



---

# **AN EVALUATION OF THE HEALTH SYSTEM COSTS OF MENTAL HEALTH SERVICES AND PROGRAMMES IN SOUTH AFRICA**

**SUMAIYAH DOCRAT, DONELA BESADA AND CRICK LUND**

**October 2019**



Alan J. Flisher Centre for  
Public Mental Health

THIS PUBLICATION WAS SUPPORTED BY THE  
ALAN J. FLISHER CENTRE FOR PUBLIC MENTAL HEALTH  
DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH  
UNIVERSITY OF CAPE TOWN  
SOUTH AFRICA

## AUTHORS

**SUMAIYAH DOCRAT<sup>1</sup>**

**DONELA BESADA<sup>2</sup>**

**CRICK LUND<sup>1,3</sup>**

1. Alan J. Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town, South Africa
2. Health Systems Research Unit, South Africa Medical Research Council, Cape Town, South Africa
3. Centre for Global Mental Health, King's Global Health Institute, Health Service and Population Research Department, Institute of Psychiatry, Psychology and Neuroscience, King's College London, United Kingdom

# DISCLAIMER

Information presented in this Report is based on best available data derived from primary and secondary sources. Discrepancies between different sources reflect the current quality of mental health systems data. All data should therefore be interpreted carefully and with recognition of potential inaccuracy. The information contained in this publication may be freely distributed and reproduced, provided that the source is acknowledged.

Sumaiyah Docrat is a staff member of the University of Cape Town and is supported by the South African Medical Research Council through its Division of Research Capacity Development under the SAMRC National Health Scholars Programme from funding received from the South African National Treasury. The authors alone are responsible for the views expressed in this publication and they do not necessarily represent the decisions, policy or views of the University of Cape Town, the South African Medical Research Council or the funders.

## **Suggested citation for this report**

Sumaiyah Docrat, Crick Lund, & Donela Besada. (2019). An Evaluation of the Health System Costs of Mental Health Services and Programmes in South Africa. University of Cape Town.  
<https://doi.org/10.25375/UCT.9929141>

## **Suggested citation for the accompanying open-access publication**

Docrat, S., Besada, D., Cleary, S., Daviaud, E., Lund, C. 2019. Mental health system costs, resources and constraints in South Africa: a national survey. Health Policy and Planning. Advance article. Available at:  
<https://academic.oup.com/heapol/advance-article/doi/10.1093/heapol/czz085/5572608>

# Table of Contents

<b>ACKNOWLEDGEMENTS .....</b>	<b>6</b>
<b>LIST OF ACRONYMS AND ABBREVIATIONS.....</b>	<b>7</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>9</b>
<b>INTRODUCTION .....</b>	<b>16</b>
<b>MATERIALS AND METHODS .....</b>	<b>20</b>
Setting.....	20
Approach and Design .....	20
Data Collection and Data Sources.....	20
Secondary Data Sources.....	24
Data Management and Analysis.....	25
Cost Analysis Approach.....	25
Analysis of Mental Health Human Resources, Medication Availability and Infrastructure.....	29
Ethical and Governmental Approval .....	30
Assumptions & Limitations.....	31
<b>RESULTS .....</b>	<b>33</b>
Health System Costs of Mental Health Services and Programmes.....	33
Per capita mental health spending .....	36
Proportion of Provincial and National health budgets spent on Mental health .....	36
Inpatient and Outpatient Mental Health Costs.....	37
Mental Health Readmission Rates and Costs .....	40
Disorder-specific Average Length of Inpatient Admission .....	42
Mental Health care Utilization among Adults, Adolescents and Children .....	45
Mental Health Human Resources.....	46
District Hospital Infrastructure for Mental Health .....	47
Mental Health Medication Availability .....	48
MNS Disorder Prevalence and Modelled (Crude) Estimates of Access to Care .....	51
<b>Discussion and Recommendations .....</b>	<b>53</b>
<b>Results and Facility-level Data: Eastern Cape.....</b>	<b>59</b>
Inpatient and Outpatient Mental Health Care .....	59
Transfers to Contracted Hospitals for Mental Health Care .....	60
Transfers to NGOs for Mental Health Care .....	60
Mental Health Medication Availability .....	62
<b>Facility-level Costing Results 65</b>	
Eastern Cape: Inpatient Costs of Mental Health Services by Service Level .....	65
Eastern Cape: Outpatient Costs of Mental Health Services by Service Level.....	70
Eastern Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level .....	74
Eastern Cape: Summary Mental Health Inpatient and Outpatient Costs.....	75
Eastern Cape: Child and Adult Inpatient and Outpatient Costs by Service Level .....	75
Eastern Cape: Inpatient Costs of Readmission by Service Level.....	76
<b>Results and Facility-level Data: Free State .....</b>	<b>77</b>
Inpatient and Outpatient Mental Health Care .....	77
Transfers to Contracted Hospitals for Mental Health Care .....	78
Transfers to NGOs for Mental Health Care .....	78
Mental Health Medication Availability .....	79
<b>Facility-level Costing Results 81</b>	

Free State: Inpatient Costs of Mental Health Services by Service Level.....	81
Free State: Outpatient Costs of Mental Health Services by Service Level.....	84
Free State: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	87
Free State: Summary Mental Health Inpatient and Outpatient Costs.....	87
Free State: Child and Adult Inpatient and Outpatient Costs by Service Level .....	88
Free State: Inpatient Costs of Readmission by Service Level.....	88
<b>Results and Facility-level Data: Gauteng .....</b>	<b>89</b>
Inpatient and Outpatient Mental Health Care .....	89
Transfers to Contracted Hospitals for Mental Health Care .....	90
Transfers to NGOs for Mental Health Care .....	91
Mental Health Medication Availability .....	91
<b>Facility-level Costing Results 93</b>	
Gauteng: Inpatient Costs of Mental Health Services by Service Level.....	93
Gauteng: Outpatient Costs of Mental Health Services by Service Level.....	96
Gauteng: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	99
Gauteng: Summary Mental Health Inpatient and Outpatient Costs.....	99
Gauteng: Child and Adult Inpatient and Outpatient Costs by Service Level .....	100
Gauteng: Inpatient Costs of Readmission by Service Level.....	100
<b>Results and Facility-level Data: KwaZulu-Natal.....</b>	<b>101</b>
Inpatient and Outpatient Mental Health Care .....	101
Transfers to Contracted Hospitals for Mental Health Care .....	102
Transfers to NGOs for Mental Health Care .....	102
Mental Health Medication Availability .....	103
<b>Facility-level Costing Results 106</b>	
KwaZulu-Natal: Inpatient Costs of Mental Health Services by Service Level.....	106
KwaZulu-Natal: Outpatient Costs of Mental Health Services by Service Level.....	110
KwaZulu-Natal: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	114
KwaZulu-Natal: Summary Mental Health Inpatient and Outpatient Costs .....	115
KwaZulu-Natal: Child and Adult Inpatient and Outpatient Costs by Service Level.....	115
KwaZulu-Natal: Inpatient Costs of Readmission by Service Level.....	116
<b>Results and Facility-level Data: Limpopo.....</b>	<b>117</b>
Inpatient and Outpatient Mental Health Care .....	117
Transfers to Contracted Hospitals for Mental Health Care .....	118
Transfers to NGOs for Mental Health Care .....	118
Mental Health Medication Availability .....	119
<b>Facility-level Costing Results 121</b>	
Limpopo: Inpatient Costs of Mental Health Services by Service Level.....	121
Limpopo: Outpatient Costs of Mental Health Services by Service Level.....	124
Limpopo: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	127
Limpopo: Summary Mental Health Inpatient and Outpatient Costs.....	127
Limpopo: Child and Adult Inpatient and Outpatient Costs by Service Level .....	128
Limpopo: Inpatient Costs of Readmission by Service Level.....	128
<b>Results and Facility-level Data: Mpumalanga.....</b>	<b>129</b>
Inpatient and Outpatient Mental Health Care .....	129
Transfers to Contracted Hospitals for Mental Health Care .....	130
Transfers to NGOs for Mental Health Care .....	130
Mental Health Medication Availability .....	132
<b>Facility-level Costing Results 133</b>	
Mpumalanga: Inpatient Costs of Mental Health Services by Service Level.....	133
Mpumalanga: Outpatient Costs of Mental Health Services by Service Level.....	135

Mpumalanga: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	137
Mpumalanga: Summary Mental Health Inpatient and Outpatient Costs.....	137
Mpumalanga: Child and Adult Inpatient and Outpatient Costs by Service Level .....	138
Mpumalanga: Inpatient Costs of Readmission by Service Level.....	138
<b>Results and Facility-level Data: Northern Cape.....</b>	<b>139</b>
Inpatient and Outpatient Mental Health Care .....	139
Transfers to Contracted Hospitals for Mental Health Care .....	140
Transfers to NGOs for Mental Health Care .....	140
Mental Health Medication Availability .....	141
<b>Facility-level Costing Results 143</b>	
Northern Cape: Inpatient Costs of Mental Health Services by Service Level.....	143
Northern Cape: Outpatient Costs of Mental Health Services by Service Level.....	145
Northern Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level .....	147
Northern Cape: Summary Mental Health Inpatient and Outpatient Costs .....	147
Northern Cape: Child and Adult Inpatient and Outpatient Costs by Service Level .....	148
Northern Cape: Inpatient Costs of Readmission by Service Level.....	148
<b>Results and Facility-level Data: North West.....</b>	<b>149</b>
Inpatient and Outpatient Mental Health Care .....	149
Transfers to Contracted Hospitals for Mental Health Care .....	150
Transfers to NGOs for Mental Health Care .....	150
Mental Health Medication Availability .....	151
<b>Facility-level Costing Results 152</b>	
North West: Inpatient Costs of Mental Health Services by Service Level .....	152
North West: Outpatient Costs of Mental Health Services by Service Level.....	154
North West: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	157
North West: Summary Mental Health Inpatient and Outpatient Costs.....	157
North West: Child and Adult Inpatient and Outpatient Costs by Service Level .....	158
North West: Inpatient Costs of Readmission by Service Level.....	158
<b>Results and Facility-level Data: Western Cape.....</b>	<b>159</b>
Inpatient and Outpatient Mental Health Care .....	159
Transfers to Contracted Hospitals for Mental Health Care .....	160
Transfers to NGOs for Mental Health Care .....	160
Mental Health Medication Availability .....	161
<b>Facility-level Costing Results 162</b>	
Western Cape: Inpatient Costs of Mental Health Services by Service Level .....	162
Western Cape: Outpatient Costs of Mental Health Services by Service Level.....	165
Western Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level.....	169
Western Cape: Summary Mental Health Inpatient and Outpatient Costs.....	169
Western Cape: Child and Adult Inpatient and Outpatient Costs by Service Level .....	170
Western Cape: Inpatient Costs of Readmission by Service Level.....	170
<b>References .....</b>	<b>171</b>

---

## ACKNOWLEDGEMENTS

---

This research endeavor was a joint effort of the National Department of Health (NDOH), the Provincial Departments of Health, the South Africa Medical Research Council and the Alan J Flisher Center for Public Mental Health, University of Cape Town, South Africa.

The authors extend special thanks to all government departments, non-governmental organizations and individuals at all levels of the health-system who provided inputs and submissions as part of the research process across the country. The authors acknowledge the contributions and technical inputs of Ms. Emmanuelle Daviaud and A/Prof Susan Cleary who generously gave their time to support the cost analysis.

Further, the authors would like to acknowledge the direction and support received from Ms. MP. Matsoso (Director General – Health), Prof Melvyn Freeman (Former Cluster Manager: Non-communicable Diseases, National Department of Health) and Mr Sifiso Phakathi (Director: Mental Health and Substance Abuse, National Department of Health).

---

## LIST OF ACRONYMS AND ABBREVIATIONS

---

ALOS	Average Length of Stay
CDC	Community Day Centre
CHC	Community Health Centre
DH	District Hospital
DHB	District Health Barometer
DHIS	District Health Information System
DSD	Department of Social Development
DOH	Department of Health
EML	Essential Medicines List
FY	Financial Year
GBD	Global Burden of Disease
HR	Human Resources
HST	Health Systems Trust
MHCU	Mental Health Care User
MHIA	Mental Health Inpatient Admission
MHOV	Mental Health Outpatient Visit
MHPF	National Mental Health Policy Framework and Strategic Plan 2013-2020
MNS	Mental, Neurological and Substance-use
NDOH	National Department of Health
NHI	National Health Insurance
NGO	Non-governmental Organization
OPD	Outpatient
PDE	Patient Day Equivalent



PDOH	Provincial Departments of Health
PERSAL	Personnel and Salary System
PHC	Primary Health Care
PHRC	Provincial Health Research Committee
SASSA	South Africa Social Security Agency
STG	Standard Treatment Guidelines
STATS-SA	Statistics South Africa
TH	Tertiary Hospital
UHC	Universal Health Coverage
USD	United States Dollar
WHO	World Health Organization

---

## EXECUTIVE SUMMARY

---

The Government of South Africa, under the leadership of the Department of Health, developed the National Mental Health Policy Framework and Strategic Plan (2013-2020) which was approved in 2013 [1]. This policy sets out the critical need to invest in mental health so that we reduce the burden of untreated mental disorders and transform our mental health system to provide quality mental health services that are accessible, equitable, comprehensive and integrated at all levels of the health system. The tragic loss of life following the discharge of mental health care users from the Life Esidimeni facility has led to widespread calls for further inquiry in relation to the broader mental health care system and the progress we have made to reshape mental health services in the country since the Policy was adopted.

South Africa's commitment to provide Universal Health Coverage through a National Health Insurance mechanism has the potential to ensure widespread access to critical health services to South Africa's uninsured population [2]. The NHI White paper recognizes the growing burden of NCD's in the country, with mental illness playing a

significant contributory role. The identification of cost-effective mental health services to be included in the benefit package of the NHI to augment investments in primary and community care will be critical to ensure that the mental health needs in South Africa are met. This is a crucial time for our country's mental health response.

Presently, the South African government does not track or specify dedicated budgets for mental health services provided through lower levels of care (i.e. regional and district hospitals, primary care facilities and community and/or nurse-driven community services). While public health expenditure data on mental health at the specialized psychiatric care levels of the health system are available, there is still a very real concern that we do not know how much is currently being spent, making estimates of the additional resources required for a viable mental health service difficult to estimate. This is particularly important when future efforts are to be focused on decentralizing care away from the specialized care level to district, primary and community levels.

Between January and October 2018, the Alan J Flisher Centre for Public Mental Health at the University of Cape Town, in collaboration with National and Provincial Departments of Health and the South African Medical Research Council, evaluated the health system costs of mental health services and programmes in South Africa for the 2016/17 financial year. This has allowed for an understanding of the current mental health costs to the health system across service levels and the potential resource envelope to be augmented for addressing the key mental health service gaps in South Africa.

This study found that the total costs of inpatient and outpatient mental health services and known transfers for contracted hospital and NGO mental health services across all Provinces in South Africa amounted to 8.37 billion rand in the 2016/17 financial year. At the National level, this represented 5.0% of the total health budget (2016/17) and equated to a national average of R180.9 per capita uninsured. It must be noted however that not all Provinces were able to comprehensively specify the range of services and total budgets available for DOH contracted hospital and NGO services for mental health. Per capita mental health expenditure (uninsured) ranged from R58.5 in Mpumalanga to R307.4 in the Western Cape. Both the North West and Limpopo spent less than R100 per capita (uninsured) on

mental health care in the 2016/17 financial year, R91.1 and R80.2 per capita uninsured, respectively. After the Western Cape, Gauteng and KwaZulu-Natal were the highest spending provinces, spending R251.6 and R209.4 per capita (uninsured), respectively.

Of the total, the vast majority of mental health expenditure was spent on inpatient and outpatient mental health services (7.80 billion rand). Approximately 86% of these costs were attributed to inpatient services, while the remaining 14% were attributed to outpatient care. National-level estimates show that care at the Specialized Psychiatric hospital-level made up the large majority of the total inpatient and outpatient cost, amounting to 45% of the total; with Primary-level mental health care services accounting for 7.9%, District hospital mental health care services accounting for 11.7%, Regional hospital mental health services accounting for 13.9% and Tertiary and Central hospitals accounting for 8.5% and 7.5%, respectively.

Based on national average readmission rates calculated through primary data collected directly from facilities, across all sampled South African hospitals the average readmission rate for mental health inpatients is 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals,

Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for South Africa, readmissions during the 2016/17 financial year are estimated to have consumed 24.2% of the total health system expenditure on inpatient care, equivalent to an estimated 1.5 billion rand. This finding is stark, when considering that the total primary health care expenditure on mental health amounted to only 616 million, while based on available budgets, community-based NGO services for mental health cost 250 million in the 2016/17 financial year.

Collectively, 93.2% of inpatient mental health admissions in South Africa were for adults aged 18 years and older, with only 6.8% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults receiving outpatient mental health care in the country was 94.2%, compared to only 5.8% of those under 18 years.

We found that for District, Regional, Tertiary, Central Hospitals and Specialized Hospitals, mental health inpatient admissions were substantially longer, when compared to general admissions. At the district hospital-level, mental health care users admitted for inpatient care spent twice as long in hospital in comparison to all

patients. At the regional and tertiary hospital-level(s), mental health inpatient admissions lasted nearly 6 and 8 times longer, respectively, when compared to inpatient admissions for all health conditions. At the central hospital-level, mental health patients admitted for inpatient care spent almost 5 times longer in hospital. While all patients admitted at the specialized psychiatric hospital-level were considered mental health inpatient admissions, the ALOS at this level of care was 157.1 days.

With respect to mental health drug availability, the findings illustrate that there is little consistency across levels of the health system and across provinces in terms of which drugs are not routinely available and at what level of care, which contradicts the recommendations outlined in the Standard Treatment Guidelines. Furthermore, based on the sampled facilities at each level of the health-system, the most frequently stocked out drugs are those prescribed for the treatment of: adult depression and dysthymia; bi-polar disorder, psychosis, epilepsy, dementia, child and adolescent developmental disorders and adolescent behavioural-conduct disorder.

There are huge disparities in mental health personnel across provinces with the availability of psychiatrists ranging from 0.08 to 0.89 per 100,000 uninsured population. These disparities need to be rectified with a more consistent, evidence-based

approach to planning. This study has confirmed that the majority of public sector psychiatrists are concentrated in the urban provinces which is consistent with existing evidence [3]. Yet, mental health workforce targets for psychiatrists for the southern sub-Saharan region suggest that 1.9 psychiatrists per 100,000 will be needed by 2050 [4]. There is also a critical shortage of auxiliary workers, including social workers and occupational therapists, critical for rehabilitative care and support services for mental health users. These findings must, however, be considered in light of the study's limitations; tracking health personnel is instrumental in the delivery of mental health services in the country and critical in order to determine access to care and address shortages; yet the current staffing database of the DOH could not identify specific cadres of specialists or specialist nurses, making estimates of the availability of psychiatrists limited to those facilities and districts that completed primary data collection and estimates of the availability of specialist nurses with advanced psychiatric training indistinguishable from those with other advanced training in other areas.

Despite the majority of District hospitals being designated by the Mental Health Care Act for the provision of 72-hour assessments and the subsequent provision of further involuntary care, treatment and rehabilitation; there are significant

characteristics outlined by the Mental Health Care Act (2002) that are not met across a large number of the hospitals. Over 62% of district hospitals across the country indicate that adult mental health inpatients are kept in general wards with other patients. The large exception to this is in the Free state, which indicates that all its hospitals keep their mental health patients separately. KZN, Limpopo, Mpumalanga and the Northern Cape all indicate that approximately 80% and higher of their hospitals keep their mental health patients together with other patients. An extremely low proportion of hospitals keep their adult and adolescent patients separately (13%), however, close to 80% of all hospitals across the country, separate female and male mental health inpatients.

There are several conclusions and recommendations that have emerged from this study that are worthy of consideration:

1. There are huge disparities between provinces in allocation of mental health resources, which need to be rectified with a more consistent, rational, evidence-based approach to planning.
2. Inpatient care is the main form of care, comprising 86% of the cost of mental health care. This is a reflection of our historical legacy and a focus on psychiatric hospitals and curative inpatient care – we need to develop outpatient care, especially primary

care and community-based care, in keeping with international best practice, and the SA Mental Health Policy Framework.

3. We must not reduce investments in psychiatric hospitals until adequate primary care and community-based services are developed, and the quality of care and infrastructure are improved in hospitals at all level of the health system.
4. Adequate attention must, however, be paid to the potential savings that may yield from reducing readmission rates for all hospitals which cost the health system 1.5 billion rands in the 2016/17 financial year. This is stark when compared to the total primary care service for mental health costing 616 million. It must be recognized that most readmissions are as a result of systemic failures in transition from hospitals to the next source of care within the community.
5. Acknowledging that most mental disorders have their onset before the age of 18 years, this study has revealed an exceptional gap in terms of the service availability for children and adolescents in South Africa, whereby only 6.8% of inpatient admissions and 5.8% outpatient mental health visits were for patients under the age of 18 years.
6. Routine information systems need to be strengthened in order for facilities to

monitor the quality of care and service provision to identify inefficiencies. Most facilities who contributed to this study were unable to report on condition-specific inpatient and outpatient loads, average length of inpatient admissions, readmission rates or referral pathways post-discharge.

7. There is discordance between the National database of NGOs licensed by the Department of Health and those reported through primary data collection. Provincial health departments must focus efforts on mapping the NGO service landscape within their Province, specifically to understand their capacity, costs per patient and subsidies received from Government. According to DOH databases and primary data collection, there are still a number of Provinces with very limited or no community-based service provision for mental health.
8. The availability of psychotropic medication must be monitored, as direct facility input confirmed that drugs prescribed for the treatment of: adult depression and dysthymia; bi-polar disorder, psychosis, epilepsy, dementia, child and adolescent developmental disorders and adolescent behavioural-conduct disorder were frequently stocked out. It remains unclear

what the reasons for the stock-outs are, and further interrogation is required.

9. Despite being listed in the Standard Treatment Guidelines, a number of mental health drugs are not routinely available, which points to a need to update the guidelines in line. The unavailability of drugs at primary health care levels may be partly due to unavailability of doctors and health care workers with advanced psychiatric training authorized to initiate treatment which speaks to the need to move toward nurse-initiated prescribing of psychotropic medication, particularly for depression and anxiety disorders.
10. Health promotion and prevention campaigns have not been costed in this report because there were no funds reported on to support these activities. However, most health districts reported a considerable number of campaigns to improve awareness for mental health. Investments in this area are critical to address stigma and promote the use of mental health services.
11. Tracking health personnel instrumental in the delivery of mental health services in the country is critical in order to determine access to care and address shortages through task shifting approaches. The

current staffing database of the Department of Health should be expanded to include specific cadres of specialists.

12. Based on modelled estimates, approximately 1.2% and 7.5% of the uninsured South African population requiring care received some form of inpatient and outpatient care, respectively – suggesting the treatment gap for mental disorders, epilepsy and intellectual disability in South Africa is close to 91%. This does not take into consideration the prevalence of mental disorders when they are co-morbid with other conditions. Major depressive disorder prevalence rates among people living with HIV/AIDS in South Africa has been estimated to range from 11.1% to 34.9% (Petersen et al., 2013). Further, South Africa is seeing a rise in a hidden epidemic of trauma related psychopathology among children, adolescents and adults (Burns, 2010). Additionally, mental disorders have been found to be commonly associated with diabetes, hypertension and TB.
13. We need to undertake an investment case for national Treasury, providing a rational public health approach to new investments for mental health care.

