
Treatment			
	Visits during acute phase treatment of depression	Number of persons with at least three medication visits or at least eight psychotherapy visits in a 12-week period.	Number of persons with a new diagnosis of major depression.
	Hospital readmissions for psychiatric patients	Of the total number of discharges from psychiatric inpatient care during a 12 month reporting period, the total number of readmissions to psychiatric inpatient care that occurred within i)7 days and ii) 30 days.	Total number of discharges from psychiatric inpatient care during a 12-month reporting period.
	Length of treatment for substance-related disorders	Number of persons with treatment lasting at least 90 days.	Number of persons initiating treatment for a substance-related disorder.
	Use of anti-cholinergic anti-depressant drugs among elderly patients	Number of persons using an anti-cholinergic anti-depressant drug.	Number of persons age 65+ prescribed anti-depressants.
	Continuous anti-depressant medication treatment in acute phase	Number of persons age 18 years and older who are diagnosed with a new episode of depression and	Number of persons age 18 years and older who are diagnosed with a new episode of depression and

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Table 12: Summarised quotes from Focus Group Discussion

Name	Clinic	COC Definition Defaulting Definition	Formal definition Other definitions	Continuity Rates Solutions	Continuity Rates by Suburb/Clinic	Continuity Rates by Diagnosis, Gender, Age, Socio-Economic Status	VHW MHCU Discharge Project	External support
Sr A	Lady Michaelis CDC	"Ongoing treatment at all levels of Care, from primary to tertiary level and back to primary level, care should continue: "Defaulting is when patients are not taking their medication and are not following their discharge plan. They don't come for their appointments, they don't take their medication, which is a big problem for me, as this can lead to relapse, and being readmitted"	"The WHO definition is useful and practical." "Most hospitals give a two-week follow-up date, and most patients come at this time. Sometimes, on the second week we do need to assess them, to see if the medication is effective or not, and whether there are any side effects. Some patients appreciated this, and some people do not."	"There has been great improvement in COC at the Clinic. Buy-in from interested and passionate Medical Officers makes a huge difference. Staff will direct patients properly." "I have built solid relationships with staff. So, when I am on leave, the staff will never send a patient home without medication." "What makes a big difference is orientating patients to a facility, so that they know the system and are familiar with the people there. They know they can go to the triage room; they know who to go to. Overall, there is less stigma against mental health patients." "I try to break that dependence. I can get sick, and then what? I try to make sure patients do not turn back home. It's also important for patients not to get too attached, as there are other clinicians that can see them."	Estimated 70% within 30 days, and 30% LTFU. "Worse COC assumed in Hout Bay, Ocean View and False Bay suburbs. There are no mental health nurses, only visiting Registrars at these clinics, and they have to travel outside."	Patients with Borderline Personality Disorder. "Patients who are newly diagnosed with a mental health disorder under the age of 18 years, those are your defaulters." "That group for me, especially with substance abuse, is quite a problem." Assumed females better at following up on appointments. Males worse, but also due to more substance abuse."	"The new discharge methods have improved COC in a way, but not completely." "The ACT team? I don't know where they are."	"Over the years, mental health has been at the bottom of the food chain." There were improvements made, but they need to become more focused on the input, and the resources for psychiatry and mental health on the whole. Also, in terms of staffing, we used to be five mental health nurses as an entity on its own as psychiatry." The idea is to make us integrate and multi-task, but how do you do it with such a big workload. The resources are not sufficient. There are not enough resources in the community for patients either, such as resources, support, homes and halfway houses, for psychiatric patients in the community. Staff remuneration is also a problem. Based on their monthly pay, staff ask themselves, is it worth it? This is where the health Department can make a difference.
Sr B	Retreat CHC	"COC means care is ongoing, in a holistic approach. Wherever a patient presents, that place should be able to help the person."	"The new people must come after two weeks, or old patients whose families can see that they are not fully controlled. The old patients who have been discharged previously and	"For post-discharge patients, there is no problem. Patients will get triaged, once they see their psychiatric discharge letter, then they get sent to me in my room." "COC is better than before. I have an	Estimated 80% within 30 days, and 20% LTFU. The data seems to be very low. Questioned the data	Substance abuse patients, especially the newly diagnosed. (with general agreement amongst group) "The elderly generally follow-up appropriately, as they are either	CBS involvement can be improved, to encourage patients to come to the Clinic, and provide reports back to the mental health nurses.	Prioritize mental health and decrease the stigma of healthcare workers towards mental health. Because they do not know how to treat mental health patients, the patients are pushed away from them, because they are not eager to deal with these clients.