The Ministerial Advisory Committee on Mental Health was appointed by the Minister to advise the Department of Health on technical matters regarding the achievement of the objectives of the Act as well as the National Mental Health Policy Framework, and a Think Tank of experts has been established to advise the Department on mental health issues.

Following the completion of this first phase of work, technical support from the authors at the University of Cape Town (UCT) (Alan Flisher Centre for Public Mental Health) and the South Africa Medical Research Council (SAMRC) has been requested to develop a mental health investment case. We are now in a position to explore the mechanisms by which our country and Provinces can accelerate our progress towards the achievement of the National Mental Health Policy Framework and Strategic Plan (2013-2020) and take forward the prescribed recommendations of the South African Human Rights Commission Report on the State of Mental Health Care in South Africa in the context of the recent passing of the NHI Bill.

This investment case will provide empirical evidence on the costs and benefits of investing in mental health based on the existing constraints identified in our mental health system, the most cost-effective mix of interventions to address these constraints, and the broader health-sector

transformations that are ongoing in the country, over the next 20 years. Based on consultation with the Mental Health Think Tank, the investment case will model the costs and returns of interventions and programmatic enablers across the following priority areas:

1. Community-based Residential and Day Care services for Mental Disorder(s) and Intellectual Disability including Rehabilitation and Occupational Therapy
2. Integration of Mental Health into PHC Chronic care management; Maternal, Child and Infant Health; Emergency Services)
3. Child and Adolescent Mental Health treatment
4. Hospital infrastructure for mental health (including infrastructure for 72-hour assessments)
5. Health information systems for Mental Health
6. Governance for Mental Health (Provincial and District Mental health plans, resourcing and planning)
7. Inter-sectoral strategies for Mental Health
8. Forensic mental health
9. Prevention/Promotion for Mental Health across the life-course

Completion of the investment case is anticipated by October 2020.



---

## INTRODUCTION

---

Global calls for parity in resource allocation for mental health and the generation of clear economic and clinical evidence for mental health reform have not in themselves translated to systemic changes in the way mental health services are financed and delivered in most Low- and Middle-income countries (LMICs) [5]. LMICs such as South Africa, contemplating mental health system scale-up, embedded into wider health-sector transformations toward universal health coverage, require detailed, reliable and locally-derived estimates on current resources and expenditures on mental health – the absence of which has limited their ability to initiate a sustained and rational approach to planning for the scale-up of mental health care [5].

This study set out to propose and apply a methodology that addresses a number of key information gaps for LMICs contemplating mental health system reform. Understanding the variation in health system resources and constraints within countries represents the first step in a rational approach to planning for the implementation of mental health reforms [5]. This study has attempted to address these constraints by providing empirical

data regarding national mental health resources, mental health system constraints and treatment coverage in South Africa – both to provide a baseline for further investments and improved efficiency, but also to illustrate methods for this task in other LMICs [5].

Neglect of mental health services in South Africa has been high on the media and public advocacy agenda recently. The tragic loss of life following the discharge of mental health care users from the Life Esidimeni facility has led to widespread calls for further inquiry in relation to the broader mental health care system. One of the fundamental aspects of this inquiry relates to how much the South African government is currently spending on mental healthcare and on which aspects thereof. Resourcing represents a critical factor in the realization of effective, coordinated and efficient mental health systems.

Understanding the patterns and rates of spending on the mental health system provides a baseline for considering future funding and allows for system planners to understand the impacts of their policies, and to foster decision making that will

lead to definable improvements in equity, efficiency and returns-on-investment.

This study has attempted to address these constraints by providing, for the first time, empirical data regarding national mental health resources, mental health system constraints and treatment coverage in South Africa – both to provide a baseline for further investments and improved efficiency, but also to illustrate methods for this task in other LMICs [5].

The NDOH has made an explicit pledge to transform mental health services and ensure that “quality mental health services are accessible, equitable, comprehensive and are integrated at all levels of the health system” [1]. This commitment is reflected in the National Mental Health Policy Framework and Strategic Plan (MHPF) 2013-2020, adopted by the National Health Council in July 2013 [1]. The policy envisages the complete integration of mental health care into general health services.

Presently, the South African government does not track or specify dedicated budgets for mental health services provided through lower levels of care (i.e. regional and district hospitals, primary care facilities and community and/or nurse-driven community services). While public health expenditure data on mental health at the specialized psychiatric care levels of the health

system are available, there is still a very real concern that we do not know how much is currently being spent, making estimates of the additional resources required for a viable mental health service difficult to estimate. This is particularly important when future efforts are to be focused on decentralizing care away from the specialized care level to district, primary and community levels.

In the absence of nationally representative surveillance systems, the true extent of the burden of mental disorders in South Africa remains unknown and underestimated. In 2002/3, the first large nationally representative psychiatric epidemiology survey of common mental disorders estimated that 16.5% of adults have experienced a depressive, anxiety or substance use disorder in the previous twelve months, with an estimated 30.3% of South African adults experiencing one of these disorders during their lifetimes [1, 6]. The Global Burden of Disease study (2015) estimates that the prevalence of neurological disorders is 23.3% and the prevalence of mental and substance use-disorders is 14.6% [7]. As in the case of most low and middle-income countries (LMICs), the burden of mental and neurological disorders is increasing in South Africa, and this trend is expected to persist [7].

Estimated deaths from mental, neurological and substance-use (MNS) disorders and behavioral disorders is 11.4 per 100,000 population [8]; six percent (5.6%) suffer from alcohol use disorder [9], which is above the prevalence for the African region. The age-standardized suicide rates per 100,000 population in 2012 was 1.1 and 5.5 for women and men [9], respectively. While estimated deaths due to MNS disorders represent only 4.4% of all estimated deaths due to non-communicable diseases (NCDs) in South Africa, estimates of disability adjusted life years (DALYs) attributable to MNS disorders were 1738.3 per 100,000 population in 2015, representing 15.6% of all DALYs due to NCDs [8]. Further, the rate of Years Lost due to Disability (YLD) due to MNS disorders in 2015 was 1385.4 per 100,000 population, representing nearly 35% of YLDs attributed to NCDs in South Africa [8].

Comorbidities between HIV/AIDS and common mental disorders (CMDs) such as depression and anxiety disorders are also well established: CMDs increase risk for poor adherence to ante-retroviral treatment and depression and stressful life events are independently associated with accelerated HIV/AIDS disease progression. CMDs are the most frequently observed disorders in people living with HIV/AIDS, with depression being the most prevalent, followed by anxiety, post-traumatic

stress disorder and alcohol abuse. Major depressive disorder prevalence rates among people living with HIV/AIDS in South Africa range from 11.1% to 34.9% [10].

For the Mental Health Policy and Strategic Plan to become a reality, there is a need for its activities to be supported by adequate resourcing. A key challenge in improving the resource base for mental health systems relates to the lack of financial data on mental health expenditure and the absence of population-based prevalence estimates of the burden of mental health disorders. Further, routine information systems in place do not require any reporting in terms of the diagnoses of users treated, the length of their admissions, the availability of and prescription of psychotropic medications or the receipt of psychosocial interventions. It is therefore in response to these gaps that this study was conceived – with the goal of assessing the resource use associated with the mental health service, at present, towards an understanding of the potential resource requirements to deliver on the objectives of the MHPF (Department of Health, 2013).

The National Department of Health has echoed this sentiment and identified a need to evaluate the health system costs of mental health services and programmes in South Africa, towards the development of an investment case for mental

health service scale up nationally. The overall purpose of this assignment is to support the National Department of Health's resource mobilization efforts for the effective implementation of the South African Mental Health Care Policy and Strategic Plan (2013). This was done through the systematic costing of the existing National mental health service and the forthcoming development of an investment case.

Addressing the large and growing burden of mental, neurological and substance-use (MNS) disorders at the population level will place new resource demands on the health system of South Africa. In the context of multiple competing demands and constrained budgets, it is essential that the plans and policies developed to address the mental health burden in South Africa include an increased focus on costed evidence-based

interventions, and that future efforts are focused on maximizing returns and improving efficiency.

The intention of this study is therefore to answer the following key questions:

1. How much money was spent on mental healthcare by the South African Government in the years 2016/17?
2. How was this money spent across by service level?

To the best of our knowledge, this is the first study to characterize the public health system expenditure on mental health services in South Africa and document the resources and constraints to the mental health system by service-level and province; achieving one of the highest sample sizes of any costing study conducted for mental health in LMICs [5, 11]

---

## MATERIALS AND METHODS

---

### Setting

This study was conducted across all nine provinces of South Africa at all levels of the healthcare system and reports the full costs of mental health services and programmes rendered through the Provincial and National Departments of Health in South Africa for the 2016/17 financial year.

### Approach and Design

This study employed a cross-sectional, empirical costing approach using primary and secondary data sources. The cost analysis was conducted from the provider perspective, as such the analysis reports total costs from the viewpoint of the health system only and does not include costs carried by patients. The study was conducted for the financial year 1<sup>st</sup> April 2016 to the 31<sup>st</sup> of March 2017 and presents the financial costs of mental health services and programmes for the 2016/17 financial year; all costs are expressed in 2017 Rands.

### Data Collection and Data Sources

#### *Primary Data Collection & Sample*

A national data collection process was initiated in January 2018 and closed in October 2018. Three data collection tools were developed to collect quantitative data related to the South African mental health care service and utilization.

Each of the three tools were designed purposively for the three categories of respondents, as follows:

- Provincial Department of Health respondents
- Regional, Tertiary, Central and Specialized Hospital respondents
- Primary and District Hospital (District health system) respondents

The same approach to data collection was followed in each of the nine provinces of South Africa. Following approval from each Provincial Health Research Committees (PHRCs) and permission from the Provincial Heads of Health, each data collection instrument was sent directly to the target respondents. In some cases, Provincial Health Departments facilitated the distribution of the instruments to the respondents in their respective

provinces. In others, SD and DB sent these directly to the respondents via electronic mail. The e-mailed instruments were followed up with telephone calls and ongoing support to all respondents.

At the provincial-level, Director(s) of Non-Communicable Disease, Director(s) of Mental Health and/or provincial Mental Health Coordinators took responsibility for completing the *Provincial Mental Health Costing Instrument*. The instrument requested information about Provincial-level financial allocations to different service-levels, contracted mental health services, as well as subsidies and service-descriptions regarding day and residential care for Mental Health Care Users (MHCU).

At the hospital-level, hospital Directors and Chief Executive Officers, Pharmacists, Operational Managers and Nursing Managers collectively took responsibility for completing the *Regional, Tertiary, Central and Specialized Hospital Costing Instrument*. The instrument requested information about Hospital-level Mental Health Human Resources and Training, Drug Availability and Stockouts based on the South African Essential Medicines list and Standard Treatment Guidelines, Characteristics of Designated inpatient units and 72-hour assessment areas, Outpatient and Inpatient Mental Health Visits, Average Length of Inpatient Admissions for Mental Health Inpatients as well as Patient loads by mental health disorders/ICD codes.

At the district-level, District Mental Health Coordinators, or District Health Services Coordinators took responsibility for completing the *PHC and District Hospital Costing Instrument*, with input from District Hospital Management and PHC facility management within their districts. We asked that each district complete one copy to summarize all the activities across the district hospitals and PHC facilities in their district with respect to the Mental Health Human Resources, Drug Availability, Mental Health Training, Mental Health Prevention and Promotion Campaigns and Residential and Day Care facilities.

Table 1 outlines the key domains of each instrument, a description of the respondents, the sample size for each province and the overall response rate(s) achieved.

Given that this study did not allow for dedicated fieldwork personnel, we relied entirely on the time and efforts of Department of Health staff working at all levels of the health sector to complete the instruments. Although response rates were low for certain categories of hospitals, it was agreed that this study would make use of existing data where possible (e.g. District Health Information System, District Health Barometer) and collect primary data where none was available or where key gaps were identified. Therefore, the sample size generated using primary data allowed for costs to be

appropriately modeled for all facilities and health districts in the country; together with the use of a number of comprehensive secondary datasets described below.

At the provincial-level, completed provincial data collection tools were received from 8/9 PDOH in South Africa, with 1 PDOH submitting a partially completed provincial data collection tool (Table 1) [5]. For hospitals, response rates were 53.2%, 55.6%, 44.4%, 91.7% and 16.7% for regional, tertiary, central, specialized psychiatric and other specialized hospitals, respectively. This represented 62 of 104 hospitals in the country [5]. At the district-level, 42 data collection tools were received from the 52 health districts of South Africa, representing a response rate of 80.8% [5]. The sample size generated through primary data collection was supplemented with a number of secondary datasets (outlined below) to allow for costs to be appropriately modelled for all facilities and health districts in the country [5]. Although total health system mental health expenditure was estimated for all public sector facilities in the country, the evaluation of mental health system resources and constraints (e.g. medication availability, readmission rates, duration of inpatient mental health admissions and district hospital infrastructure for mental health) was limited to the

sample of facilities that completed primary data collection [5].

TABLE 1 Overview of Primary Data Collection Tools, Respondents and Sample Sizes, by province [5]

	Provincial Department of Health Data Collection	Regional, Tertiary, Central and Specialized Hospital Data Collection					Primary Health Care (PHC) and District Hospital Data Collection
Key Domains of Data Collection Instrument	<ul style="list-style-type: none"> <li>Provincial-level Financial Allocations to different Service Levels</li> <li>Subsidies for Contracted Mental Health Services,</li> <li>Subsidies and Service descriptions regarding Day and Residential care for Mental Health Care Users (MHCU)</li> </ul>	<ul style="list-style-type: none"> <li>Mental Health Human Resources</li> <li>Medication Availability and Stockouts</li> <li>Outpatient and Inpatient Mental Health Visits</li> <li>Average Length of Inpatient Mental Health Admissions</li> <li>Patient load by Mental Health Disorders</li> <li>Readmission Rates for Mental Health inpatient admissions</li> </ul>	<ul style="list-style-type: none"> <li>Mental Health Human Resources</li> <li>Medication Availability and Stockouts</li> <li>Characteristics of Designated District Hospital 72-hour assessment areas</li> <li>Outpatient and Inpatient Mental Health Visits</li> <li>Mental Health Prevention and Promotion Campaigns</li> <li>Residential and Day Care facilities.</li> </ul>				
Respondents	Provincial Director(s) of Non-Communicable Disease, Director(s) of Mental Health and/or Mental Health Coordinators	Hospital Directors and Chief Executive Officers, Psychiatrists, Pharmacists, Operational Managers and Nursing Managers					District Health Service Coordinators and District Mental Health Coordinators
Organizational Level	Provincial Offices	RHs	THs	CHs	SPHs	OSHs	Health Districts (PHC facilities and DH)
National Target Sample Size	9	47	18	9	24	6	52
<b>Sample Sizes, by province</b>							
Eastern Cape	1	2			3		7
Free State	1	2			1		5
Gauteng	0	5	2	1	3	1	5
KwaZulu-Natal	1	6	2	1	5		10
Limpopo	1	3	2		3		5
Mpumalanga	1	3	2				3
North West	1	1	1		1		0
Northern Cape	1	2			2		5
Western Cape	1	1	1	2	4		2
National Sample Size	8	25	10	4	22	1	42
Response Rate	88.9%	53.2%	55.6%	44.4%	91.7%	16.7%	80.8%
PHC facilities = Health Posts, Mobile Clinics, Clinics, Community Day Centres, Community Health Centres; DH = District Hospital; RH = Regional Hospital; TH = Tertiary Hospital; CH = Central Hospital; SPH = Specialized Psychiatric Hospital; OSH = Other Specialized Hospital							



## Secondary Data Sources

Several secondary data sources were used in this study and are summarized in Table 2. The District Health Information System (DHIS) datafile supplied by the National Department of Health provided all mental health indicators, by facility (health posts, mobiles, clinics, community day centers, community health centers and all categories of hospitals) for the 2016/17 financial year. The Health Systems Trust (HST) District Health Barometer (12th Edition – 2016/17) datafile [12], provided: hospital-level indicators of expenditure per patient day equivalent (PDE) for all categories of hospitals, and; indicators of expenditure per PHC headcount for all health districts of South Africa for the 2015/16 financial year. Costs from the 2015/16 FY were converted to real 2016/17 prices using the Consumer Price Index of 6.8% obtained from Statistics South Africa [13]. The Department of Health Average Length of Stay datafile, supplied by the Parliamentary Monitoring Group, which presents the Average Length of Stay for each hospital in South Africa, organized by Province [14]. The Department of Health PERSAL database was obtained to estimate mental health staffing coverage.

*TABLE 2 Secondary Data Sources, Indicators and Definitions [5]*

Indicator Name	Source	Definition	Period
Mental health clients total	DHIS	Total outpatient visits for mental health conditions	April 2016-March 2017
Mental health clients 18 years and older	DHIS	Total outpatient visits for mental health conditions for clients 18 years and older	April 2016-March 2017
Mental health clients under 18 years	DHIS	Total outpatient visits for mental health conditions for clients under 18 years	April 2016-March 2017
Mental health admissions total	DHIS	Total number of clients admitted for mental health conditions (both voluntary and involuntary)	April 2016-March 2017
Expenditure per patient day equivalent	HST	A composite indicator which measures the average cost per patient day equivalent (PDE) calculated by dividing the total expenditure of a hospital by the number of PDEs. PDE is calculated by adding the number of inpatients, plus half the number of day patients, plus one third the number of outpatients and emergency room visits as recorded in the DHIS	April 2015-March 2016
PHC expenditure per headcount	HST	Provincial expenditure on: clinics, CHCs, community-based services and other community services, nutrition, HIV plus local government expenditure on PHC divided by PHC headcount from DHIS	April 2016-March 2017
Average Length of Stay (all patients)	NDOH	Average length of inpatient admission calculated in days for all patients, regardless of diagnosis.	2017
Posts filled by health worker	NDOH	PERSAL human resource database indicating total posts filled for all cadres of health workers organized by facility	2018
DHIS = District Health Information System, HST = Health Systems Trust, NDOH = National Department of Health			

# Data Management and Analysis

A linked Excel database was created for storing all data to allow for all items captured from Primary data collection and those obtained through secondary databases to be linked by Province, District, Sub-district and Facility Name. Where data obtained directly from facilities was available, these

were preferentially included. Where data was not available directly from facilities, or where facilities were unable to complete a particular component of the data collection tool, secondary data was extracted from the secondary sources outlined above.

## Cost Analysis Approach

### *Inpatient and Outpatient Cost Analysis*

In order to estimate mental health care inpatient and outpatient costs, Patient Day Equivalents (PDE) were applied to outpatient and inpatient data across all hospitals. Inpatient days were calculated by multiplying the number of voluntary and involuntary inpatient admissions (Primary data or DHIS) within the reporting period by the average length of stay (primary data or ALOS database provided by DOH) for mental health patients. Total inpatient expenditure was then calculated by multiplying inpatient days by the cost per PDE for each facility. Where the DHIS reported no ( $n=0$ ) inpatient admissions, and primary data collection reported inpatient admissions ( $n>0$ ), we relied on the estimates of inpatient admissions reported directly by the facility through primary data collection.

Given that a number of facilities across the country had not completed the primary data collection tool(s) at the time of this analysis, we did not have ALOS for mental health inpatient admissions for every facility. We first compared the ALOS for mental health admissions among the facilities that did provide this data directly, with the ALOS for all admissions for these facilities as outlined in the NDOH ALOS database [14]. We were therefore able to determine the average difference between ALOS for all inpatients and ALOS for mental health inpatients only. We found that for District, Regional, Tertiary, Central Hospitals and Specialized Hospitals, mental health inpatient admissions were 0.5, 4.7, 1.4, 4.5 and 0.22 times longer, respectively, when compared to the duration of inpatient admissions for all inpatient admissions. For Specialized Psychiatric Hospitals,

we found that the ALOS was on average 0.14 times lower than those reported in the Department of Health ALOS database (Table 3)

*TABLE 3 Difference between ALOS for All Admissions and ALOS supplied from sampled facilities through primary data collection, by service level*

<b>Facility Type</b>	<b>Average Difference between ALOS supplied by the Parliamentary Monitoring Group Department of Health Average Length of Stay datafile [14] and ALOS supplied from sampled facilities through primary data collection.</b>
<b>District Hospital</b>	<b>Mental health inpatient admissions are 0.5 times longer</b>
<b>Regional Hospital</b>	<b>Mental health inpatient admissions are 5.6 times longer</b>
<b>Provincial Tertiary Hospital</b>	<b>Mental health inpatient admissions are 8.4 times longer</b>
<b>National Central Hospital</b>	<b>Mental health inpatient admissions are 4.9 times longer</b>
<b>Specialized Psychiatric Hospital</b>	<b>Mental health inpatient admissions are 0.14 times shorter</b>
<b>Other Specialized Hospital</b>	<b>Mental health inpatient admissions are 0.22 times longer</b>

When Average Length of Stay (ALOS) for Inpatient Mental Health Admissions was not provided directly from facilities, ALOS for all patients included in the NDOH Average Length of Stay database were extracted and included. For all hospitals that did not provide ALOS for inpatient mental health admissions directly, we then ran a sensitivity analysis by adjusting the extracted ALOS based on the reported average difference for each service level, as outlined in Table 3.

Where total number of Mental Health admissions and/or outpatients were not provided directly from the facility, these data were extracted and included from the DHIS. Where facilities did directly provide these data, and the totals as reported by the DHIS were inconsistent, we used the higher estimate. Outpatient expenditure was calculated by applying

the number of outpatient visits within the reporting period, as reported in the DHIS or through primary data at the facility-level, by 1/3rd of the cost per PDE equivalent. Where the DHIS reported no outpatient visits, and facility-level primary data collection reported outpatient visits (n>0) we relied on the estimate provided by the facility directly.

The calculations performed to arrive at these costs are summarized in Box 1, including the data sources that were used. The results are presented by each category of facility, and by inpatient and outpatient costs. Age-disaggregated costs are provided for outpatient visits for adults (18 years and older) and children (under 18 years) where available.

### *Cost of Readmissions*

For the assessment of the cost of readmissions, each hospital was asked to indicate the number of inpatient mental health patients that were readmitted as mental health inpatients within three months of a previous discharge. Costs of readmissions were then determined on a proportional basis, i.e. the proportion of inpatient admissions that were readmissions were applied to

the total cost of inpatient admissions for each hospital to determine the total cost of readmissions. Where hospitals did not provide the total number of readmissions, we applied an average readmission rate for each hospital-level in each province based on those that had completed primary data collection.

### *NGO and Contracted Hospital Cost Analysis*

Although all PDOH were asked to outline detailed information regarding financial transfers made for contracted hospital and NGO mental health services within their provinces, including the name of facility, type of services rendered, number of inpatient and day patients, and the cost per patient day; none were able to comprehensively specify and validate the range of services and total financial transfers for these services. In lieu, we then requested PDOH to provide the overall total amount transferred for contracted hospital and NGO mental health services during the 2016/17

FY. For those that were able to provide this information, the absolute amount was used, and total mental health expenditure was therefore expressed both including and excluding contracted hospital and NGO services for both national and provincial levels.

### *Financial adjustments*

All PDE costs derived from the District Health Barometer were reported for the 2015/16 year. These were converted to real 2016/17 prices using

the Consumer Price Index of 6.8% obtained from Statistics South Africa [13], prior to analysis.

## INPATIENT COSTING

$$\text{TOTAL INPATIENT COST} = \text{EXPENDITURE PER PATIENT DAY EQUIVALENT}^a \times \text{TOTAL INPATIENT DAYS}^b$$

$$\text{TOTAL INPATIENT DAYS} = \text{INPATIENT ADMISSIONS}^c \times \text{AVERAGE LENGTH OF STAY}^d$$

a Cost per Patient Day Equivalent (PDE) was drawn from the District Health Barometer 2016/17 data file for each facility [1]. These estimates were provided up until the financial year ending 2015/16. We adjusted the 2015/16 estimates to real 2016/17 prices using the Consumer Price Index of 6.8% (STATS SA, 2017)

b Total Inpatient Days was calculated by multiplying Total Inpatient Mental Health Admissions between April 1 2016 and March 31 2017 by the Average Length of Stay for these inpatients between April 1 2016 and March 31 2017. It was assumed that the inpatient days of existing patients at the beginning of the year will balance out the inpatient days of patients admitted towards the end of the year who would be discharged in the following year.

c Inpatient admission data was drawn from primary data provided by facilities or from the DHIS using the indicator Mental health admissions total. If the DHIS and primary data collection responses differed, we used the higher reported figure.

d Average Length of Stay data was drawn from the primary data collection responses from each hospital. Hospitals reported the average inpatient length of stay (in days) across all mental health patients between April 1 2016 and March 31 2017. For facilities that were not able to specify an Average Length of Stay for Mental Health Inpatient Admissions, the Average Length of Stay for all admissions was used, and a sensitivity analysis was performed based on the average difference between Length of Stays for all admissions and mental health admissions, by level of service. When average length of stay exceeded one year, a maximum length of stay of 365 days was applied.

## OUTPATIENT (OPD) COSTING: HOSPITAL-LEVEL

$$\text{TOTAL OUTPATIENT COST} = \frac{\text{EXPENDITURE PER PATIENT DAY EQUIVALENT}^e}{\text{TOTAL OPD VISITS BY MENTAL HEALTH CLIENTS}} \times \text{TOTAL OPD VISITS BY MENTAL HEALTH CLIENTS}$$

## OUTPATIENT (OPD) COSTING: MOBILE, PRIMARY CARE CLINIC, COMMUNITY HEALTH & DAY CENTRE-LEVEL(S)

$$\text{TOTAL OUTPATIENT COST} = \text{EXPENDITURE PER PHC HEADCOUNT}^f \times \text{TOTAL OPD VISITS BY MENTAL HEALTH CLIENTS}$$

e Total Mental Health Clients was drawn from the DHIS for each Mobile, Primary Care Clinic, Community Health & Day Center facility using the indicator Mental health clients total. Entries for the period April 1 2016 to 31 March 2017 were summed for each facility.

f Expenditure per Headcount was drawn from the District Health Barometer 2016/17 Data file for each Primary Care Clinic, Community Health & Day Center [1]. We adjusted the the 2015/16 estimates to real 2016/17 prices using the Consumer Price Index of 6.8% (STATS SA, 2017)

# Analysis of Mental Health Human Resources, Medication Availability and Infrastructure

For the assessment of public sector mental health HR availability, we relied on the NDOH PERSAL database of staffing as at August 2018, for all cadres except for psychiatrists. The number of public sector psychiatrists were obtained from primary data collection, and due to incomplete facility inputs, may reflect an underestimate in the number of these posts. The total number of mental health HRs were divided by the uninsured population in each province for the 2016/17 FY and expressed as rates per 100,000 uninsured population. Given that the staffing data were for 2018, the estimates of uninsured populations for each province, obtained from the HST-DHB, was increased by a factor of 2% to account for population growth.

For the assessment of mental health medication stockouts and infrastructure, we relied entirely on direct facility reports. All medications outlined for the treatment of MNS disorders were extracted from the Standard Treatment Guidelines (STG) and Essential Medicines Lists (EML) for each service-level [15, 16]. Hospitals and PHC facilities were requested to indicate whether, in the past one year, any of the listed medications for their service-level were stocked-out or whether the medication was considered to be not-routinely-available (NRA).

Where stockouts were reported, hospital(s) and PHC facilities indicated the duration of each stockout. Due to the significant number of medications included in the instrument, the analysis of these data focused on summarizing the most frequently reported medications stocked at each level of care.

For the assessment of infrastructure, in line with the priorities outlined by collaborators at the NDOH, we focused our analysis on the degree to which designated district hospitals across the country have met the infrastructural criteria outlined by the MHCA (2002) and accompanying guidelines for the admission of mental health patients without consent for 72-hour observation [17, 18]. Whilst the guidelines include a vast number of infrastructural requirements including close circuit television monitoring and panic buttons for staff, we prioritized the following criteria: whether district hospitals had a designated inpatient psychiatric unit; whether mental health inpatients are kept together with non-mental health patients in a general ward; whether adolescent and adult mental health inpatients are kept together, and; whether male and female mental health inpatients are kept separate from one another. These criteria are



considered the most paramount for ensuring that the rights and dignity of users that cannot give consent and are posing a danger to themselves and others are protected. For each health district, contributors were asked to indicate which of their listed district hospitals were designated by the MHCA (2002) to admit mental health users for

involuntary admission. Amongst these, contributors were then asked to indicate which of the listed criteria had been met. Responses were then summarized by province.

## Ethical and Governmental Approval

This study made use of secondary data and collected routine health services data pertaining to mental health service delivery in South Africa from the Department of Health and its' staff. No direct access to any facilities was required. No data that was used or collected in this study contained any personal patient identifiers or was linked to any individual in anyway. Ethics approval for this study was sought from the University of Cape Town Human Research Ethics Committee (HREC 744-2017). This study has also received approvals from the Provincial Health Research Committees in each

Province through the National Health Research Database. Where hospitals required their own ethics application to be made, SD and DB ensured that these were completed and approved prior to receiving the completed instruments.

Furthermore, Provincial Heads of Health provided written permission and support for this study prior to its initiation. Copies of all approval letters relating to this study can be provided on request. The reference numbers for all Provincial National Health Research Database submissions are provided in Table 4 (**Error! Reference source not found.**).

*Table 4 Provincial Health Research Committee Approval Reference Numbers, by Province*

Province	Provincial Health Research Committee Reference Number
Eastern Cape	EC_201804_004
Free State	FS_201804_003
Gauteng	GP_201804_013
KwaZulu-Natal	KZ_201804_009
Limpopo	LP_201804_004
Mpumalanga	MP_201804_003
North West	NW_201804_001
Northern Cape	NC_201804_001
Western Cape	WC_201804_012

## Assumptions & Limitations

Certain limitations to the analysis and assumptions need to be highlighted. Firstly, most facilities that contributed to this study were unable to report a diagnostic disaggregation of inpatient and outpatient caseloads and could not provide the average length of inpatient admissions for mental health patients, readmission rates and referral pathways post-discharge without extensive reviews of their patient records over a one-year period. Secondly, an average cost per PDE for each hospital was applied to estimate total inpatient costs. The average cost per PDE within district, regional and tertiary facilities for mental health clients is likely to be lower in practice, when compared to the diverse care needs of patients presenting with physical health complaints for inpatient treatment. Therefore, reported costs for inpatient care using average costs per PDE are likely to be higher than true estimates. This is confirmed when comparing the costs per PDE for specialized psychiatric sites, which are on average lower than the other hospital levels.

Thirdly, tracking health personnel is instrumental in the delivery of mental health services in the country and critical in order to determine access to care and address shortages; yet the current staffing database of the DOH could not identify specific cadres of specialists or specialist nurses, making

estimates of the availability of psychiatrists limited to those facilities and districts that completed primary data collection and estimates of the availability of specialist nurses with advanced psychiatric training indistinguishable from those with other advanced training in other areas.

Fourthly, although this study described the availability of psychotropic medications, data reporting on drug stock outs were not representative of all hospitals and PHC sites across the country, however serve to identify limited availability of particular drugs and conditions for which they are used and to highlight that a range of drugs are reported to not be routinely available across sites despite their inclusion in the essential drug lists. There was discordance between the information received from direct facility input, which reported a significant number of stock-outs, and stock-out reports generated by the NDOH. For this reason, little remains known about the underlying reasons for these stock-outs, and further interrogation is required. In addition, the NDOH must ensure that the centralized monitoring of psychotropic medications is improved to ensure it reflects the realities being faced by facilities on the ground.

Despite attempts to cost expenditure on contracted hospitals and NGOs, not all provinces were able to



provide expenditure this data. Upcoming research will include the mapping out of residential and day care facilities, understanding population needs and existing resourcing for this level of service delivery; this has been identified as a priority for the South African government. We have also characterized the total costs of contracted services for mental health care, however very few Provinces were able to provide the full budget allocated for these services. In order to standardize our provincial comparisons, we have excluded the costs of contracted services from the total inpatient and outpatient cost calculations and have rather reported them separately.

The study did also attempt to collect data on the training of health personnel, a key strategy to strengthen primary care in terms of skills and competencies, however a large number of facilities were not able to report accurately or

comprehensively on training received by their personnel. Furthermore, data on referrals and the continuity of care for mental health users was not comprehensively available from reporting facilities to understand access to specialist services. The estimates contained herein are based on the quality of the data recorded within the DHIS as well as the data provided directly from facilities. This study therefore does not include costs related to mental health care provided to patients who were not captured as a mental health inpatient or outpatient. This is particularly pertinent when considering that many patients accessing care for mental health issues will often present with physical symptoms such as back pain, or weakness. Most of the costs contained in this report would therefore relate to services for mental health care users during advanced stages of their illness, when symptoms are severe.

---

## RESULTS

---

*The results are presented initially for the national level, providing inter-provincial comparisons across the health system costs of inpatient and outpatient mental health care and transfers to contracted hospitals and NGOs for mental health care. National-level and inter-provincial results related to mental health human resources, medication availability and infrastructure are also provided. Following this section, province specific results, including facility-level data tables are reported.*

### Health System Costs of Mental Health Services and Programmes

#### *Provincial and National Health System Costs of Mental Health Services and Programmes*

This study found that the total costs of inpatient and outpatient mental health services and known transfers for contracted hospital and NGO mental health services across all Provinces in South Africa

amounted to 8.37 billion rand in the 2016/17 financial year (Table 5). At the National level, this represented 5.0% of the total health budget (2016/17) and equated to a national average of R180.9 per capita uninsured. It must be noted however that not all Provinces were able to comprehensively specify the range of services and total budgets available for DOH contracted hospital and NGO services for mental health, therefore only those that were known were included.

FIGURE 1 National and provincial mental health expenditure per capita (uninsured) including and excluding known transfers for Contracted hospital and NGO mental health services

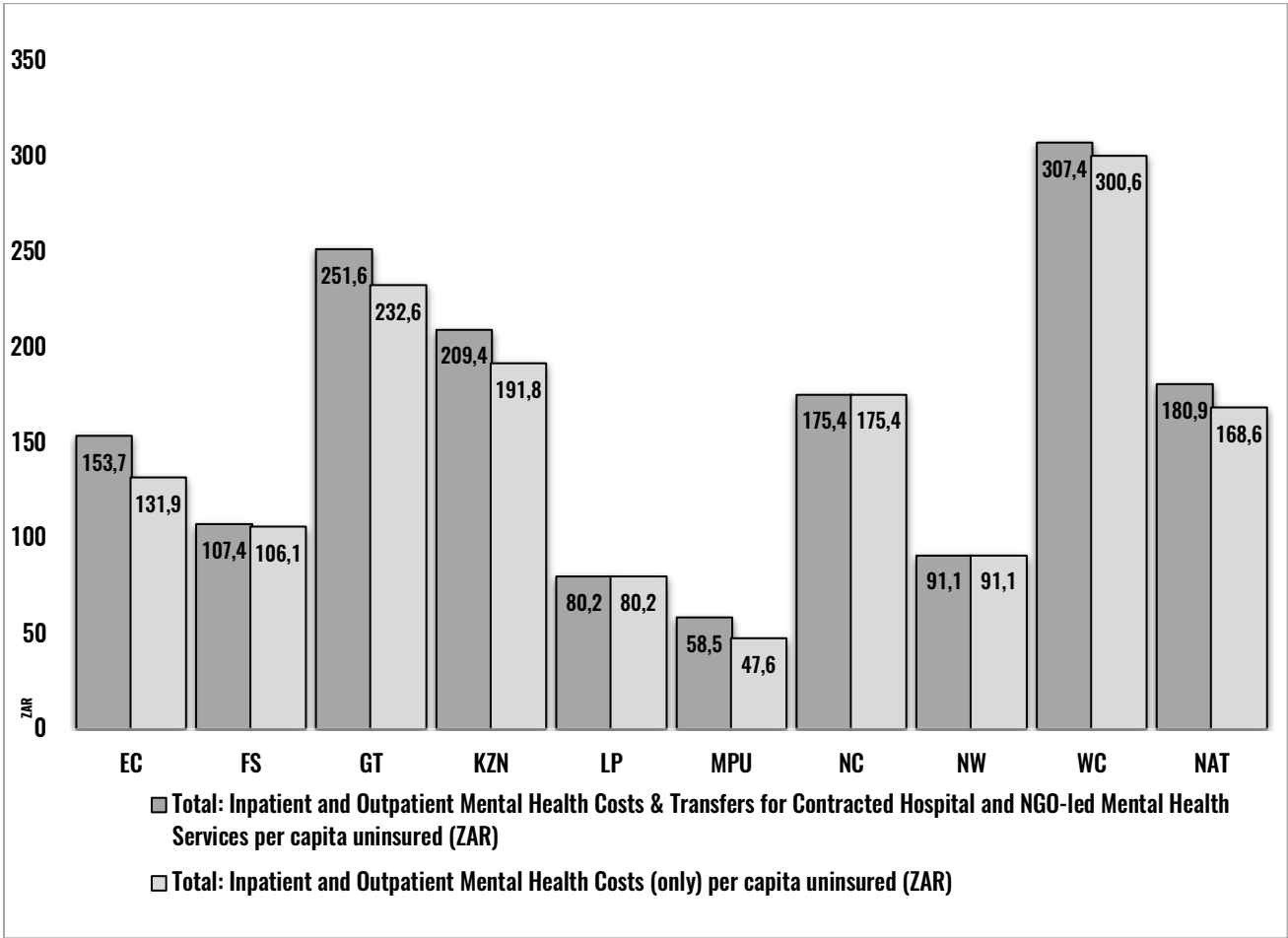


Table 5 Provincial and National Summary of Total Health System Costs of Mental Health Services and Programmes (2016/17 FY) [5]

	EC	FS	GT	KZN	LP	MPU	NC	NW	WC	NAT
<b>Inpatient and Outpatient Mental Health Costs</b>										
Inpatient Cost	690.9	223.0	2,079.4	1,506.9	296.5	136.0	145.5	255.7	1,360.0	6,692.6
Outpatient Cost	115.6	29.9	255.7	323.7	126.5	42.2	31.3	40.8	142.8	1,108.4
Total Inpatient and Outpatient Cost	806.5	253.0	2,333.8	1,831.9	423.0	178.2	176.8	296.5	1,504.2	7,801.0
Total Inpatient and Outpatient Mental Health Expenditure per Capita (Uninsured)	131.9	106.1	232.6	191.8	80.2	47.6	175.4	91.1	300.6	168.6
Proportion of 2016/17 Health Budget spent on Mental Health Inpatient and Outpatient Services (%)	4.0%	2.8%	6.2%	5.0%	2.6%	1.7%	3.9%	3.1%	7.5%	4.6%
<b>Transfers for Contracted Hospital and NGO-led Mental Health Services</b>										
Total Transfers for Contracted Hospital Services for Mental Health (ZAR,millions)	121.0			153.7		42.2				316.9
Total DOH Transfers to Mental Health NGOs (ZAR,millions)	10.9	2.7	186.3	13.6					36.7	250.2
<b>Total: Inpatient and Outpatient Mental Health Costs &amp; Transfers for Contracted Hospital and NGO-led Mental Health Services</b>										
Total Costs of Inpatient and Outpatient Mental Health Care and Transfers to Contracted Hospitals and NGOs for (ZAR,millions)	938.4	254.3	2,520.1	1,999.2	423.0	219.0	176.8	296.5	1,540.9	8,368.1
Total Costs of Inpatient and Outpatient and Transfers to Contracted Hospitals and NGOs for per capita uninsured (ZAR)	153.7	107.4	251.6	209.4	80.2	58.5	175.4	91.1	307.4	180.9
Proportion of 2016/17 Health Budget spent on Mental Health Inpatient and Outpatient Services and Transfers to Contracted Hospitals and NGOs (%)	4.6%	2.8%	6.7%	5.5%	2.6%	2.1%	3.9%	3.1%	7.7%	5.0%

EC = Eastern Cape, FS = Free State, GT = Gauteng, KZN = Kwa-Zulu Natal, LP = Limpopo, MP = Mpumalanga, NC = Northern Cape, NW = North West, WC = Western Cape, NAT=National

\* province was not able to comprehensively specify the total transfers for DOH contracted hospital and/or NGO services for mental health.

NB: At the time this report was prepared, no provincial departments of health were able to validate that the reported total transfers to contracted hospitals and NGOs represented *all* transfers to contracted hospitals and NGOs for in their respective provinces for the 2016/17 financial year.

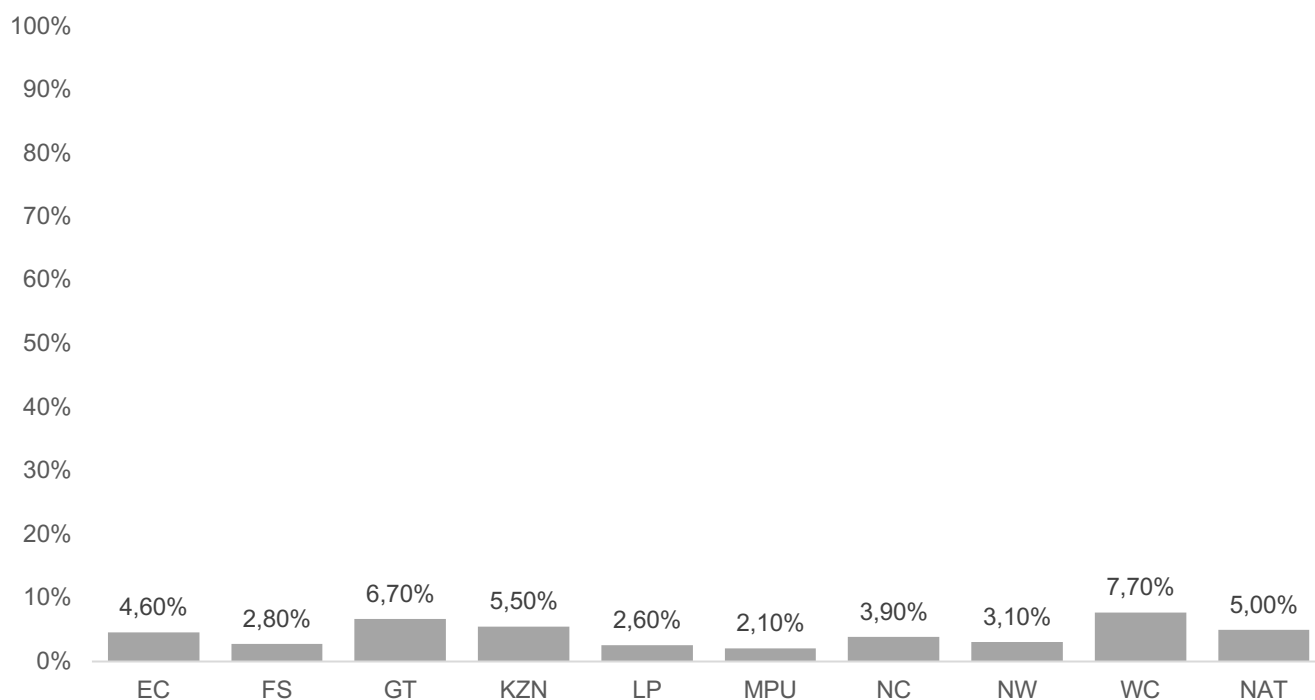
## Per capita mental health spending

Per capita mental health expenditure (uninsured) ranged from R58.5 in Mpumalanga to R307.4 in the Western Cape (Figure 1). Both the North West and Limpopo spent less than R100 per capita (uninsured) on mental health care in the 2016/17 financial year, R91.1 and R80.2 per capita uninsured, respectively. After the Western Cape, Gauteng and KwaZulu-Natal were the highest spending provinces, spending R251.6 and R209.4 per capita (uninsured), respectively.

## Proportion of Provincial and National health budgets spent on Mental health

The Western Cape spent the highest proportion of their overall health budget on mental health (7.7%), followed by Gauteng (6.7%) and KwaZulu-Natal (5.5%) (Figure 2). Mpumalanga, Limpopo and the Free State all spent less than 3% of their health budgets on mental health care (2.1%, 2.6% and 2.8%, respectively).

**FIGURE 2** Proportion of 2016/17 Health Budget spent on Mental Health Inpatient and Outpatient Services and Transfers to Contracted Hospitals and NGOs (%)

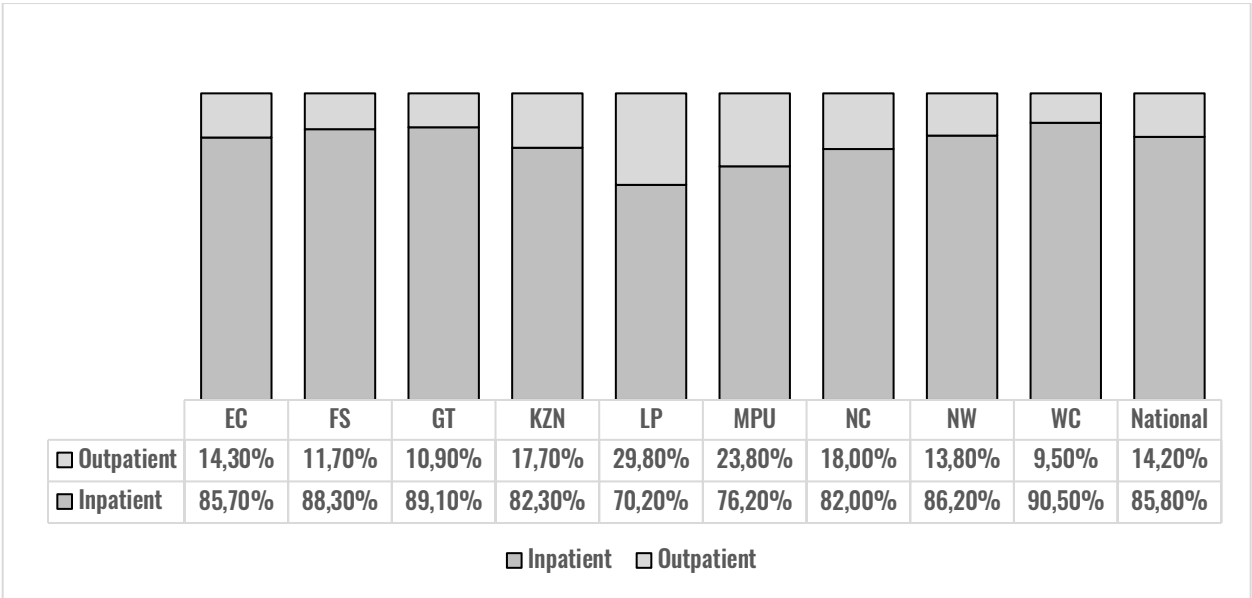


# Inpatient and Outpatient Mental Health Costs

Proportion of Inpatient and Outpatient Costs of Mental Health Services, by Province

Of the total, the vast majority of mental health expenditure was spent on inpatient and outpatient mental health services (7.80 billion rand). Approximately 86% of these costs were attributed to inpatient services, while the remaining 14% were attributed to outpatient care (Figure 3). Limpopo and Mpumalanga spent the largest share on outpatient mental health care, 29.8% and 23.8%, respectively .