		"The current system has a two-week discharge. I am not worried if patient's do not come at this point, only after a month, as this means they do not have any medication." "Valkenberg only discharges patients with two weeks of medication, so for these patients I will be more concerned." "Defaulting means not coming to clinic appointments, and non-compliance with medication."	already know the system will only come later." "Valkenberg also sometimes discharges patients on Clozapine, who will need weekly bloods done by the Clinic." "The areas around my clinic – that is where people are playing lekker Cowboys and Crooks. It's like having Guy Fawkes on a daily basis."	MO that I trust. I take Mental Health patients to this person if I need to. Other clinicians do not have time for mental health clients in-between the busy chronic stable patient queues." "When I went on Maternity Leave, and patients would come to see me, they would turn around and leave, and only come back to the clinic when I was back months later. All my patients ended up in Stikland after being stable for many years. This is because we have to build trust relationships and have patience with clients, and that is very important for COC." "Handover time is important when going on leave for extended period. It's all about relationships you build with clients over the years. Clients don't like to have to speak to a new person. They have their own perception."	source and processes. Patients from areas with no mental health nurses also come to Lady Michaelis and Retreat, as these are on bus and taxi routes."	in old-age homes who bring them for appointments or live with their family who do this for them." "It depends on patient's social circumstance; if people have no support, or come from broken homes, or their relatives are gang bosses, and they are doing this (substance abuse) to belong, then they are going back into that, and nobody cares. It's almost liked a circle of abuse." "Parents are also drug users, and many fathers are in jail, it's just a difficult environment."	We have not seen the ACT team for a very long time, as they stopped coming out to our facilities during COVID. They just asked us to take over management. COVID is now klaar, when are they taking their patients back?" "They used to come to my room in the Clinic to see local area patients (also because of the dangerous environment in certain areas, such as Lavender Hill. Patients have asked me to write letters to the ACT team to come and see me again. I was told though that it does not work that way unfortunately."	Give mental health the care and priority it deserves. There are no resources. There once was a time when I had to see fifty patients a day. Don't I also need my own mental health? For my own sanity I had to do three-monthly and six-monthly repeat visits. There was no support. The support for the mental health patient and the mental health department – that is what the system can do. Only when someone raises something up in parliament about mental health, then there's some noise, but two weeks' later, it's died down. At the start of the pandemic I went to facility manager's office and said that we need to do something for mental health for the staff. Until today I am waiting for a response." "COVID affected the mental health of everyone, whether you had it or not, especially during the time of hard lockdown. Which is why we created a resource list of mental health services for staff to access. I don't think management knows what mental health entails. Transfer of care happens until a patient looks at them wrong – then it's 'go back to the mental health nurse.
Sr C	Lotus River CDC	"COC means caring on all levels, from the first time a patient is seen." "Defaulting is when patients do not come for their appointments, and when they do not take their medication."	"Thirty days is fine for most patients, except for patients on the two-weekly IM depot injections, they must come within two weeks"	"I have a screening system where I keep all the names of patients booked for me. Patients know to come directly to my room." "COC is better than before. Although, when sometimes when patients here that I am not on duty, they turn around and go back home."	"Lotus River does not have a direct taxi routes, clients would prefer not to walk in dangerous areas."	"In my experience, it's a very small amount of patients who will not be able to attend the clinic at all because of finance. Most people will make a plan to come. Especially older, more mature patients."	General awareness of change in practice over time, from paper discharges, to faxed discharges, to ECCR email discharges and now CBS linkage to care. But not as distinct projects.	"Give more money (laughs)." "Continue supervision." "Support for us, because we do not have any. We cannot go to Family Physicians to ask them for assistance with mental healthcare users." "They must leave space for us to vent our frustrations. We need to speak to other mental healthcare workers."
Sr D	Grassy Park CDC	COC is continuous care	"Yes, thirty days is generally okay.	"Unfortunately, I do not have the luxury	They would not know	"Shelters and rehabilitation		"Have more recognition for mental health services,

		– for us, this means to continue whatever plans have been put in place by the discharging hospital, but also to continue proper management of the patient long term as well." "Defaulting means patients not taking medication and not following up with appointments."	Some patients are given two weeks and some four weeks of medication, but patients can come in sooner if there are issues."	of having a designated MO to help me. There is no one there who is passionate or invested in working with Mental Health patients. If I am not there, patients will leave and not come back until I am. I cut my leave short, because I don't want my patients to relapse and default." "I know my colleagues, and I know they are not all for Mental Health." "COC when I am not there is an issue." "We have junior staff doing screening in the front, and they also don't have patience for Mental Health clients. They will inform patients that the mental health nurse is not on duty. I ask patients in that event at least just get their medication"	who has or who hasn't come for follow-up, as they are not getting communicati on from the discharging hospital. We know what to expect. They will only know who attends on the day.	programmes make sure that their patients come for their visits." (Retreat)		and more support for us as nurses, as well as for the patients." "I don't know what the DOH are willing to give." "The MO's at my Clinic are not interested in mental health. These patients just get told to go to that Sr's office. It's difficult if there is no support."
		Univariate			Bivariate		Change over time	Solution ideas