FIGURE 3 Proportion of Inpatient and Outpatient Costs of Mental Health Services (excl. Contracted Hospital and NGO services), by Province



Proportion of Mental Health Service Inpatient and Outpatient costs, by Service Level

National-level estimates show that care at the Specialized Psychiatric hospital-level made up the large majority of the total inpatient and outpatient cost, amounting to 45% of the total; with Primary-level mental health care services accounting for 7.9%, District hospital mental health care services accounting for 11.7%, Regional hospital mental health services accounting for 13.9% and Tertiary and Central hospitals accounting for 8.5% and 7.5%, respectively (Figure 4). Across all Provinces, Primary Mental Health Care services (excluding those provided by NGOs)

represented between 5.1% (Western Cape and North West) and 12.6% (Northern Cape) of overall mental health expenditure on inpatient and outpatient care (Figure 5). There is wide variation

among the provinces of South Africa with respect to how mental health expenditure is distributed by service level (for detailed data, please refer to the province specific findings)

*FIGURE 4 Proportion of Mental Health Service Inpatient and Outpatient costs, by Service Level/*

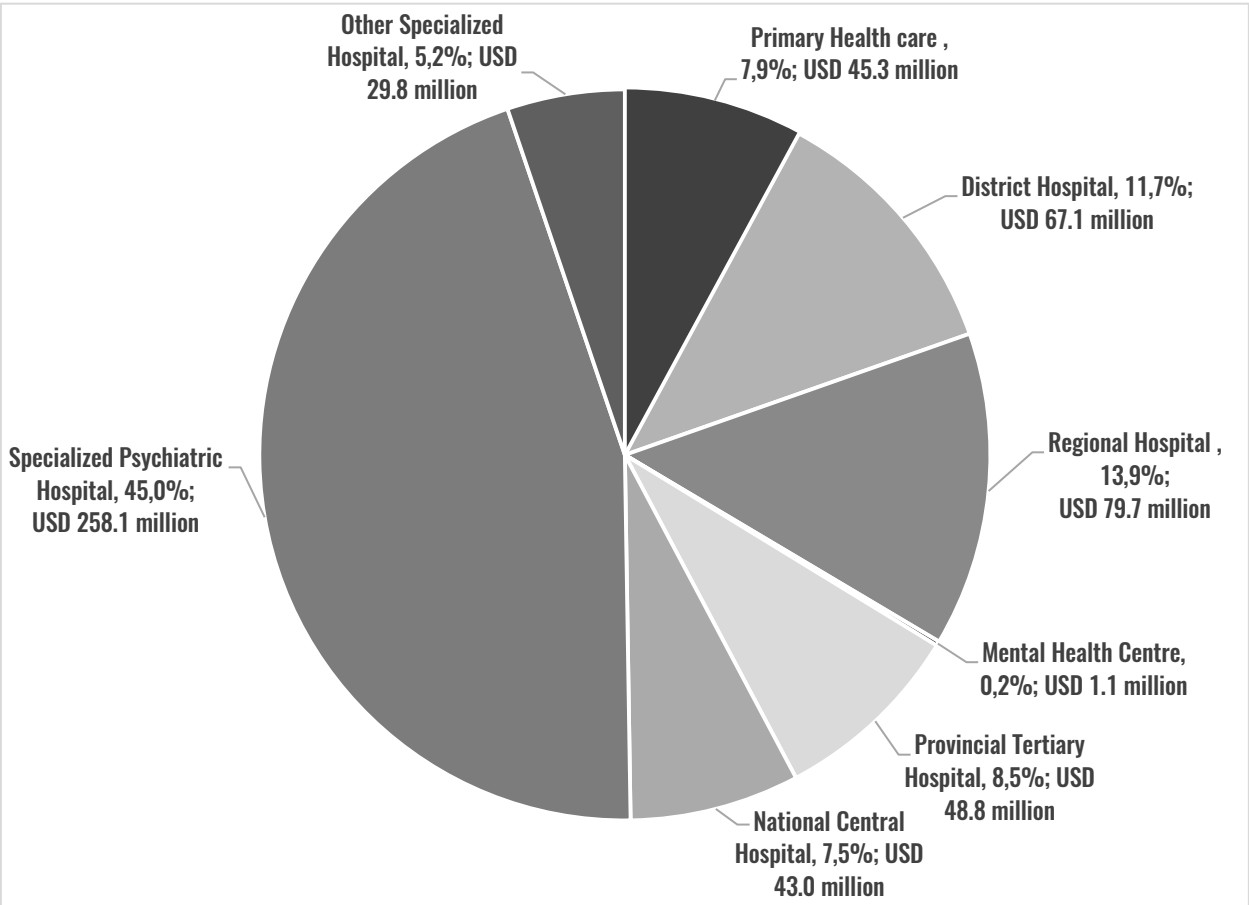
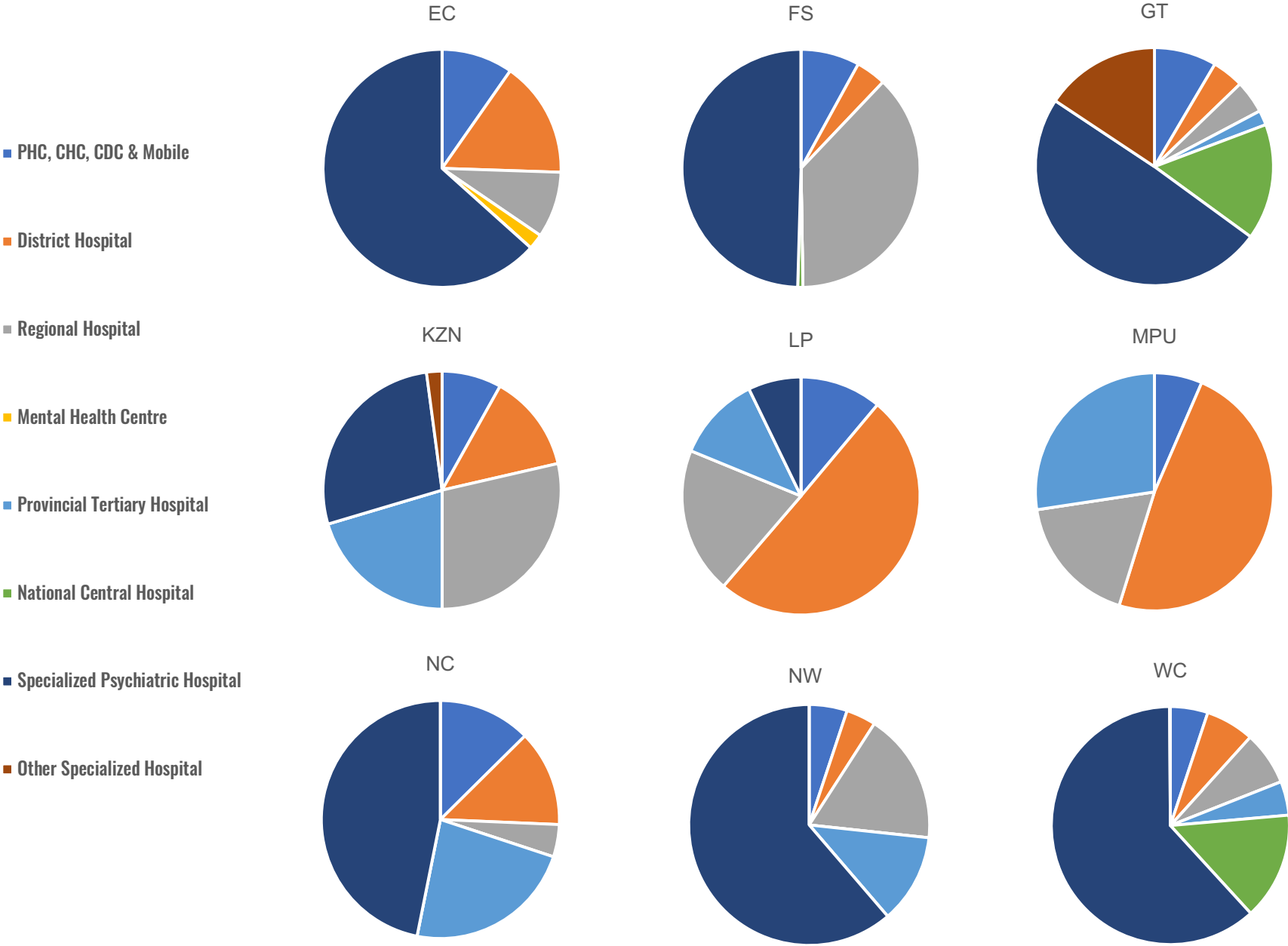


FIGURE 5 Proportion of Mental Health Service Inpatient and Outpatient costs, by Service Level and Province

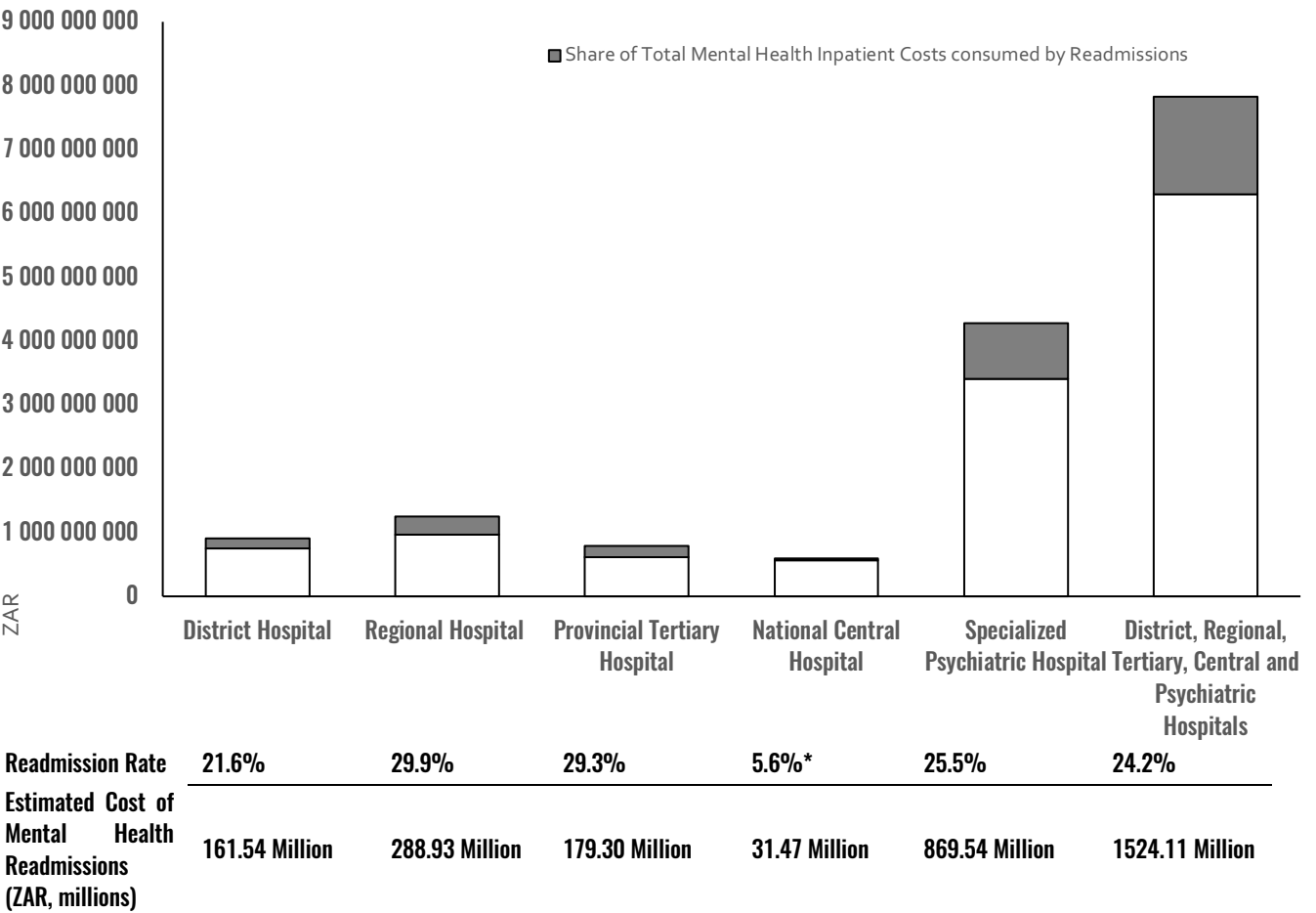




# Mental Health Readmission Rates and Costs

Based on national average readmission rates obtained directly from facilities, across all hospital-levels, the average overall readmission rate within three months from previous discharge for MHIA was 24.2% (Figure 6). The service-level readmission rates for MHIA at district, regional, tertiary, central and specialized psychiatric hospitals were: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for each service-level, readmissions during the 2016/17 FY are estimated to have cost approximately ZAR 161.5 million at the district hospital-level, ZAR 288.93 million at the regional hospital-level, ZAR 179.30 million at the tertiary hospital-level, ZAR 31.47 million at the central hospital-level and ZAR 869.54 million at the specialized psychiatric hospital-level. Using an average readmission rate for all service-levels, in total, readmissions cost the South African health system ZAR 1,524.11 million, or 18.2% of the total mental health expenditure in the 2016/17 FY.

FIGURE 6 Readmission Rates and Estimated Costs of Mental Health Readmissions for District, Regional, Tertiary, Central and Psychiatric Hospitals

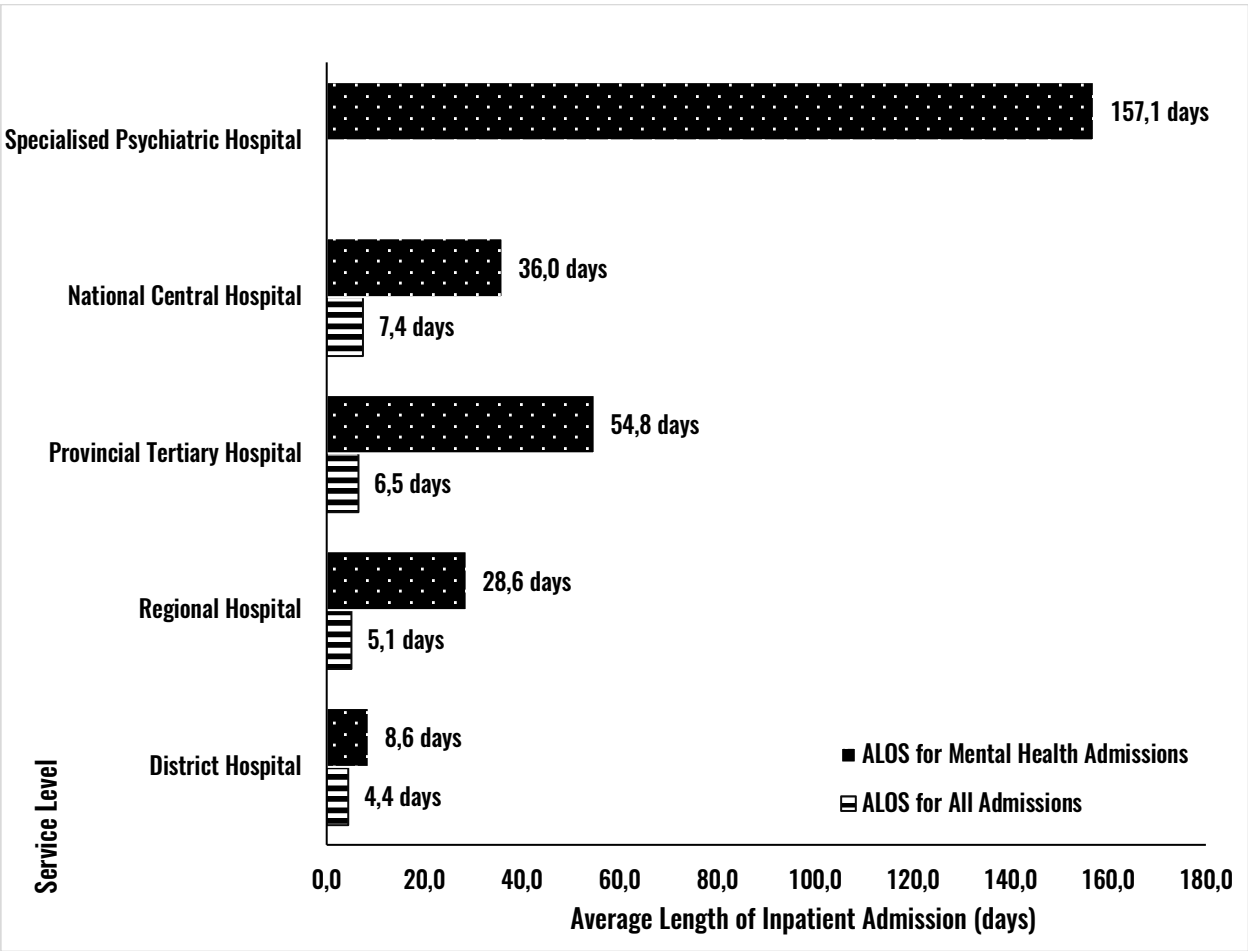


*Duration of Mental Health Inpatient Admissions*

Across all hospital-levels, MHIA were found to be substantially longer when compared to the ALOS for all admissions (Figure 7). At the district hospital-level, MHCUs admitted for inpatient care spent twice as long in hospital in comparison to all patients. At the regional and tertiary hospital-level(s), MHIA lasted nearly 6 and 8 times longer,

respectively, when compared to inpatient admissions for all health conditions. At the central hospital-level, mental health patients admitted for inpatient care spent almost 5 times longer in hospital. While all patients admitted at the specialized psychiatric hospital-level were considered MHIA, the ALOS at this level of care was 157.1 days.

*FIGURE 7 Average Length of Inpatient Stay (ALOS) for All Admissions vs Mental Health Admissions, by Service-level*



## Disorder-specific Average Length of Inpatient Admission

Average length of inpatient mental health stay, including minimum and maximum reported days across all Provinces are summarized in the tables below for both adults (Table 6) and children (Table 7). As outlined in the limitations section above, the majority of participating facilities were unable to report a diagnostic disaggregation of length of admission as this information is not routinely available. Those that did provide this information spent a large amount of time reviewing patient records over a one-year period. We have attempted to summarize the best available estimates for all participating facilities, by service level. When no range is provided, only one reporting facility provided an average length of stay. Furthermore, for each condition, not all levels of care were able to provide an average length of stay.

### *Adults: Disorder-Specific Average Length of Stay*

The Average length of stay for Mood disorders was 436 days at the Regional hospital level and 283 days at Specialized hospital level, with facilities reporting an ALOS as low as 37 days to as high as 529 days at this level of care (Table 6). The Average length of stay for Major Depressive Disorders was 5 days at the Regional hospital level but increased to 40 days at the Tertiary level and up to 63 days at the Specialized hospital level. The same trend was seen

for Bipolar Disorder with Regional hospitals reporting an ALOS of 7 days and Specialized hospitals reporting an ALOS of 141 days. Regional hospitals reported an average ALOS of 44 days for Schizophrenia which increased to 171 days at the Specialized hospital level. Generally, all Substance Use Disorders did not include an Average Length of stay exceeding 40 days, the longer stays only being reported at the Specialized hospital level. For Alzheimer's Disease, regional and tertiary hospitals reported an average length of stay of 8 and 5 days respectively, with a significantly higher average ALOS of 56 days at Specialized hospital level. While for Epilepsy, average ALOS was similarly low at Regional and Tertiary hospital levels but increased to 137 days at the specialized level. Only one hospital reported an ALOS for eating disorders at the Specialized level, which included 166 days for Anorexia and 98 days for Bulimia. A 4-day ALOS was only reported at the Regional level for Autism and Asperger's syndrome. ALOS was also low for conduct disorder, at 5 days, but significantly higher for Intellectual Disabilities and ADHD, particularly at Specialized hospital level (158 and 91 days, respectively), although ALOS for intellectual disabilities was also high at the Regional level (121 days).

TABLE 6 Average Length of Inpatient Stay for Adults by Disorder and Service-level among contributing facilities

Disorder	Level of care	Average Length of Stay (days)	Range
All Mood Disorders	Regional	436	
	Specialized	283	(37-529)
Major Depressive Disorder	Regional	5	(3-11)
	Tertiary	40	5-74)
	Specialized	63	(22-114)
Bipolar Disorder	Regional	7	(3-15)
	Tertiary	40	(5-74)
	Specialized	141	(21-529)
Anxiety Disorder	Regional	4	(2-7)
	Specialized	66	(19-121)
Schizophrenia	Regional	44	(5-220)
	Tertiary	40	(5-40)
	Specialized	171	(30-529)
All Substance Use Disorders	Specialized	20	(4-37)
Alcohol-use Disorder	Regional	6	(3-12)
	Tertiary	40	(5-74)
	Specialized	39	(25-73)
Opioid-use Disorder	Regional	7	(5-8)
	Tertiary	5	
	Specialized	30	(17-42)
Cocaine-use Disorder	Regional	3	
	Tertiary	5	
	Specialized	28	(4-42)
Amphetamine use disorder	Regional	3	
	Tertiary	5	
	Specialized	42	(20-57)
Cannabis use disorder	Regional	43	(3-220)
	Tertiary	40	(5-74)
	Specialized	40	(28-52)
Alzheimer's disease and other dementias	Regional	8	(3-16)
	Tertiary	5	
	Specialized	56	(4-165)
Epilepsy	Regional	6	(3-13)
	Tertiary	5	
	Specialized	137	(22-362)
Anorexia nervosa	Specialized	166	
Bulimia Nervosa	Specialized	98	
Autism	Regional	4	
Asperger syndrome	Regional	4	
All Behavioral Disorders	Specialized	37	
Attention-deficit/hyperactivity disorder	Regional	4	(3-4)
	Tertiary	5	
	Specialized	91	(15-224)
Conduct disorder	Regional	5	
	Tertiary	5	
Intellectual Disabilities	Regional	112	(5-220)
	Tertiary	6	(3-11)

	<b>Central</b>	<b>74</b>	
	<b>Specialized</b>	<b>158</b>	<b>(43-357)</b>
<b>Forensic patients</b>	<b>Specialized</b>	<b>22</b>	

#### *Children: Disorder-Specific Average Length of Stay*

Average length of stay was comparatively lower for children than adults. Furthermore, only four provinces, including Gauteng, the Western Cape, Limpopo, and the North West were able to report on ALOS for children (Table 7). On average, all Specialized hospitals reported longer ALOS than Regional hospitals. The average ALOS for Major depressive disorder was 8 days at the Regional level and 29 days at the Specialized level. A similar trend was seen for: Bipolar disorder, with an average ALOS of 9 days at Regional level and 33 days at

Specialized level; Anxiety disorder, with an ALOS of 3 days at Regional level and 19 days at Specialized level; Schizophrenia with an ALOS of 7 days at the Regional level and 28 days at Specialized level; Epilepsy with an ALOS of 3 days at the Regional level and 90 days at Specialized level; Autism, with an ALOS of 3 days at the Regional level and 53 days at Specialized level; ADD (3 days at the regional level and 24 days at the Specialized level); and Intellectual Disabilities (5 days at the Regional level and 72 days at the Specialized level).

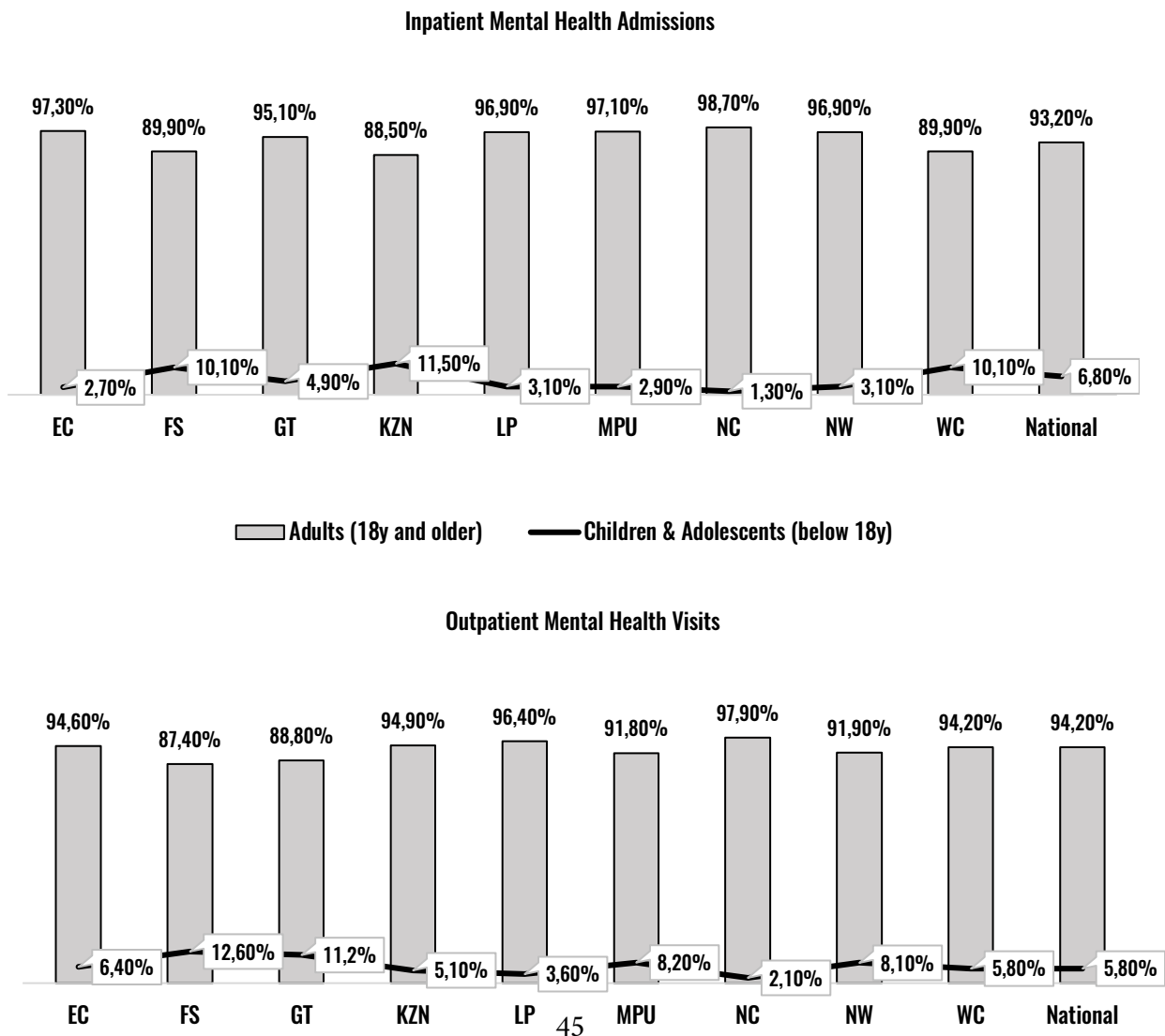
*TABLE 7 Average Length of Inpatient Stay for Children by Disorder and Service-level among contributing facilities*

<b>Disorder</b>	<b>Level of Care</b>	<b>Average Length of Stay (Days)</b>	<b>Range</b>
<b>Major Depressive Disorder</b>	<b>Regional</b>	<b>8</b>	<b>(3-13)</b>
	<b>Specialized</b>	<b>29</b>	<b>(22-44)</b>
<b>Bipolar Disorder</b>	<b>Regional</b>	<b>9</b>	<b>(3-15)</b>
	<b>Specialized</b>	<b>33</b>	<b>(16-63)</b>
<b>Anxiety Disorder</b>	<b>Regional</b>	<b>3</b>	
	<b>Specialized</b>	<b>19</b>	<b>(14-22)</b>
<b>Schizophrenia</b>	<b>Regional</b>	<b>7</b>	<b>(3-10)</b>
	<b>Specialized</b>	<b>28</b>	<b>(10-47)</b>
<b>Epilepsy</b>	<b>Regional</b>	<b>3</b>	<b>(2-5)</b>
	<b>Specialized</b>	<b>90</b>	
<b>Autism</b>	<b>Regional</b>	<b>3</b>	
	<b>Specialized</b>	<b>53</b>	<b>(40-65)</b>
<b>Asperger syndrome</b>	<b>Specialized</b>	<b>21</b>	
<b>Attention-deficit/hyperactivity disorder</b>	<b>Regional</b>	<b>3</b>	
	<b>Specialized</b>	<b>22</b>	<b>(15-29)</b>
<b>Conduct disorder</b>	<b>Regional</b>	<b>5</b>	<b>(3-7)</b>
	<b>Specialized</b>	<b>24</b>	<b>(21-27)</b>
<b>Intellectual Disabilities</b>	<b>Regional</b>	<b>5</b>	<b>(3-7)</b>
	<b>Specialized</b>	<b>72</b>	<b>(17-176)</b>

# Mental Health care Utilization among Adults, Adolescents and Children

Collectively, 93.2% of MHIA in South Africa were for adults aged 18 and older, with only 6.8% of MHIA being recorded for those below 18 years (Figure 8). This trend was consistent across all provinces, with the highest rates of MHIA for children and adolescents recorded in KwaZulu-Natal at 11.5%. Similarly, the proportion of adults aged 18 years and older receiving outpatient mental health care in the country represented 94.2% of all MHOV, compared to only 5.8% for those under 18 years. In the Free State, MHOVs for children and adolescents aged below 18 years accounted for 12.6% of all MHOVs, compared to only 2.1% in the Northern Cape.

Figure 8 Mental Health Inpatient Admissions and Outpatient Visits for Adults, Adolescents and Children, by province, April 2016 – March 2017



# Mental Health Human Resources

At the national level, this study found that there is on average 0.31 public sector psychiatrists per 100,000 uninsured population; with the Western Cape reporting the highest availability of psychiatrists at 0.89 per 100,000 uninsured population and Mpumalanga reporting the lowest rate, at 0.08 psychiatrists per 100,000 uninsured (Table 8). There remains a critical shortage of child psychiatrists with only three of the nine provinces of South Africa, namely the Western Cape, Free State and Gauteng, reporting any child psychiatrists working in the public sector. There were 0.97 public sector psychologists, senior clinical psychologists and principal psychologists per 100,000 uninsured population.

The availability of auxiliary health workers, critical for rehabilitative care and support services for MHCUs, was also found to be scarce with estimates of 1.53 public sector occupational therapists; 1.07

public sector speech therapists and audiologists, and 1.83 social workers per 100,000 uninsured population. The study also reported good coverage of nurses with 80 per 100,000 professional and 27.2 specialist nurses. These however may not all be psychiatric nurses.

Tracking health personnel is instrumental in the delivery of mental health services in the country and critical in order to determine access to care and address shortages; yet the current staffing database of the DOH could not identify specific cadres of specialists or specialist nurses, making estimates of the availability of psychiatrists limited to those facilities and districts that completed primary data collection and estimates of the availability of specialist nurses with advanced psychiatric training indistinguishable from those with other advanced training in other areas [5].

*TABLE 8 Mental Health Human Resources per 100,000 uninsured population, by province*

	EC	FS	GT	KZN	LP	MP	NC	NW	WC	National
<b>Psychiatrist*</b>	0.10	0.59	0.51	0.12	0.15	0.08	0.40	0.12	0.89	0.31
<b>Sessional Psychiatrist*</b>	0.02	0.00	0.00	0.06	0.00	0.00	0.00	0.03	0.00	0.02
<b>Psychiatry Registrar*</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.01
<b>Child Psychiatrist*</b>	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.08	0.02
<b>Child Psychiatry Registrar*</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
<b>Psychologists<sup>†</sup></b>	0.87	0	1.38	0.61	1.22	0.7	3.28	0.46	1.22	0.97
<b>Psychologist (Community Service)</b>	0.2	0.42	0.58	0.17	0.09	0	0.5	0	0.3	0.26
<b>Psychologist Intern</b>	0.02	0.17	0.39	0.09	0.11	0.05	0.6	0	0.16	0.16

Medical Officers	18.91	15.73	17.97	20.98	16.01	14.8	24.76	15.35	19.93	18.3
Medical Officer (Community Service)	2.07	2.73	2.38	2.16	2.82	4.08	7.06	5.15	4.07	2.98
Medical Officer (Intern)	5.44	7.32	8.99	7.79	3.99	3.71	6.36	6.77	6.52	6.71
Occupational Therapist (Grade 1 - 3)	1.38	0	1.62	0.79	2.5	1.45	3.68	0.98	2.61	1.53
Occupational Therapist (Community Service)	0.57	0.76	0.86	0.53	0.24	0.67	1.59	0.67	0.3	0.61
Speech Therapists and Audiologists (Grade 1-3)	0.67	0	1.69	0.75	1.35	1.61	2.09	0.64	0.76	1.07
Social Worker	1.9	0	2.44	2.07	0.64	1.26	2.98	1.41	2.65	1.83
Professional Nurse	117.9	0	74.82	81.74	97.97	87.8	78.45	78.56	55.23	80
Professional Nurse Specialty	26.27	0	27.58	37.49	31.82	22.57	16.9	17.71	27.89	27.23
Professional Nurse (Community Service)	10.21	9	7.19	7.31	1.66	5.91	10.64	13.36	7.16	7.47

EC = Eastern Cape, FS = Free State, GT = Gauteng, KZN = Kwa-Zulu Natal, LP = Limpopo, MP = Mpumalanga, NC = Northern Cape, NW = North West, WC = Western Cape

\* No data was available through the National Department of Health PERSAL database regarding total number of psychiatrists working in the public sector. These estimates are therefore based on responses received through primary data collection only and may be underestimated.

<sup>ψ</sup> The PERSAL database does not differentiate between Clinical Psychologists and other Psychologists. These figures therefore include the total number of Psychologists (Grade 1,2 and 3), Senior Clinical Psychologists and Principal Psychologists (Grade 1,2 and 3). It is assumed that a Masters degree in Clinical Psychology and registration with the Health Professions Council of South Africa is a requirement for these posts.

## District Hospital Infrastructure for Mental Health

Despite the majority of district hospitals being designated by the MHCA (2002) for the provision of 72-hour assessments; this study found that there are specific characteristics outlined by the MHCA (2002) that are not met across a large number of these hospitals (Table 9) [17]. Although the North West and Western Cape provinces did not submit complete data regarding district hospital infrastructure, among the remaining provinces, over 62% of district hospitals indicated that adult mental health inpatients are kept in general wards with other patients, contrary to guidelines within the MHCA. The exception to this is in the Free State, which indicated that all its hospitals keep their mental health patients separately. KwaZulu-Natal, Limpopo, Mpumalanga and the Northern Cape indicated that over 80% of their district hospitals keep their mental health patients together with other patients. Furthermore, an extremely low proportion of district hospitals keep their adult and adolescent patients separately (13%), however, close to 80% of all district hospitals sampled separate female and male mental health inpatients.



TABLE 9 District Hospital Infrastructure for Mental Health Inpatients

Dimensions of District Hospital Infrastructure	EC	FS	GT	KZN	LP	MP	NC	National
Proportion of District Hospitals included in the sample (%)	69%	100%	80%	91%	84%	100%	100%	84%
Proportion of sampled District Hospitals designated for 72-hour Assessments by the Mental Health Care Act (2002) (%)	62%	100%	88%	81%	96%	87%	82%	84%
Proportion of sampled District Hospitals with Inpatient Psychiatric Unit (%)	14%	24%	50%	25%	19%	4%	0%	18%
Proportion of sampled District Hospitals reporting that Mental Health Inpatients are kept together with non-mental health patients in a general ward (%)	51%	0%	63%	81%	78%	96%	82%	62%
Proportion of sampled District Hospitals reporting that Adult Mental Health Inpatients are kept separate from Adolescent Mental Health Inpatients (%)	8%	0%	25%	3%	0%	30%	64%	13%
Proportion of sampled District Hospitals reporting that Male Mental Health Inpatients are kept separate from Female Mental Health Inpatients (%)	70%	100%	75%	63%	96%	87%	36%	78%
EC = Eastern Cape, FS = Free State, GT = Gauteng, KZN = Kwa-Zulu Natal, LP = Limpopo, MP = Mpumalanga, NC = Northern Cape NB: The North West and Western Cape province(s) were unable to provide complete data regarding district hospital infrastructure for mental health inpatients and have therefore been excluded.								

## Mental Health Medication Availability

With respect to mental health medication availability, the South African Adult and Paediatric Standard Treatment Guidelines (STGs) and Essential Medicines List (EML) were reviewed to obtain a list of all drugs specified to be available at the PHC and Hospital-levels [19, 20]. Table 10 provides a list of these drugs as well as the MNS Disorders for which their use is outlined in the STG and EML for South Africa.

TABLE 10 Essential Medicines for the treatment of Adult and Pediatric MNS Disorders at Primary Care-level(s) and Hospital care level(s) in South Africa [16, 17]

Drug Name	Mental, Neurological or Substance-use Disorder treated
Acetylcysteine	Paracetamol-Poisoning
Adrenaline (epinephrine)	Cardiac Arrest
Amitriptyline	Adult Depression and Dysthymia
Atropine	Organophosphate and Carbamate Poisoning
Biperiden	Adult Psychosis
Carbamazepine	Adult Epilepsy; Adult Bi-Polar Disorder

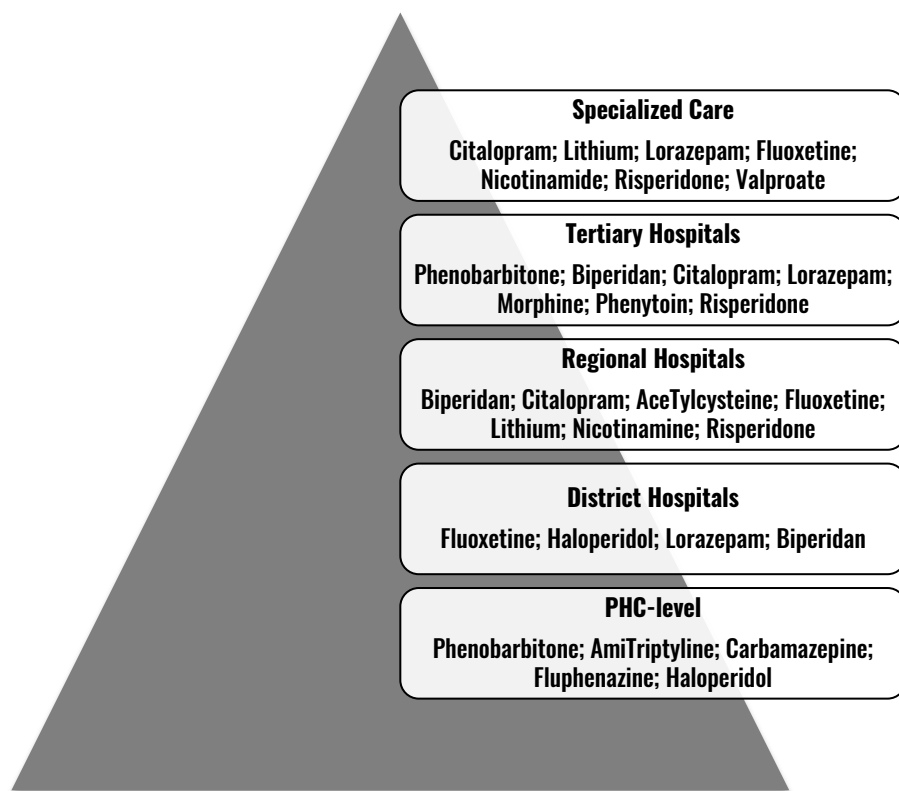
<b>Charcoal, activated</b>	<b>Poisoning</b>
<b>Chlorpromazine</b>	<b>Adult Psychosis</b>
<b>Citalopram</b>	<b>Adult Depression and Dysthymia; Child and Adolescent Behavioural-Conduct Disorder</b>
<b>Clonazepam</b>	<b>Adult Epilepsy; Adult Psychosis; Adult Bi-Polar Disorder; Adult Anxiety Disorders</b>
<b>Clozapine</b>	<b>Adult Psychosis</b>
<b>Diazepam</b>	<b>Adult Psychosis; Adult Alcohol Use Disorders; Adult Bi-Polar Disorder; Adult Drug Use Disorders; Organophosphate and Carbamate Poisoning; Child and Adolescent Alcohol Use Disorders; Adult Anxiety Disorders</b>
<b>Fluoxetine</b>	<b>Adult Depression and Dysthymia; Adult Bi-Polar Disorder; Child and Adolescent Behavioural-Conduct Disorder; Adult Anxiety Disorders; Child and Adolescent Anxiety Disorders</b>
<b>Flupenthixol decanoate</b>	<b>Adult Psychosis</b>
<b>Fluphenazine decanoate</b>	<b>Adult Psychosis</b>
<b>Haloperidol</b>	<b>Adult Psychosis; Adult Bi-Polar Disorder; Child and Adolescent Developmental Disorders; Adult Dementia</b>
<b>Hydrocortisone</b>	<b>Cardiac Arrest</b>
<b>Lamotrigine</b>	<b>Adult Epilepsy; Adult Bi-Polar Disorder</b>
<b>Lithium</b>	<b>Adult Bi-Polar Disorder</b>
<b>Lorazepam</b>	<b>Adult Psychosis; Adult Bi-Polar Disorder; Adult Anxiety Disorders</b>
<b>Methylphenidate</b>	<b>Child and Adolescent Behavioural-ADHD</b>
<b>Naloxone</b>	<b>Opioid-Poisoning</b>
<b>Nicotinamide (B3)</b>	<b>Adult Dementia</b>
<b>Orphenadrine</b>	<b>Adult Psychosis</b>
<b>Phenobarbitone</b>	<b>Adult Epilepsy</b>
<b>Phenytoin</b>	<b>Adult Epilepsy</b>
<b>Promethazine</b>	<b>Adult Psychosis</b>
<b>Risperidone</b>	<b>Child and Adolescent Developmental Disorders; Child, Adolescent Psychosis</b>
<b>Thiamine</b>	<b>Adult Alcohol Use Disorders; Adult Dementia</b>
<b>Valproate</b>	<b>Adult Epilepsy; Adult Bi-Polar Disorder</b>
<b>Vitamin K1</b>	<b>Rat Poison Poisoning</b>
<b>Zuclopenthixol decanoate</b>	<b>Adult Psychosis</b>

The findings illustrated that the most frequently stocked out medications are those prescribed for the treatment of: adult depression and dysthymia, bi-polar disorder, psychosis, epilepsy, dementia, child and adolescent developmental disorders and adolescent behavioral-conduct disorder (Figure 9). Starkly, among the sampled specialized psychiatric and regional hospitals, lithium was among the MNS medications most frequently reported as stocked-out. Further, at the district and regional hospital-level(s), fluoxetine, the first-line treatment for major

depressive disorders as per the STGs, was among the most frequently stocked-out. Both these drugs are listed as essential medicines by the WHO. Reported drug-stock outs for the period April 2016 to March 2017 are summarized for each Province that completed primary data collection in the province-specific results section of this report. Although only a sample of facilities were examined at each level of the health system, the findings illustrate that there is little consistency across levels of the health system and across provinces in terms

of which drugs are not routinely available and where which contradicts the recommendations outlined in the STG.

*FIGURE 9 MNS Disorder Medications most frequently stocked out by level of the health system*



# MNS Disorder Prevalence and Modelled (Crude) Estimates of Access to Care

The Global Burden of Disease (GBD) (2016) study estimated that the 12-month prevalence for any MNS disorder in South Africa in 2016 was 15.9% (excluding epilepsy and intellectual disability) and 16.2%, including epilepsy and intellectual disability (Table 11) [21]. Based on an uninsured South African population of over 46.4million, we have estimated that there were approximately 7.5million uninsured individuals living with a MNS disorder in 2016. With total MHAs for the country reported as 88,444, and an average readmission rate of 24.2% across all hospitals in South Africa; we can crudely

model that approximately 0.89% of the uninsured South African population requiring care received some form of public inpatient mental health care during the 2016/17 FY. Similarly, with total MHOVs reported as 567,277, we can crudely model that approximately 7.5% of the uninsured South African population requiring care received some form of public outpatient care during this period. These figures are crude in that they do not take into account the impact of multiple outpatient visits for the same mental health care users (MHCUs).

*TABLE 11 Prevalence of MNS disorders, Epilepsy & Intellectual Disability and Proportions of Target Population(s) accessing Inpatient and Outpatient Mental Healthcare, South Africa*

Cause	Prevalence (2016) [22]
Idiopathic developmental intellectual disability	1.7%
Epilepsy	0.6%
Schizophrenia	0.2%
Alcohol use disorders	1.6%
Drug use disorders	0.7%
Depressive disorders	3.9%
Bipolar disorder	0.6%
Anxiety disorders	3.8%
Eating disorders	0.2%
Autistic spectrum disorders	0.8%
Attention-deficit/hyperactivity disorder	1.2%
Conduct disorder	0.8%
Total: Mental and substance use disorders	15.9%
Total: Mental and substance use disorders, Epilepsy & Intellectual Disability	16.2%
Total Uninsured Population (South Africa), 2016/17	46,392,634

<b>Modelled Estimate:</b>	
<b>Total Population (uninsured) living with Mental and substance use disorders, Epilepsy &amp; Intellectual Disability (2016/17)</b>	<b>7,534,125</b>
<b>Total: Inpatient Mental Health Admissions, 2016/17</b>	<b>88,444</b>
<i>Modelled Estimate: Total Inpatient Mental Health Admissions that were Readmissions, 2016/17</i>	<i>21,404</i>
<b>Modelled Estimate:</b>	
<b>% of Uninsured South Africans living with Mental and substance use disorders, Epilepsy &amp; Intellectual Disability (2016/17) that have accessed Inpatient Care (2016/17)</b>	<b>0.89%</b>
<b>Total: Outpatient Mental Health Admissions, 2016/17</b>	<b>567,277</b>
<b>Modelled Estimate:</b>	
<b>% of Uninsured South Africans living with Mental and substance use disorders, Epilepsy &amp; Intellectual Disability (2016/17) that have accessed Outpatient Care (2016/17)</b>	<b>7.5%</b>

---

## Discussion and Recommendations

---

This study found that the total costs of inpatient and outpatient mental health services and *known* transfers for contracted hospital and NGO mental health services across all Provinces in South Africa amounted to 8.37 billion rand in the 2016/17 financial year. At the National level, this represented 5.0% of the total health budget (2016/17) and equated to a national average of R180.9 per capita uninsured. It must be noted however that not all Provinces were able to comprehensively specify the range of services and total budgets available for DOH contracted hospital and NGO services for mental health. Per capita mental health expenditure (uninsured) ranged from R58.5 in Mpumalanga to R307.4 in the Western Cape. Both the North West and Limpopo spent less than R100 per capita (uninsured) on mental health care in the 2016/17 financial year, R91.1 and R80.2 per capita uninsured, respectively. After the Western Cape, Gauteng and KwaZulu-Natal were the highest spending provinces, spending R251.6 and R209.4 per capita (uninsured), respectively. Of the total, the vast majority of mental health expenditure was spent on inpatient and outpatient mental health services (7.80 billion rand).