Table 13: Patients by Sex

Gender	Patients	
M	3585	62%
F	2230	38%
I	2	0%
(blank)	1	0%
Grand Total	**5818**	

Table 14: Patients by Age Categories

Age Categories	Patients	
10 to 19	126	2%
20 to 29	1339	23%
30 to 39	1913	33%
40 to 49	1039	18%
50 to 59	782	13%
60 to 69	439	8%
70 to 79	130	2%
80 to 89	43	1%
90 to 99	7	0%
Grand Total	**5818**	

Table 15: Patients by Place of Residence

Suburb	Patients	%
Retreat	806	14%
Lotus River	545	9%
Grassy Park	467	8%
Steenberg	357	6%
Ottery	318	5%
Wynberg	298	5%
Parkwood	277	5%
Lavender Hill	215	4%
Plumstead	183	3%
Imizamo Yethu	162	3%
Capricorn	161	3%
Pelikan Park	153	3%
Seawinds	108	2%
Hout Bay	105	2%
Strandfontein	98	2%
Westlake	86	1%
Strandfontein Village	74	1%
Diep River	69	1%
Heathfield	63	1%
Cafda Village	61	1%
Eagle Park	50	1%

Table16: Patients by Household Income Group

Household Income Group	Patients	%
H0	782	13%

H1	4471	77%
H2	239	4%
H3	213	4%
(blank)	113	2%
Grand Total	**5818**	

Table 17: Patients by Year of Discharge

Years	Numbers	%
2015	915	16%
2016	731	13%
2017	852	15%
2018	931	16%
2019	1159	20%
2020	1230	21%
Grand Total	**5818**	

Table 18: Patients by Diagnostic Category

ICD10 Code Categories	Patients	%
Psychotic Disorder	2413	41%
No Code	1343	23%
Mood Disorder	736	13%
Self-Harm	599	10%
Substance Abuse	429	7%
Other	170	3%
Intellectual Disability	128	2%
Grand Total	**5818**	

Table 19: Patients by Continuity, Readmission and Loss to Follow-Up Status

LTFU Status in 30 days post-discharge	Patients	%
Ambulatory visit at a Southern Sub-District MH Clinic/VHW OPD	1442	25%
Admission and Ambulatory visit at MH Clinic	311	5%
Admission at a MH in-patient service	193	3%
LTFU in 30 days	3872	67%
Grand Total	**5818**	

Table 20: Focus Group Discussion Introductory Information

Name	Clinic	Current years in post	Most commonly interacts with CBS	Clinic Drainage Areas
Sr A	Lady Michaelis CDC	20 years	Cape Mental Health Coma Care Hope House Hub Counselling Centre Substance Abuse Relief Services FAMSA Mosaic Social Services Various Shelters SAPS SANCA Occupational Services	Wynberg Plumstead Westlake Diep Rivier Heathfield Ottery Strandfontein Kenilworth Bishopscourt Rosebank Kenwyn Tokai Lakeside Muizenberg Claremont Constantia Southfield Rondebosch
Sr B	Retreat CHC	11 years	Compassion in Action ZOE Living Hope Hope House New World Foundation MATRIX Dews of Quietness Cape Mental Health DSD Grassy Park	Retreat Steenberg Lavender Hill Capricorn Westlake Cafda Seawinds Pelican Park Heathfield Lotus River Grassy Park Plumstead Parkwood Hout Bay Diep River Ottery Strandfontein Muizenberg Lakeside Westlake
Sr C	Lotus River CDC	9 years	Cape Mental Health Compassion in Action Living Hope MATRIX Oasis Care Centre	Lotus River Grassy Park Ottery Parkwood Pelikan Park Strandfontein Strandfontein Village Eagle Park Lansdowne Fairways Schaap Kraal Philippi
Sr D	Grassy Park CDC	6 years	Cape Mental Health DSD Grassy Park Compassion in Action Living Hope MATRIX	Pelikan Park Grassy Park Parkwood Lotus River Steenberg Retreat

Appendix 10: BMC Health Services Research Article Template

Criteria

Research articles should report on original primary research, or present a new experimental or computational method, test or procedure. Manuscripts reporting results of a clinical trial must conform to CONSORT 2010 guidelines. Authors of randomized controlled trials should submit a completed CONSORT checklist alongside their manuscript, available at www.consort-statement.org. Research articles may also report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our editorial policies. Please note that non-commissioned pooled analyses of selected published research will not be considered. Studies reporting descriptive results from a single institution or region will only be considered if analogous data have not been previously published in a peer reviewed journal and the conclusions provide distinct insights that are of relevance to a regional or international audience.

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The information below details the section headings that you should include in your manuscript and what information should be within each section.

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The title page should:

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  - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
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- indicate the corresponding author

Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

- **Background**: the context and purpose of the study
- **Methods**: how the study was performed and statistical tests used
- **Results**: the main findings
- **Conclusions**: brief summary and potential implications
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Keywords

Three to ten keywords representing the main content of the article.

Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

Methods

The methods section should include:

- the aim, design and setting of the study
- the characteristics of participants or description of materials
- a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses
- the type of statistical analysis used, including a power calculation if appropriate

Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

Conclusions

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- Consent for publication
- Availability of data and materials
- Competing interests
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