Approximately 86% of these costs were attributed to inpatient services, while the remaining 14% were attributed to outpatient care. National-level estimates show that care at the Specialized Psychiatric hospital-level made up the large majority of the total inpatient and outpatient cost, amounting to 45% of the total; with Primary-level mental health care services accounting for 7.9%, District hospital mental health care services accounting for 11.7%, Regional hospital mental health services accounting for 13.9% and Tertiary and Central hospitals accounting for 8.5% and 7.5%, respectively.

Based on national average readmission rates calculated through primary data collected directly from facilities, across all sampled South African hospitals the average readmission rate for mental health inpatients is 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost

calculations for South Africa, readmissions during the 2016/17 financial year are estimated to have consumed 24.2% of the total health system expenditure on inpatient care, equivalent to an estimated 1.5 billion rand. This finding is stark, when considering that the total primary health care expenditure on mental health amounted to only 616 million, while based on available budgets, community-based NGO services for mental health cost 250 million in the 2016/17 financial year.

Collectively, 93.2% of inpatient mental health admissions in South Africa were for adults aged 18 years and older, with only 6.8% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults receiving outpatient mental health care in the country was 94.2%, compared to only 5.8% of those under 18 years.

We found that for District, Regional, Tertiary, Central Hospitals and Specialized Hospitals, mental health inpatient admissions were substantially longer, when compared to general admissions. At the district hospital-level, mental health care users admitted for inpatient care spent twice as long in hospital in comparison to all patients. At the regional and tertiary hospital-level(s), mental health inpatient admissions lasted nearly 6 and 8 times longer, respectively, when compared to inpatient admissions for all health conditions. At the central

hospital-level, mental health patients admitted for inpatient care spent almost 5 times longer in hospital. While all patients admitted at the specialized psychiatric hospital-level were considered mental health inpatient admissions, the ALOS at this level of care was 157.1 days.

With respect to mental health drug availability, the findings illustrate that there is little consistency across levels of the health system and across provinces in terms of which drugs are not routinely available and at what level of care, which contradicts the recommendations outlined in the Standard Treatment Guidelines. Furthermore, based on the sampled facilities at each level of the health-system, the most frequently stocked out drugs are those prescribed for the treatment of: adult depression and dysthymia; bi-polar disorder, psychosis, epilepsy, dementia, child and adolescent developmental disorders and adolescent behavioural-conduct disorder.

There are huge disparities in mental health personnel across provinces with the availability of psychiatrists ranging from 0.08 to 0.89 per 100,000 uninsured population. These disparities need to be rectified with a more consistent, evidence-based approach to planning. This study has confirmed that the majority of public sector psychiatrists are concentrated in the urban provinces which is consistent with existing evidence [3]. Yet, mental

health workforce targets for psychiatrists for the southern sub-Saharan region suggest that 1.9 psychiatrists per 100,000 will be needed by 2050 [4]. There is also a critical shortage of auxiliary workers, including social workers and occupational therapists, critical for rehabilitative care and support services for mental health users. These findings must, however, be considered in light of the study's limitations; tracking health personnel is instrumental in the delivery of mental health services in the country and critical in order to determine access to care and address shortages; yet the current staffing database of the DOH could not identify specific cadres of specialists or specialist nurses, making estimates of the availability of psychiatrists limited to those facilities and districts that completed primary data collection and estimates of the availability of specialist nurses with advanced psychiatric training indistinguishable from those with other advanced training in other areas.

Despite the majority of District hospitals being designated by the Mental Health Care Act for the provision of 72-hour assessments and the subsequent provision of further involuntary care, treatment and rehabilitation; there are significant characteristics outlined by the Mental Health Care Act (2002) that are not met across a large number of the hospitals. Over 62% of district hospitals across

the country indicate that adult mental health inpatients are kept in general wards with other patients. The large exception to this is in the Free state, which indicates that all its hospitals keep their mental health patients separately. KZN, Limpopo, Mpumalanga and the Northern Cape all indicate that approximately 80% and higher of their hospitals keep their mental health patients together with other patients. An extremely low proportion of hospitals keep their adult and adolescent patients separately (13%), however, close to 80% of all hospitals across the country, separate female and male mental health inpatients.

There are several conclusions and recommendations that have emerged from this study that are worthy of consideration:

1. There are huge disparities between provinces in allocation of mental health resources, which need to be rectified with a more consistent, rational, evidence-based approach to planning.
2. Inpatient care is the main form of care, comprising 86% of the cost of mental health care. This is a reflection of our historical legacy and a focus on psychiatric hospitals and curative inpatient care – we need to develop outpatient care, especially primary care and community-based care, in keeping



with international best practice, and the SA Mental Health Policy Framework.

3. We must not reduce investments in psychiatric hospitals until adequate primary care and community-based services are developed, and the quality of care and infrastructure are improved in hospitals at all level of the health system.
4. Adequate attention must, however, be paid to the potential savings that may yield from reducing readmission rates for all hospitals which cost the health system 1.5 billion rands in the 2016/17 financial year. This is stark when compared to the total primary care service for mental health costing 616 million. It must be recognized that most readmissions are as a result of systemic failures in transition from hospitals to the next source of care within the community.
5. Acknowledging that most mental disorders have their onset before the age of 18 years, this study has revealed an exceptional gap in terms of the service availability for children and adolescents in South Africa, whereby only 6.8% of inpatient admissions and 5.8% outpatient mental health visits were for patients under the age of 18 years.
6. Routine information systems need to be strengthened in order for facilities to monitor

the quality of care and service provision to identify inefficiencies. Most facilities who contributed to this study were unable to report on *condition-specific* inpatient and outpatient loads, average length of inpatient admissions, readmission rates or referral pathways post-discharge.

7. There is discordance between the National database of NGOs licensed by the Department of Health and those reported through primary data collection. Provincial health departments must focus efforts on mapping the NGO service landscape within their Province, specifically to understand their capacity, costs per patient and subsidies received from Government. According to DOH databases and primary data collection, there are still a number of Provinces with very limited or no community-based service provision for mental health.
8. The availability of psychotropic medication must be monitored, as direct facility input confirmed that drugs prescribed for the treatment of: adult depression and dysthymia; bi-polar disorder, psychosis, epilepsy, dementia, child and adolescent developmental disorders and adolescent behavioural-conduct disorder were frequently stocked out. It remains unclear

what the reasons for the stock-outs are, and further interrogation is required.

9. Despite being listed in the Standard Treatment Guidelines, a number of mental health drugs are not routinely available, which points to a need to update the guidelines in line. The unavailability of drugs at primary health care levels may be partly due to unavailability of doctors and health care workers with advanced psychiatric training authorized to initiate treatment which speaks to the need to move toward nurse-initiated prescribing of psychotropic medication, particularly for depression and anxiety disorders.
10. Health promotion and prevention campaigns have not been costed in this report because there were no funds reported on to support these activities. However, most health districts reported a considerable number of campaigns to improve awareness for mental health. Investments in this area are critical to address stigma and promote the use of mental health services.
11. Tracking health personnel instrumental in the delivery of mental health services in the country is critical in order to determine access to care and address shortages through task shifting approaches. The current staffing

database of the Department of Health should be expanded to include specific cadres of specialists.

12. Based on modelled estimates, approximately 1.2% and 7.5% of the uninsured South African population requiring care received some form of inpatient and outpatient care, respectively – suggesting the treatment gap for mental disorders, epilepsy and intellectual disability in South Africa is close to 91%. This does not take into consideration the prevalence of mental disorders when they are co-morbid with other conditions. Major depressive disorder prevalence rates among people living with HIV/AIDS in South Africa has been estimated to range from 11.1% to 34.9% (Petersen et al., 2013). Further, South Africa is seeing a rise in a hidden epidemic of trauma related psychopathology among children, adolescents and adults (Burns, 2010). Additionally, mental disorders have been found to be commonly associated with diabetes, hypertension and TB.
13. We need to undertake an investment case for national Treasury, providing a rational public health approach to new investments for mental health care.

The Ministerial Advisory Committee on Mental Health was appointed by the Minister to advise the

Department of Health on technical matters regarding the achievement of the objectives of the Act as well as the National Mental Health Policy Framework, and a Think Tank of experts has been established to advise the Department on mental health issues.

Following the completion of this first phase of work, technical support from the authors at the University of Cape Town (UCT) (Alan Flisher Centre for Public Mental Health) and the South Africa Medical Research Council (SAMRC) has been requested to develop a mental health investment case. We are now in a position to explore the mechanisms by which our country and Provinces can accelerate our progress towards the achievement of the National Mental Health Policy Framework and Strategic Plan (2013-2020) and take forward the prescribed recommendations of the South African Human Rights Commission Report on the State of Mental Health Care in South Africa in the context of the recent passing of the NHI Bill.

This investment case will provide empirical evidence on the costs and benefits of investing in mental health based on the existing constraints identified in our mental health system, the most cost-effective mix of interventions to address these constraints, and the broader health-sector transformations that are ongoing in the country,

over the next 20 years. Based on consultation with the Mental Health Think Tank, the investment case will model the costs and returns of interventions and programmatic enablers across the following priority areas:

1. Community-based Residential and Day Care services for Mental Disorder(s) and Intellectual Disability including Rehabilitation and Occupational Therapy
2. Integration of Mental Health into PHC Chronic care management; Maternal, Child and Infant Health; Emergency Services)
3. Child and Adolescent Mental Health treatment
4. Hospital infrastructure for mental health (including infrastructure for 72-hour assessments)
5. Health information systems for Mental Health
6. Governance for Mental Health (Provincial and District Mental health plans, resourcing and planning)
7. Inter-sectoral strategies for Mental Health
8. Forensic mental health
9. Prevention/Promotion for Mental Health across the life-course

Completion of the investment case is anticipated by October 2020.

---

## Results and Facility-level Data: Eastern Cape

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in the Eastern Cape amounted to ZAR 806 million, of which 86% was spent on inpatient mental health care and 14% was spent on outpatient mental health care. A total of 522,564 outpatient mental health visits and 12,261 inpatient mental health admissions were reported over this period.

The Eastern Cape therefore allocated approximately 4.0% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R132. In the Eastern Cape province, 63.3% of costs emanate from the Specialized Psychiatric hospital service level, with 15.8% from the District hospital service level, 9.7% from the Primary Health Care level and 9% from the Regional hospital service level. The Eastern Cape has recorded no inpatient admissions at the Provincial Tertiary, and National Central Hospital levels for mental health.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Eastern Cape, readmissions during the 2016/17 financial year are estimated to have cost 173 million Rands, or 21% of the overall mental health expenditure.

On average, 97.3% of inpatient mental health admissions in the Eastern Cape were for adults aged 18 years and older, with only 2.7% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Eastern Cape was 94.6%, compared to only 6.4% of those under 18 years.

## Transfers to Contracted Hospitals for Mental Health Care

The Eastern Cape has reported the contracting of two private Life Esidimeni facilities, the Kirkwood Care Center providing chronic care to 700 adults, and the Algoa Frail Care Center providing care to 145 children. Total cost for contracted hospitals per year is R121,376,735.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case

Contracted Hospitals	Number of users	Annual Budget (2017/18)
Kirkwood Care Centre (Adult Chronic) Life - Esidimeni	700	94,586,100
Algoa Frail Care Centre (Children) Life Esidimeni	145	26,790,635
<b>TOTAL</b>	<b>845</b>	<b>121,376,735</b>

for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

The Eastern Cape has two halfway houses, Care Haven and Capricorn, a day care center and one additional rehab service. Total expenditure for the 2016/17 financial year amounted to R11.5 million.

Four other group homes were identified through primary data collection that cater for 70 mental healthcare users as well as one group home subsidized by the Department of Social Development catering for 10 mental health users. The total annual cost to care amounts to approximately R3.1 million. None of these are subsidized by the Department of Health.

Total No. of Clients licensed for	Budget allocation for 16/17 (ZAR, FY 2016/17)
105	11,464,380

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

# Mental Health Medication Availability

		Drug Name & Duration of Stock-out Reported			
		< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
PRIMARY CARE		Phenobarbitone (1/7 Districts)	Phenytoin (1/7 Districts) Fluphenazine (1/7 Districts)	Phenobarbitone (2/7 Districts)	AceTylcysteine (3/7 Districts) AmiTriptyline(1/7 Districts) Atropine (1/7 Districts) Biperidan (2/7 Districts) Buprenorphine (4/7 Districts) Clonazepam (1/7 Districts) Clonidine (4/7 Districts) Clozapine (3/7 Districts) Epinephrine(adrenaline) (1/7Districts) Fluphenazine (2/7 Districts) Hydrkortisone (1/7 Districts) Lithium (3/7 Districts) Lofexidine (5/7 Districts) Lorazepam (3/7 Districts) Methadone (5/7 Districts) Methylphenidate (3/7 Districts) Morphine (1/7 Districts) Naloxone (1/7 Districts) Povidoneiodine (1/7 Districts) Risperidone (2/7 Districts) Silver sulfadiazine (4/7 Districts)
	DISTRICT HOSPITAL	AceTylcysteine (1/7 Districts) Atropine (2/7 Districts) Biperidan (1/7 Districts) Charcoal (activated) (2/7 Districts)	AceTylcysteine (1/7 Districts) Charcoal (activated) (1/7 Districts) Clonazepam (1/7 Districts) Fluoxetine (1/7 Districts) Hydrkortisone (1/7 Districts)	AceTylcysteine (1/7 Districts) Biperidan (1/7 Districts) Carbamazepine (1/7 Districts) Chlorpromazine (1/7 Districts) Clozapine (1/7 Districts)	AceTylcysteine (2/7 Districts) Biperidan (1/7 Districts) Buprenorphine (7/7 Districts) Citalopram (1/7 Districts) Clonazepam (1/7 Districts) Clonidine (7/7 Districts)

## Drug Name &amp; Duration of Stock-out Reported

< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
Chlorpromazine (1/7 Districts) Clonazepam (2/7 Districts) Clozapine (1/7 Districts) Diazepam (1/7 Districts) Epinephrine (1/7 Districts) Fluoxetine (2/7 Districts) Flupentixol (1/7 Districts) Haloperidol (2/7 Districts) Hydracortisone (1/7 Districts) Lofexidine (2/7 Districts) Lorazepam (5/7 Districts) Methylphenidate (1/7 Districts) Morphine (1/7 Districts) Naloxone (3/7 Districts) Orphenadrine (1/7 Districts) Phenytoin(3/7 Districts) Silver sulfadiazine (2/7 Districts) VK1(phytomenodione) (1/7 Districts) Zuclopenthixol (2/7 Districts)	Phenobarbitone (2/7 Districts) Povidoneiodine (1/7 Districts) Risperidone (1/7 Districts) Sodium Chloride (1/7 Districts) VK1(phytomenodione) (1/7 Districts)	Fluphenazine (1/7 Districts) Orphenadrine (1/7 Districts) Risperidone (1/7 Districts) Zuclopenthixol (1/7 Districts)	Clozapine (4/7 Districts) Flupentixol (2/7 Districts) Fluphenazine (3/7 Districts) Lamotrigine (1/7 Districts) Lithium (2/7 Districts) Lofexidine (5/7 Districts) Methadone (5/7 Districts) Methylphenidate (3/7 Districts) Morphine (1/7 Districts) Naloxone (1/7 Districts) Nicotinamine (vB3) (4/7 Districts) Orphenadrine (1/7 Districts) Phenytoin (1/7 Districts) Povidoneiodine (1/7 Districts) Risperidone (3/7 Districts) Silver sulfadiazine (1/7 Districts) Sodium Chloride (1/7 Districts) Thiamine (1/7 Districts) Valproate (1/7 Districts) VK1(phytomenodione) (2/7 Districts) Zuclopenthixol (1/7 Districts)
Charcoal (activated) (1/2 Hospitals) Hydracortisone (1/2 Hospitals) Naloxone(1/2 Hospitals) Nicotinamine (vB3) (1/2 Hospitals)	Biperidan (1/2 Hospitals)		



**SPECIALIZED PSYCHIATRIC HOSPITAL**

**Drug Name & Duration of Stock-out Reported**

<b>&lt; 1 month</b>	<b>1 – 3 months</b>	<b>3 – 6 months</b>	<b>Not Routinely Available</b>
<b>Phenytoin(1/2 Hospitals)</b>  <b>Valproate(1/2 Hospitals)</b> <b>VK1(phytomenodione) (1/2 Hospitals)</b>			
<b>Atropine (1/3 Hospitals)</b> <b>Lithium (1/3 Hospitals)</b> <b>Lorazepam (1/3 Hospitals)</b> <b>Naloxone(1/3 Hospitals)</b> <b>Valproate(1/3 Hospitals)</b>			<b>AceTylcysteine (1/3 Hospitals)</b> <b>Buprenorphine (1/3 Hospitals)</b> <b>Clonidine (1/3 Hospitals)</b> <b>Lofexidine(1/3 Hospitals)</b> <b>Methadone(1/3 Hospitals)</b> <b>Morphine(1/3 Hospitals)</b> <b>Nicotinamine (vB3)(1/3 Hospitals)</b> <b>Phenobarbitone (1/3 Hospitals)</b>

## Facility-level Costing Results

### Eastern Cape: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Greenville Hospital	2316	2	3.0	3.0	6.0	13,899	13,899	13,899
Madzikane kaZulu Memorial Hospital	2316	91	9.0	9.0	819.0	1,897,169	1,897,169	1,897,169
Mount Ayliff Hospital	2316	36	7.2	7.2	259.2	600,423	600,423	600,423
Sipetu Hospital	2316	83	4.9	7.4	406.7	942,098	1,422,569	1,182,333
St Patrick's Hospital	2316	10	5.5	8.3	55.0	127,405	192,381	159,893
Taylor Bequest Hospital (Matatiele)	2316	180	3.5	3.5	630.0	1,459,361	1,459,361	1,459,361
Adelaide Hospital	2240	0	5.0	7.6	0.0	0	0	0
Bedford Hospital	2240	0	2.9	4.4	0.0	0	0	0
Butterworth Hospital	2240	32	5.4	8.2	172.8	387,058	584,457	485,758
Cathcart Hospital	2240	44	5.9	8.9	259.6	581,483	878,039	729,761
Fort Beaufort Hospital	2240	0	3.6	5.4	0.0	0	0	0
Komga Hospital	2240	1	3.9	5.9	3.9	8,736	13,191	10,963
Madwaleni Hospital	2240	202	5.4	8.2	1090.8	2,443,303	3,689,387	3,066,345
Nompumelelo (Peddie) Hospital	2240	89	4.4	6.6	391.6	877,152	1,324,499	1,100,826
SS Gida Hospital	2240	128	3.8	5.7	486.4	1,089,496	1,645,139	1,367,318
Stutterheim Hospital	2240	15	4.2	6.3	63.0	141,115	213,083	177,099
Tafalofefe Hospital	2240	111	9.0	13.6	999.0	2,237,678	3,378,894	2,808,286
Victoria Hospital	2240	105	5.5	8.3	577.5	1,293,553	1,953,265	1,623,409
Bhisho Hospital	2378	413	30.0	30.0	12390.0	29,460,905	29,460,905	29,460,905
Grey Hospital	2378	32	7.6	11.5	243.2	578,280	873,203	725,742
All Saints Hospital	2345	67	5.8	8.8	388.6	911,129	1,375,805	1,143,467
Cala Hospital	2345	53	5.1	7.7	270.3	633,758	956,974	795,366
Cofimvaba Hospital	2345	120	3.1	4.7	372.0	872,208	1,317,034	1,094,621

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Cradock Hospital	2345	74	4.5	4.5	333.0	780,767	780,767	780,767
Dordrecht Hospital	2345	2	4.1	6.2	8.2	19,226	29,031	24,129
Elliot Hospital	2345	21	4.7	7.1	98.7	231,417	349,439	290,428
Glen Grey Hospital	2345	174	7.5	7.5	1305.0	3,059,762	3,059,762	3,059,762
Hewu Hospital	2345	233	5.4	8.2	1258.2	2,950,033	4,454,550	3,702,291
Indwe Hospital	2345	3	2.7	4.1	8.1	18,992	28,677	23,834
Martje Venter (Tarkastad) Hospital	2345	20	4.9	7.4	98.0	229,775	346,961	288,368
Mjanyana Hospital	2345	0	11.9	18.0	0.0	0	0	0
Molteno Hospital	2345	6	3.6	5.4	21.6	50,644	76,473	63,559
Sterkstroom Hospital	2345	1	2.8	4.2	2.8	6,565	9,913	8,239
Wilhelm Stahl (Middelburg) Hospital	2345	1087	2.3	3.5	2500.1	5,861,848	8,851,391	7,356,619
Aliwal North Hospital	2679	50	3.9	5.9	195.0	522,392	788,811	655,602
Burgersdorp Hospital	2679	53	2.7	4.1	143.1	383,355	578,866	481,111
Cloete Joubert (Barkly East) Hospital	2679	21	4.3	6.5	90.3	241,908	365,280	303,594
Empilisweni Hospital	2679	155	5.1	7.7	790.5	2,117,695	3,197,720	2,657,708
Jamestown Hospital	2679	0	3.2	4.8	0.0	0	0	0
Lady Grey Hospital	2679	0	4.2	6.3	0.0	0	0	0
Maclear Hospital	2679	0	8.2	12.4	0.0	0	0	0
St Francis Hospital	2679	0	13.5	20.4	0.0	0	0	0
Steynsburg Hospital	2679	1	3.1	4.7	3.1	8,305	12,540	10,422
Taylor Bequest Hospital (Elundini)	2679	70	7.0	10.6	490.0	1,312,676	1,982,141	1,647,409
Umlamli Hospital	2679	1	6.9	10.4	6.9	18,485	27,912	23,198
Uitenhage Hospital	3406	751	4.2	4.2	3154.2	10,744,544	10,744,544	10,744,544
Bambisana Hospital	2336	23	6.1	9.2	140.3	327,757	494,913	411,335
Canzibe Hospital	2336	1	4.9	7.4	4.9	11,447	17,285	14,366
Dr Malizo Mpehle Memorial Hospital	2336	130	7.0	7.0	910.0	2,125,866	2,125,866	2,125,866
Holy Cross Hospital	2336	76	8.3	12.5	630.8	1,473,622	2,225,169	1,849,396
Isilimela Hospital	2336	16	5.8	8.8	92.8	216,792	327,355	272,073
Nessie Knight Hospital	2336	52	5.8	8.8	301.6	704,573	1,063,905	884,239

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
St Barnabas Hospital	2336	373	7.6	11.5	2834.8	6,622,423	9,999,858	8,311,140
St Lucy's Hospital	2336	4	9.4	14.2	37.6	87,838	132,635	110,237
Zitulele Hospital	2336	47	5.9	8.9	277.3	647,805	978,186	812,995
Aberdeen Hospital	2325	13	3.5	5.3	45.5	105,800	159,757	132,778
Andries Vosloo Hospital	2325	162	5.0	5.0	810.0	1,883,465	1,883,465	1,883,465
BJ Vorster (Kareedouw) Hospital	2325	25	2.8	4.2	70.0	162,769	245,781	204,275
Humansdorp Hospital	2325	110	5.0	5.0	550.0	1,278,896	1,278,896	1,278,896
Midland Hospital	2325	122	6.1	6.1	744.2	1,730,463	1,730,463	1,730,463
Port Alfred Hospital	2325	170	3.0	3.0	510.0	1,185,885	1,185,885	1,185,885
SAWAS Memorial (Jansenville) Hospital	2325	2	4.0	4.0	8.0	18,602	18,602	18,602
Settlers Hospital	2325	266	7.0	7.0	1862.0	4,329,644	4,329,644	4,329,644
Sundays Valley (Kirkwood) Hospital	2325	1	2.4	3.6	2.4	5,581	8,427	7,004
Willowmore Hospital	2325	21	2.3	3.5	48.3	112,310	169,589	140,949
<b>TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>98,146,132</b>	<b>117,310,136</b>	<b>107,728,134</b>

*Regional Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Admissions (FY 2016/17)	Health Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Cecilia Makiwane Hospital	527	0	5.4	25.6	0.0	0	0	0
Frontier Hospital	2703	535	3	3.0	1605.0	4,337,573	4,337,573	4,337,573
Dora Nginza Hospital	2383	1587	5.6	26.5	8887.2	21,175,718	100,372,903	60,774,311
Mthatha General Hospital	1541	0	7	33.2	0.0	0	0	0
St Elizabeth's Hospital	3153	122	5.6	26.5	683.2	2,154,011	10,210,011	6,182,011
Mthatha Mental Health Unit	1541	296	7	27.4	2072.0	3,193,122	12,485,107	7,839,115
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>30,860,424</b>	<b>127,405,594</b>	<b>79,133,010</b>

*Provincial Tertiary Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Admissions (FY 2016/17)	Health Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Average Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Frere Hospital	3834	0	5.4	7.6	0.0	0	0	0
Livingstone Hospital	4607	0	7.6	10.6	0.0	0	0	0
Port Elizabeth Provincial Hospital	765	0	3.6	5.0	0.0	0	0	0
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>0</b>	<b>0</b>	<b>0</b>

*National Central Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure PDE, ZAR (FY 2016/17)	per Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), Days	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Inpatient Cost, ZAR (FY 2016/17)	Total
Nelson Mandela Academic Hospital	5114	0	9.3	41.4	0.0	0	0	0	
<b>TOTAL NATIONAL CENTRAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>0</b>	<b>0</b>	<b>0</b>	

*Specialized Psychiatric Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure ZAR (FY 2016/17)	per PDE, Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), Days	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Tower Hospital	830	273	360	360.0	98280.0	81,549,466	81,549,466	81,549,466
Komani Hospital	1001	1053	186.7	160.3	196595.1	196,719,230	168,850,942	182,785,086
Elizabeth Donkin Hospital	1405	1419	36.7	36.7	52077.3	73,153,040	73,153,040	73,153,040
Fort England Hospital	1556	825	129.4	129.4	106755.0	166,106,956	166,106,956	166,106,956
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>517,528,692</b>	<b>489,660,404</b>	<b>503,594,548</b>

# Eastern Cape: Outpatient Costs of Mental Health Services by Service Level

## Primary Health Care Outpatient Mental Health Costs

(Community Health & Day Centers, Clinics and Mobiles)

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Alfred Nzo District Municipality	256	19028	4,879,925
Amathole District Municipality	273	27444	7,496,699
Buffalo City Metropolitan Municipality	384	2723	1,044,838
Chris Hani District Municipality	307	37381	11,459,967
Joe Gqabi District Municipality	321	9071	2,909,106
Nelson Mandela Bay Municipality	392	110388	43,263,682
Oliver Tambo District Municipality	293	11074	3,244,350
Sarah Baartman District Municipality	293	13878	4,069,339
TOTAL: Primary Health Care Outpatient Mental Health Costs, Eastern Cape Province, (FY 2016/17) ZAR			78,367,906

## District Hospital Outpatient Mental Health Costs

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Greenville Hospital	772	100	77,215
Madzikane kaZulu Memorial Hospital	772	1321	1,020,008
Mount Ayliff Hospital	772	844	651,693
Sipetu Hospital	772	1059	817,705
St Patrick's Hospital	772	761	587,605
Tayler Bequest Hospital (Matatiele)	772	865	667,908
Adelaide Hospital	747	9	6,720
Bedford Hospital	747	19	14,186
Butterworth Hospital	747	2364	1,765,056
Cathcart Hospital	747	86	64,211
Fort Beaufort Hospital	747	0	0
Komga Hospital	747	25	18,666

<b>Hospital Name</b>	<b>Expenditure per Outpatient, ZAR (FY 2016/17)</b>	<b>Total Mental Health Clients (FY 2016/17)</b>	<b>Total Outpatient Cost, ZAR (FY 2016/17)</b>
Madwaleni Hospital	747	524	391,239
Nompumelelo (Peddie) Hospital	747	285	212,792
SS Gida Hospital	747	529	394,972
Stutterheim Hospital	747	216	161,274
Tafalofefe Hospital	747	86	64,211
Victoria Hospital	747	314	234,445
Bhisho Hospital	793	2231	1,768,288
Grey Hospital	793	328	259,972
All Saints Hospital	782	427	333,721
Cala Hospital	782	386	301,678
Cofimvaba Hospital	782	432	337,629
Cradock Hospital	782	27	21,102
Dordrecht Hospital	782	156	121,922
Elliot Hospital	782	197	153,965
Glen Grey Hospital	782	327	255,566
Hewu Hospital	782	416	325,124
Indwe Hospital	782	30	23,446
Martje Venter (Tarkastad) Hospital	782	21	16,413
Mjanyana Hospital	782	93	72,684
Molteno Hospital	782	5	3,908
Sterkstroom Hospital	782	7	5,471
Wilhelm Stahl (Middelburg) Hospital	782	3000	2,344,645
Aliwal North Hospital	893	216	192,883
Burgersdorp Hospital	893	142	126,803
Cloete Joubert (Barkly East) Hospital	893	20	17,860
Empilisweni Hospital	893	895	799,215
Jamestown Hospital	893	2	1,786
Lady Grey Hospital	893	0	0
Maclear Hospital	893	93	83,047
St Francis Hospital	893	0	0
Steynsburg Hospital	893	2	1,786
Taylor Bequest Hospital (Elundini)	893	368	328,616
Umlamli Hospital	893	15	13,395
Uitenhage Hospital	1135	1193	1,354,621



<b>Hospital Name</b>	<b>Expenditure per Outpatient, ZAR (FY 2016/17)</b>	<b>Total Mental Health Clients (FY 2016/17)</b>	<b>Total Outpatient Cost, ZAR (FY 2016/17)</b>
Bambisana Hospital	779	24	18,689
Canzibe Hospital	779	230	179,102
Dr Malizo Mpehle Memorial Hospital	779	997	776,369
Holy Cross Hospital	779	400	311,482
Isilimela Hospital	779	144	112,134
Nessie Knight Hospital	779	351	273,326
St Barnabas Hospital	779	457	355,868
St Lucy's Hospital	779	218	169,758
Zitulele Hospital	779	71	55,288
Aberdeen Hospital	775	124	96,111
Andries Vosloo Hospital	775	360	279,032
BJ Vorster (Kareedouw) Hospital	775	31	24,028
Humansdorp Hospital	775	165	127,890
Midland Hospital	775	435	337,163
Port Alfred Hospital	775	170	131,765
SAWAS Memorial (Jansenville) Hospital	775	5	3,875
Settlers Hospital	775	279	216,250
Sundays Valley (Kirkwood) Hospital	775	21	16,277
Willowmore Hospital	775	50	38,754
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>19,938,613</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Cecilia Makiwane Hospital	176	0	0
Frontier Hospital	901	487	438,712
Dora Nginza Hospital	794	770	611,565
Mthatha General Hospital	514	0	0
St Elizabeth's Hospital	1051	351	368,881
Mthatha Mental Health Unit	514	17669	9,076,460
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>10,495,617</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Frere Hospital	1278	0	0
Livingstone Hospital	1536	0	0
Port Elizabeth Provincial Hospital	255	0	0
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>0</b>

*National Central Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Nelson Mandela Academic Hospital	1705	9	15,343
<b>TOTAL NATIONAL CENTRAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>15,343</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Tower Hospital	277	3420	945,934
Komani Hospital	334	4730	1,577,662
Elizabeth Donkin Hospital	468	1418	663,955
Fort England Hospital	519	6777	3,514,923
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, EASTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>6,702,475</b>

## Eastern Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Mental Health Clients	Total Outpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	78,367,906	230,987	-	-	-	339	78,367,906	9.7%
District Hospital	19,938,613	24,968	107,728,135	6,151	17,514	799	127,666,748	15.8%
Regional Hospital	1,419,158	1,608	71,293,894	2,244	31,771	883	72,713,052	9%
Mental Health Centre	9,076,460	17,669	7,839,115	296	26,483	514	16,915,574	2.1%
Provincial Tertiary Hospital	0.00	0	0.00	0	0	0	0	0.0%
National Central Hospital	15,343	9	0.00	0	0	1,705	15,343	0.0%
Specialized Psychiatric Hospital	6,702,475	16,345	503,594,548	3,570	141,063	410	510,297,023	63.3%
<b>ALL SERVICE LEVEL(S)</b>	<b>115,519,955</b>	<b>522,564</b>	<b>690,455,692</b>	<b>12,261</b>	<b>56,313</b>	<b>613</b>	<b>805,975,647</b>	<b>100.0%</b>

## Eastern Cape: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Eastern Cape Province	805,975,647	85.7%	14.3%%	20,244,339,000	4.0%	6,101,187	132

## Eastern Cape: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile	-	-	96.9%	3.1%
District Hospital	94.1%	5.9%	94.1%	5.9%
Regional Hospital	97.8%	2.2%	93.0%	7.0%
Mental Health Centre	98.6%	1.4%	92.6%	7.4%
Provincial Tertiary Hospital	-	-	-	-
National Central Hospital	-	-	100%	0.0%
Specialized Psychiatric Hospital	98.9%	1.1%	90.9%	9.1%
ALL SERVICE LEVEL(S)	97.3%	2.7%	94.6%	6.4%

## Eastern Cape: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions ZAR (FY 2016/17)
District Hospital	21.6%	23,269,277
Regional Hospital	29.9%	21,298,773
Provincial Tertiary Hospital	29.3%	
National Central Hospital	5.6%* *only one National Central Hospital was able to provide total number of readmissions	
Specialized Psychiatric Hospital	25.5%	128,520,975
ALL SERVICE LEVEL(S)	24.2%	166,995,275
*Admitted within three months of previous discharge		

---

## Results and Facility-level Data: Free State

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in the Free State amounted to ZAR 253 million, of which 88% was spent on inpatient mental health care and 12% was spent on outpatient mental health care. A total of 68,085 outpatient mental health visits and 2,878 inpatient mental health admissions were reported over this period.

The Free State therefore allocated approximately 2.8% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R106. In the Free State province, 49.6% of costs emanate from the Specialized Psychiatric hospital service level, with 37.7% from the Regional hospital service level, 8.0% from the District hospital service level, 4.1% from the Primary Health Care level and 0.7% from the National Central hospital service level. The Free State has recorded no inpatient admissions or outpatient mental health clients at the Provincial Tertiary hospital service-level. Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Free State, readmissions during the 2016/17 financial year are estimated to have cost 60.2 million rands, or 23.8% of the overall mental health expenditure.

On average, 89.9% of inpatient mental health admissions in the Free State were for adults aged 18 years and older, with 10.1% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Free State was 87.4%, compared to only 12.6% of those under 18 years.

## Transfers to Contracted Hospitals for Mental Health Care

The Free State reports having contracts with five facilities, four of which are located in Mangaung Metro, including Bloem Care Centre, M-Care Optima, Nurture Hillandale, and Care Cure Victoria Gardens. The fifth facility, Corona Medical Care is located in Thabo Mofutsanyana. The Free State Provincial respondents were not able to provide annual budgets for these contracts.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings, and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

The Free State has 5 group homes catering for geriatric mental health users. The total annual budget for care is R2,1million.

Total No. of Clients licensed for	Budget allocation for 16/17 (ZAR, FY 2016/17)
Unknown	2,114,000.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Mental Health Medication Availability

Drug Name & Duration of Stock-out Reported

	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
<b>PRIMARY CARE</b>	AmiTriptyline (1/3 Districts) Diazepam (1/3 Districts) Phenobarbitone (1/3 Districts)	Charcoal (activated) (1/3 Districts) Chlorpromazine (1/3 Districts)		AceTylcysteine (3/3 Districts) AmiTriptyline (1/3 Districts) Biperidan(1/3 Districts) Buprenorphine (2/3 Districts) Citalopram (1/3 Districts) Clonidine (1/3 Districts) Clozapine (1/3 Districts) Fluphenazine (1/3 Districts) Hydrocortisone (1/3 Districts) Lithium (1/3 Districts) Lofexidine (1/3 Districts)
<b>DISTRICT HOSPITAL</b>	Biperidan (1/3 Districts) Diazepam (1/3 Districts) Fluoxetine (1/3 Districts) Haloperidol (1/3 Districts)	Charcoal (activated) (1/3 Districts) Chlorpromazine (1/3 Districts) Diazepam (1/3 Districts)	Biperidan (1/3 Districts)	AceTylcysteine (2/3 Districts) AmiTriptyline (1/3 Districts) Buprenorphine (2/3 Districts) Chlorpromazine (1/3 Districts) Hydrocortisone (1/3 Districts) Lithium (1/3 Districts) Lofexidine (1/3 Districts)
<b>REGIONAL HOSPITAL</b>	Diazepam(1/2 Hospitals) Epinephrine(adrenaline)(1/2 Hospitals) Fluoxetine (1/2 Hospitals) Haloperidol( 1/2 Hospitals) Nicotinamine (vB3) (1/2 Hospitals)	Biperidan (1/2 Hospitals) Charcoal (activated) (1/2 Hospitals) Citalopram (1/2 Hospitals) Clozapine (1/2 Hospitals) Thiamine (1/2 Hospitals)	Chlorpromazine (1/2 Hospitals)	AceTylcysteine (1/2 Hospitals) AmiTriptyline (1/2 Hospitals) Buprenorphine (2/2 Hospitals) Clonidine (2/2 Hospitals) Clozapine (1/2 Hospitals) Lofexidine (2/2 Hospitals) Methadone (2/2 Hospitals)



**Drug Name & Duration of Stock-out Reported**

<b>SPECIALIZED PSYCHIATRIC HOSPITAL</b>	<b>&lt; 1 month</b>	<b>1 – 3 months</b>	<b>3 – 6 months</b>	<b>Not Routinely Available</b>
				<b>Nicotinamine (vB3) (1/2 Hospitals)</b> <b>Povidoneiodine (1/2 Hospitals)</b> <b>Silver sulfadiazine (1/2 Hospitals)</b> <b>VK1(phytomenodione) (1/2 Hospitals)</b> <b>Zuclopenthixol (1/2 Hospitals)</b>
	<b>Epinephrine(adrenaline) (1/1 Hospitals)</b> <b>Fluoxetine (1/1 Hospitals)</b> <b>Nicotinamine (vB3) (1/1 Hospitals)</b>	<b>Citalopram (1/1 Hospitals)</b>		<b>AceTylcysteine(1/1 Hospitals)</b> <b>Buprenorphine (1/1 Hospitals)</b> <b>Clonidine (1/1 Hospitals)</b> <b>Lofexidine (1/1 Hospitals)</b> <b>Methadone (1/1 Hospitals)</b> <b>Morphine (1/1 Hospitals)</b> <b>VK1(phytomenodione) (1/1 Hospitals)</b>

## Facility-level Costing Results

### Free State: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Cost*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
fs Botshabelo Hospital	2,604	58.0	3.0	3.0	174	453,150	453,150	453,150
fs Diamond (Diamant) Hospital	2,858	15.0	3.0	3.0	45	128,631	128,631	128,631
fs Dr JS Moroka Hospital	2,604	61.0	3.0	3.0	183	476,589	476,589	476,589
fs Elizabeth Ross Hospital	2,513	40.0	3.0	3.0	120	301,575	301,575	301,575
fs Embekweni Hospital	2,858	0.0	3.0	3.0	0	0	0	0
fs Fezi Ngumbentombi Hospital	2,550	88.0	3.0	3.0	264	673,306	673,306	673,306
fs Itemoheng Hospital	2,513	15.0	3.0	3.0	45	113,091	113,091	113,091
fs John Daniel Newberry Hospital	2,513	26.0	3.0	3.0	78	196,024	196,024	196,024
fs Katleho Hospital	2,337	99.0	3.0	3.0	297	694,204	694,204	694,204
fs Mafube Hospital	2,550	89.0	3.0	3.0	267	680,957	680,957	680,957
fs Mohau Hospital	2,337	7.0	3.0	3.0	21	49,085	49,085	49,085
fs Nala Hospital	2,337	19.0	3.0	3.0	57	133,231	133,231	133,231
fs National District Hospital	2,604	285.0	3.0	3.0	855	2,226,687	2,226,687	2,226,687
fs Nketoana Hospital	2,513	25.0	3.0	3.0	75	188,485	188,485	188,485
fs Parys Hospital	2,550	83.0	3.0	3.0	249	635,050	635,050	635,050
fs Phekolong Hospital	2,513	10.0	3.0	3.0	30	75,394	75,394	75,394
fs Phumelela Hospital	2,513	2.0	3.0	3.0	6	15,079	15,079	15,079
fs Phuthuloha Hospital	2,513	31.0	3.0	3.0	93	233,721	233,721	233,721
fs Seniorita Ntlabathi Hospital	2,513	91.0	3.0	3.0	273	686,084	686,084	686,084
fs Stoffel Coetzee Hospital	2,858	14.0	3.0	3.0	42	120,055	120,055	120,055
fs Thebe Hospital	2,513	77.0	3.0	3.0	231	580,533	580,533	580,533
fs Thusanong Hospital	2,337	36.0	3.0	3.0	108	252,438	252,438	252,438
fs Tokollo Hospital	2,550	74.0	3.0	3.0	222	566,189	566,189	566,189
fs Winburg Hospital	2,337	46.0	3.0	3.0	138	322,559	322,559	322,559

*Regional Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions  (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR  (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
fs Boitumelo Hospital	3,014	359.0	4.4	20.9	1,580	4,761,072	22,567,479	13,664,275
fs Bongani Hospital	2,219	82.0	6.0	28.4	492	1,091,573	5,174,055	3,132,814
fs Dihlabeng Hospital	3,540	295.0	4.0	4.0	1,180	4,176,744	4,176,744	4,176,744
fs Mofumahadi Manapo Mopeli Hospital	2,716	89.0	295.1	295.1	26,264	71,335,970	71,335,970	71,335,970
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>						<b>81,365,359</b>	<b>103,254,249</b>	<b>92,309,804</b>

*Provincial Tertiary Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR  (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
fs Pelonomi Hospital	3,345	0.0	5.6	7.8	0	0	0	0
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>						<b>0</b>	<b>0</b>	<b>0</b>

*National Central Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
fs Universitas (C) Hospital	6,500	13.0	7.5	33.4	98	633,734	2,824,123	1,728,928
<b>TOTAL NATIONAL CENTRAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>						<b>633,734</b>	<b>2,824,123</b>	<b>1,728,928</b>

*Specialized Psychiatric Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
fs Free State Psychiatric Complex Hospital	1,180	749.0	135.0	135.0	101,1	119,302,217	119,302,217	119,302,217
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>						<b>119,302,217</b>	<b>119,302,217</b>	<b>119,302,217</b>

# Free State: Outpatient Costs of Mental Health Services by Service Level

## Primary Health Care Outpatient Mental Health Costs

*(Community Health & Day Centers, Clinics and Mobiles)*

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
fs Fezile Dabi District Municipality	23,227	9,433	3,983,565
fs Lejweleputswa District Municipality	20,703	9,242	3,298,914
fs Mangaung Metropolitan Municipality	26,327	14,866	6,747,800
fs Thabo Mofutsanyana District Municipality	37,520	14,295	5,363,460
fs Xhariep District Municipality	11,499	1,604	709,374
TOTAL: Primary Health Care Outpatient Mental Health Costs, Free State Province, (FY 2016/17) ZAR			20,103,113

## District Hospital Outpatient Mental Health Costs

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
fs Botshabelo Hospital	868	65	56,427
fs Diamond (Diamant) Hospital	953	0	0
fs Dr JS Moroka Hospital	868	179	155,391
fs Elizabeth Ross Hospital	838	38	31,833
fs Embekweni Hospital	953	0	0
fs Fezi Ngumbentombi Hospital	850	20	17,003
fs Itemoheng Hospital	838	11	9,215
fs John Daniel Newberry Hospital	838	8	6,702
fs Katleho Hospital	779	0	0
fs Mafube Hospital	850	53	45,057
fs Mohau Hospital	779	8	6,233
fs Nala Hospital	779	1	779
fs National District Hospital	868	115	99,832
fs Nketoana Hospital	838	8	6,702
fs Parys Hospital	850	7	5,951

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
fs Phekolong Hospital	838	97	81,258
fs Phumelela Hospital	838	0	0
fs Phuthuloha Hospital	838	4	3,351
fs Seniorita Ntlabathi Hospital	838	37	30,995
fs Stoffel Coetzee Hospital	953	0	0
fs Thebe Hospital	838	21	17,592
fs Thusanong Hospital	779	13	10,129
fs Tokollo Hospital	850	19	16,153
fs Winburg Hospital	779	0	0
TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR			600,600

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
fs Boitumelo Hospital	1,005	887	891,169
fs Bongani Hospital	740	142	105,016
fs Dihlabeng Hospital	1,180	1,180	1,392,248
fs Mofumahadi Manapo Mopeli Hospital	905	528	478,038
TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR			2,866,470

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
fs Pelonomi Hospital	1,115	0	0
TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR			0

*National Central Hospital Outpatient Mental Health Costs*

<b>Hospital Name</b>	<b>Expenditure per Outpatient, ZAR (FY 2016/17)</b>	<b>Total Mental Health Clients (FY 2016/17)</b>	<b>Total Outpatient Cost, ZAR (FY 2016/17)</b>
fs Universitas (C) Hospital	2,167	31	67,165
<b>TOTAL NATIONAL CENTRAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>			<b>67,165</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

<b>Hospital Name</b>	<b>Expenditure per Outpatient, ZAR (FY 2016/17)</b>	<b>Total Mental Health Clients (FY 2016/17)</b>	<b>Total Outpatient Cost, ZAR (FY 2016/17)</b>
fs Free State Psychiatric Complex Hospital	393	15,173	5,967,372
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, FREE STATE PROVINCE, (FY 2016/17) ZAR</b>			<b>5,967,372</b>

## Free State: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	20,103,113	49,440				407	20,103,113	8.0%
District Hospital	600,600	704	9,802,117	1,291	7,593	853	10,402,717	4.1%
Regional Hospital	2,866,470	2,737	92,309,804	825	111,891	1,047	95,176,274	37.7%
Provincial Tertiary Hospital	0	0	0	0			0	0.0%
National Central Hospital	67,165	31	1,728,928	13	132,994	2,167	1,796,093	0.7%
Specialized Psychiatric Hospital	5,967,372	15,173	119,302,217	749	159,282	393	125,269,589	49.6%
ALL SERVICE LEVEL(S)	29,604,720	68,085	223,143,066	2,878	77,534	435	252,747,786	100.0%

## Free State: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Free State Province	252,747,786	88.3%	11.7%	9,042,105,000	2.8%	2,377,080	106



## Free State: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile	-	-	87.4%	12.6%
District Hospital	89.1%	10.9%	91.9%	8.1%
Regional Hospital	94.0%	6.0%	70.1%	29.9%
Provincial Tertiary Hospital	-	-	-	-
National Central Hospital	92.3%	7.7%	100.0%	
Specialized Psychiatric Hospital	93.4%	6.6%	59.3%	40.7%
ALL SERVICE LEVEL(S)	89.9%	10.1%	87.4%	12.6%

## Free State: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions ZAR (FY 2016/17)
District Hospital	21.6%	2,117,257
Regional Hospital	29.9%	27,600,631
Provincial Tertiary Hospital	29.3%	0
National Central Hospital	5.6%*	96,820
Specialized Psychiatric Hospital	25.5%	30,422,065
ALL SERVICE LEVEL(S)	24.2%	54,000,622

\*Admitted within three months of previous discharge, only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: Gauteng

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in Gauteng amounted to ZAR 2,334 million, of which 89.1% was spent on inpatient mental health care and 10.9% was spent on outpatient mental health care. A total of 456,279 outpatient mental health visits and 16,473 inpatient mental health admissions were reported over this period.

Gauteng therefore allocated approximately 6.2% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R233. In the Gauteng province, 49.4% of costs emanate from the Specialized Psychiatric hospital service level, with 15.8% and 15.7%, respectively from the National Central Hospital service level and the Other Specialized Hospital level, which includes specialized TB and chronic care hospitals. Gauteng spent approximately 8.5% of its overall mental health spending on Primary care services for mental health, with 4.3% and 4.5%, respectively being spent at the District hospital and Regional hospital service levels.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Gauteng, readmissions during the 2016/17 financial year are estimated to have cost 381 million Rands, or 16% of the overall mental health expenditure for the province.

On average, 95.1% of inpatient mental health admissions in Gauteng were for adults aged 18 years and older, with only 4.9% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Gauteng was 88.8%, compared to

only 10.5% of those under 18 years, however outpatient data disaggregated by age was not available for the District, Regional and Tertiary hospital service level.

## Transfers to Contracted Hospitals for Mental Health Care

Gauteng did not report on contracted hospitals providing mental health services, but there are known Life Care groups providing such services in Gauteng. Based on a desk review, those listed on the Life Care Group website include: Life Carstenview, Life New Kensington Clinic, and Life Riverfield Lodge in Johannesburg as well as Life Glynnview in Benoni and Life Poortview in Roodeport.

Based on an article written in 2017 by the Gauteng provincial Democratic Alliance Party<sup>1</sup> the Baneng Center looks after 275 severely impaired children, charging R488 per day for each patient according to the new contract with the Department of Health, amounting to approximately R15,000 per month for each patient. 400 former Life Esidimeni patients are now at the Selby Park Hospital in inner city Johannesburg. According to National Health Minister Aaron Motsoaledi, there are currently 789 patients at Selby Park and the two Esidimeni facilities (Baneng and Waverly) with 46q former Esidimeni patients at Weskoppies, Sterkfontein and other public institutions. Including the 275 children at Baneng, there is an estimated 1064 patients at private health care facilities, costing the state approximately, R190 million a year.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

---

<sup>1</sup> <http://da-gpl.co.za/patients-at-esidimeni-baneng-centre-get-good-care-in-privatepublic-partnership/>

## Transfers to NGOs for Mental Health Care

Gauteng Province has a considerable number of licensed NGOs providing care for both children and adults with intellectual disabilities and severe mental disorders. In 2016/17 services were being provided for 5,230 mental health users with expenditure amounting to 186 million.

Total No. of Clients licensed for	Budget allocation for 16/17 (ZAR, FY 2016/17)
5,230	185,964,168

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Mental Health Medication Availability

Drug Name & Duration of Stock-out Reported				
	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
PRIMARY CARE				

**Drug Name & Duration of Stock-out Reported**

	<b>&lt; 1 month</b>	<b>1 – 3 months</b>	<b>3 – 6 months</b>	<b>Not Routinely Available</b>
<b>DISTRICT HOSPITAL</b>				AceTylcysteine (1/3 Districts) Charcoal (activated) (1/3 Districts) Clonidine (1/3 Districts) Flupentixol (1/3 Districts) Fluphenazine (1/3 Districts) Lofexidine (1/3 Districts) Methadone (1/3 Districts) Morphine (1/3 Districts) Povidoneiodine (1/3 Districts) Silver sulfadiazine (1/3 Districts) Sodium Chloride (1/3 Districts) VK1(phytomenodione) (1/3 Districts)
<b>REGIONAL HOSPITAL</b>		AceTylcysteine (1/1 Hospital) Morphine (1/1 Hospital)	Methadone (1/1 Hospital)	Buprenorphine (1/1 Hospital) Clonidine (1/1 Hospital) Fluphenazine (1/1 Hospital) Lofexidine (1/1 Hospital) Nicotinamine (vB3) (1/1 Hospital)
<b>SPECIALIZED PSYCHIATRIC HOSPITAL</b>				AceTylcysteine (2/3 Hospitals) Buprenorphine (1/3 Hospitals) Charcoal (activated) (1/3 Hospitals) Clonidine (1/3 Hospitals) Lithium (1/3 Hospitals) Lofexidine (1/3 Hospitals) Methadone (1/3 Hospitals) Morphine (1/3 Hospitals) Naloxone (1/3 Hospitals) Nicotinamine (vB3) (1/3 Hospitals) Phenobarbitone (1/3 Hospitals) VK1(phytomenodione) (1/3 Hospitals)

## Facility-level Costing Results

### Gauteng: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Length of Stay (ALoS), days	Average Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
gp Bertha Gxowa Hospital	2,361	218.0	7.5	7.5	1,635	3,860,271	3,860,271	3,860,271
gp Bheki Mlangeni District Hospital	3,047	0.0	4.4	6.6	0	0	0	0
gp Bronkhorstspuit Hospital	2,832	22.0	2.6	3.9	57	161,995	244,613	203,304
gp Carletonville Hospital	3,351	0.0	5.2	7.9	0	0	0	0
gp Dr Yusuf Dadoo Hospital	3,351	0.0	3.6	5.4	0	0	0	0
gp Heidelberg Hospital	2,953	337.0	3.6	5.4	1,213	3,582,107	5,408,982	4,495,544
gp Jubilee Hospital	2,832	556.0	19.0	19.0	10,564	29,918,186	29,918,186	29,918,186
gp Kopanong Hospital	2,953	693.0	4.4	6.6	3,049	9,003,100	13,594,681	11,298,891
gp Odi Hospital	2,832	23.0	5.6	5.6	129	364,773	364,773	364,773
gp Pretoria West Hospital	2,832	448.0	2.2	2.2	986	2,791,307	2,791,307	2,791,307
gp South Rand Hospital	3,047	973.0	5.3	8.0	5,157	15,713,465	23,727,332	19,720,399
gp Tshwane District Hospital	2,832	1,000.0	8.5	8.5	8,500	24,072,755	24,072,755	24,072,755
<b>TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>						<b>89,467,959</b>	<b>103,982,900</b>	<b>96,725,429</b>

### Regional Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
gp Edenvale Hospital	4,103	0.0	4.3	20.4	0	0	0	0
gp Far East Rand Hospital	3,378	438.0	7.7	7.7	3,373	11,393,311	11,393,311	11,393,311
gp Leratong Hospital	2,015	900.0	6.4	30.3	5,760	11,608,200	55,022,868	33,315,534
gp Mamelodi Hospital	3,763	0.0	4.6	21.8	0	0	0	0
gp Pholosong Hospital	2,493	1,108.0	7.0	7.0	7,756	19,336,052	19,336,052	19,336,052
gp Rahima Moosa Hospital	4,244	0.0	3.2	15.2	0	0	0	0
gp Sebokeng Hospital	2,411	862.0	11.7	11.7	10,085	24,319,321	24,319,321	24,319,321
gp Tambo Memorial Hospital	2,658	414.0	14.3	14.3	5,920	15,735,179	15,735,179	15,735,179
gp Thelle Mogoerane Regional Hospital	2,442	0.0	6.5	30.8	0	0	0	0
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>						<b>82,392,063</b>	<b>125,806,731</b>	<b>104,099,397</b>

### Provincial Tertiary Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
gp Helen Joseph Hospital	3,168	675.0	6.8	9.5	4,590	14,540,410	20,313,809	17,427,109
gp Kalafong Hospital	3,527	669.0	5.1	5.1	3,412	12,033,427	12,033,427	12,033,427
gp Tembisa Hospital	2,292	509.0	14.0	14.0	7,126	16,334,666	16,334,666	16,334,666
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>						<b>42,908,503</b>	<b>48,681,901</b>	<b>45,795,202</b>

*National Central Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Inpatient Cost, ZAR (FY 2016/17)	Total
gp Charlotte Maxeke Hospital	4,043	714.0	66.0	66.0	47,124	190,544,440	190,544,440	190,544,440	
gp Chris Hani Baragwanath Hospital	4,188	1,384.0	8.2	36.5	11,349	47,529,018	211,804,749	129,666,884	
gp Dr George Mukhari Hospital	3,603	490.0	8.4	37.4	4,116	14,828,372	66,080,044	40,454,208	
gp Steve Biko Academic Hospital	4,821	0.0	8.7	38.8	0	0	0	0	
<b>TOTAL NATIONAL CENTRAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>						<b>252,901,830</b>	<b>468,429,233</b>	<b>360,665,532</b>	

*Specialized Psychiatric Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Inpatient Cost, ZAR (FY 2016/17)	Total
gp Sterkfontein Hospital	1,504	850.0	279.0	279.0	237,150	356,585,755	356,585,755	356,585,755	
gp Tara H Moross Centre Hospital	4,014	457.0	79.0	79.0	36,103	144,906,086	144,906,086	144,906,086	
gp Weskoppies Hospital	2,095	2,266.0	127.4	127.4	288,620	604,598,218	604,598,218	604,598,218	
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>						<b>1,106,090,059</b>	<b>1,106,090,059</b>	<b>1,106,090,059</b>	



### Other Specialized Hospitals Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, Total Mental Average Length of Sensitivity: Total Total Inpatient Cost, Sensitivity: Average Total	ZAR	Health Admissions	Stay (ALoS), days	Average Length of Stay (ALoS), days	Inpatient Days	ZAR	Total Inpatient Cost, ZAR	Total Inpatient Cost, ZAR	Total Inpatient Cost, ZAR
	(FY 2016/17)	(FY 2016/17)					(FY 2016/17)	(FY 2016/17)	(FY 2016/17)	(FY 2016/17)
gp Cullinan Care Rehab Centre	2,379	467.0	328.9	328.9	153,596	365,380,371	365,380,371	365,380,371	365,380,371	365,380,371
TOTAL OTHER SPECIALIZED HOSPITAL INPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR							365,380,371	365,380,371	365,380,371	365,380,371

## Gauteng: Outpatient Costs of Mental Health Services by Service Level

### Primary Health Care Outpatient Mental Health Costs

(Community Health & Day Centers, Clinics and Mobiles)

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp City of Ekurhuleni Metropolitan Municipality	48,123	109,206	55,319,141
gp City of Johannesburg Metropolitan Municipality	58,399	148,189	71,521,570
gp City of Tshwane Metropolitan Municipality	42,403	67,708	35,012,520
gp Sedibeng District Municipality	22,388	40,094	21,372,176
gp West Rand District Municipality	25,396	27,539	14,273,005
TOTAL: Primary Health Care Outpatient Mental Health Costs, Gauteng Province, (FY 2016/17) ZAR			197,498,411

### District Hospital Outpatient Mental Health Costs

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Bertha Gxowa Hospital	787	0	0
gp Bheki Mlangeni District Hospital	1,016	0	0
gp Bronkhorstspuit Hospital	944	0	0
gp Carletonville Hospital	1,117	0	0
gp Dr Yusuf Dadoo Hospital	1,117	0	0
gp Heidelberg Hospital	984	0	0

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Jubilee Hospital	944	3,476	3,281,447
gp Kopanong Hospital	984	0	0
gp Odi Hospital	944	309	291,705
gp Pretoria West Hospital	944	303	286,041
gp South Rand Hospital	1,016	0	0
gp Tshwane District Hospital	944	0	0
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>			<b>3,859,193</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Edenvale Hospital	1,368	0	0
gp Far East Rand Hospital	1,126	0	0
gp Leratong Hospital	672	0	0
gp Mamelodi Hospital	1,254	0	0
gp Pholosong Hospital	831	0	0
gp Rahima Moosa Hospital	1,415	0	0
gp Sebokeng Hospital	804	742	596,405
gp Tambo Memorial Hospital	886	0	0
gp Thelle Mogoerane Regional Hospital	814	0	0
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>			<b>596,405</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Helen Joseph Hospital	1,056	0	0
gp Kalafong Hospital	1,176	0	0
gp Tembisa Hospital	764	0	0
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR</b>			<b>0</b>

*National Central Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Charlotte Maxeke Hospital	1,348	5,242	7,065,288
gp Chris Hani Baragwanath Hospital	1,396	0	0
gp Dr George Mukhari Hospital	1,201	0	0
gp Steve Biko Academic Hospital	1,607	0	0
TOTAL NATIONAL CENTRAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR			7,065,288

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Sterkfontein Hospital	501	623	312,254
gp Tara H Moross Centre Hospital	1,338	14,307	19,141,266
gp Weskoppies Hospital	698	38,424	26,830,028
TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR			46,283,548

*Other Specialized Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
gp Cullinan Care Rehab Centre	793	117	92,775
TOTAL OTHER SPECIALIZED HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, GAUTENG PROVINCE, (FY 2016/17) ZAR			92,775

## Gauteng: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	197,498,411	392,736				503	197,498,411	8.5%
District Hospital	3,859,193	4,088	96,725,429	4,270	22,652	944	100,584,622	4.3%
Regional Hospital	596,405	742	104,099,397	3,722	27,969	804	104,695,802	4.5%
Provincial Tertiary Hospital			45,795,202	1,853	24,714		45,795,202	2.0%
National Central Hospital	7,065,288	5,242	360,665,532	2,588	139,361	1,348	367,730,820	15.8%
Specialized Psychiatric Hospital	46,283,548	53,354	1,106,090,059	3,573	309,569	867	1,152,373,607	49.4%
Other Specialized Hospital	92,775	117	365,380,371	467	782,399	793	365,473,146	15.7%
ALL SERVICE LEVEL(S)	255,395,620	456,279	2,143,318,856	16,473	130,111	560	2,334,151,610	100.0%

## Gauteng: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Gauteng Province	2,334,151,610	89.1%	10.9%	37,408,057,000	6.2%	10,033,839	233

## Gauteng: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			89.5%	10.5%
District Hospital	95.8%	4.2%	Data not available	
Regional Hospital	8%	92%	Data not available	
Provincial Tertiary Hospital	99.9%	0.1%	Data not available	
National Central Hospital	99.6%	0.4%	99.7%	0.3%
Specialized Psychiatric Hospital	95.5%	4.5%		
Other Specialized Hospital	80.9%	19.1%	76.9%	23.1%
ALL SERVICE LEVEL(S)	95.1%	4.9%	88.8%	10.5%

## Gauteng: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions ZAR (FY 2016/17)
District Hospital	21.6%	21,726,278
Regional Hospital	29.9%	31,304,045
Provincial Tertiary Hospital	29.3%	13,417,994
National Central Hospital	5.6%*	20,592,926
Specialized Psychiatric Hospital	25.5%	293,855,270
ALL SERVICE LEVEL(S)	24.2%	518,683,163

\*Admitted within three months of previous discharge

\*only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: KwaZulu-Natal

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in KwaZulu-Natal amounted to ZAR 1,831 million, of which 82.3% was spent on inpatient mental health care and 17.7% was spent on outpatient mental health care. A total of 580,915 outpatient mental health visits and 19,011 inpatient mental health admissions were reported over this period.

KwaZulu-Natal therefore allocated approximately 5.0% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R192. In the KwaZulu-Natal province, 28.6% of costs emanate from the Regional hospital service level, followed by 27.6% of costs from the Specialized Psychiatric hospital service level and 20.4% from the Tertiary hospital service level. KwaZulu-Natal spent approximately 8.1% of its overall mental health spending on Primary care services for mental health, with 13.3% and 2.1%, respectively being spent at the District hospital and Other Specialized hospital service levels.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the KwaZulu-Natal, readmissions during the 2016/17 financial year are estimated to have cost 405 million Rands, or 22% of the overall mental health expenditure for the province.

On average, 88.5% of inpatient mental health admissions in KwaZulu-Natal were for adults aged 18 years and older, with 11.5% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the KwaZulu-Natal was 94.9%,

compared to only 5.1% of those under 18 years, however outpatient data disaggregated by age was not available for the Specialized Psychiatric hospital service level.

## Transfers to Contracted Hospitals for Mental Health Care

KwaZulu-Natal reported three contracted hospitals, with an annual budget of R153,755,158.

Contracted Hospitals	Annual Budget (ZAR, FY2016/17)
Mountain View Hospital	4,875,972
Siloah Hospital	12,425,389
St Mary's Hospital (Marianhill)	136,453,797
<b>TOTAL</b>	<b>153,755,158</b>

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

In 2016/2017, KwaZulu-Natal spent R13,6 million on community-based services. Other types of support services provided include pre-discharge relapse prevention, psychoeducation and adherence counselling provided by Occupational Therapists, Social workers and Psych nurses in the clinics, psychosocial and adherence counseling, and support groups provided by psych nurses for depression schizophrenia and substance abuse. Furthermore, the Community Care givers, and occasionally nurses visit mental health care users in the home for further support as well as tracing of patients.

Total No. of Clients licensed for	Budget allocation for 16/17 (ZAR, FY 2016/17)
773	13,583,192

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Mental Health Medication Availability

### Drug Name & Duration of Stock-out Reported

	PRIMARY CARE			
	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
	AmiTriptyline (2/7 Districts) Carbamazepine (2/7 Districts) Diazepam (1/7 Districts) Phenobarbitone (1/7 Districts) Valproate (1/7 Districts)	Haloperidol (1/7 Districts) Phenytoin (1/7 Districts)	Carbamazepine (1/7 Districts) Phenobarbitone (1/7 Districts)	AceTylcysteine (2/7 Districts) Biperidan (3/7 Districts) Buprenorphine (5/7 Districts) Chlorpromazine (1/7 Districts) Citalopram (1/7 Districts) Clonazepam (2/7 Districts) Clonidine (5/7 Districts) Clozapine (3/7 Districts) Flupentixol (1/7 Districts) Fluphenazine (3/7 Districts) Haloperidol (1/7 Districts) Lamotrigine (2/7 Districts) Lithium (3/7 Districts) Lofexidine (5/7 Districts) Lorazepam (3/7 Districts) Methadone (6/7 Districts) Methylphenidate (4/7 Districts) Morphine (1/7 Districts) Nicotinamine (vB3) (3/7 Districts) Risperidone (2/7 Districts) Valproate (1/7 Districts)



DISTRICT HOSPITAL	AceTylcysteine (2/7 Districts) Biperidan (1/7 Districts) Charcoal (activated) (1/7 Districts) Clozapine (1/7 Districts) Diazepam (1/7 Districts) Epinephrine(adrenaline) (1/7 Districts) Fluoxetine (2/7 Districts) Lithium (1/7 Districts) Lorazepam (2/7 Districts) Methylphenidate (3/7 Districts) Valproate (1/7 Districts)	Chlorpromazine (1/7 Districts) Citalopram (1/7 Districts) Clonazepam (1/7 Districts) Clonidine (1/7 Districts) Epinephrine(adrenaline) (1/7 Districts) Fluoxetine (1/7 Districts) Fluphenazine (1/7 Districts) Haloperidol (1/7 Districts) Phenytoin (1/7 Districts)	Biperidan (1/7 Districts) Carbamazepine (1/7 Districts) Clonidine (1/7 Districts) Flupentixol (1/7 Districts) Fluphenazine (1/7 Districts) Haloperidol (1/7 Districts) Phenobarbitone (1/7 Districts) Risperidone (1/7 Districts)	Buprenorphine (5/7 Districts) Clonidine (3/7 Districts) Clozapine (1/7 Districts) Fluphenazine (2/7 Districts) Lofexidine (5/7 Districts) Methadone (5/7 Districts) Methylphenidate (1/3 Districts) Nicotinamine (vB3) (3/7 Districts) Risperidone (1/7 Districts)
REGIONAL HOSPITAL	AceTylcysteine (2/4 Hospitals) Atropine (1/4 Hospitals) Biperidan (1/4 Hospitals) Charcoal (activated) (3/4 Hospitals) Citalopram (2/4 Hospitals) Clonazepam (1/4 Hospitals) Fluoxetine (1/4 Hospitals) Fluphenazine (1/4 Hospitals) Haloperidol (1/4 Hospitals) Lithium (2/4 Hospitals) Lorazepam (1/4 Hospitals) Orphenadrine (1/4 Hospitals) Phenobarbitone (1/4 Hospitals) Zuclopenthixol (1/4 Hospitals)	Clonidine (1/4 Hospitals) Clozapine (1/4 Hospitals) Lithium (1/4 Hospitals) Lorazepam (1/4 Hospitals) Naloxone (1/4 Hospitals) Risperidone (2/4 Hospitals) Zuclopenthixol (1/4 Hospitals)		Biperidan (1/4 Hospitals) Buprenorphine (3/4 Hospitals) Clonidine (3/4 Hospitals) Fluphenazine (1/4 Hospitals) Lofexidine (3/4 Hospitals) Methadon (3/4 Hospitals) VK1(phytomenodione) (1/4 Hospitals)
TERTIARY HOSPITAL		Phenobarbitone (1/2 Hospitals)		

**SPECIALIZED PSYCHIATRIC HOSPITAL**

	<b>Carbamazepine (1/3 Hospitals)</b> <b>Citalopram (2/3 Hospitals)</b> <b>Lithium (1/3 Hospitals)</b> <b>Lorazepam (1/3 Hospitals)</b> <b>Risperidone (1/3 Hospitals)</b> <b>Valproate (1/3 Hospitals)</b>	<b>Biperidan (1/3 Hospitals)</b>	<b>AceTylcysteine (1/3 Hospitals)</b> <b>Buprenorphine (2/3 Hospitals)</b> <b>Lofexidine (2/3 Hospitals)</b> <b>Methadone (2/3 Hospitals)</b> <b>Morphine (2/3 Hospitals)</b> <b>Nicotinamine (vB3) (2/3 Hospitals)</b> <b>VK1(phytomenodione) (1/3 Hospitals)</b>
--	---	----------------------------------	--

## Facility-level Costing Results

### KwaZulu-Natal: Inpatient Costs of Mental Health Services by Service Level

*District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Appelsbosch Hospital	2,222	99.0	6.3	9.5	624	1,385,840	2,092,618	1,739,229
kz Benedictine Hospital	2,627	255.0	25.4	25.4	6,477	17,015,496	17,015,496	17,015,496
kz Bethesda Hospital	2,884	98.0	4.3	6.5	421	1,215,235	1,835,006	1,525,120
kz Catherine Booth Hospital	2,512	20.0	0.2	0.2	4	10,049	10,049	10,049
kz Ceza Hospital	2,627	65.0	6.6	10.0	429	1,127,011	1,701,786	1,414,398
kz Charles Johnson Memorial Hospital	2,598	162.0	13.7	13.7	2,219	5,766,031	5,766,031	5,766,031
kz Christ the King Hospital	2,685	123.0	4.4	6.6	541	1,453,157	2,194,267	1,823,712
kz Church of Scotland Hospital	2,598	118.0	13.8	13.8	1,628	4,230,605	4,230,605	4,230,605
kz Dundee Hospital	2,598	221.0	4.9	7.4	1,083	2,813,389	4,248,217	3,530,803
kz East Griqualand and Usher Memorial Hospital	2,685	107.0	4.8	7.2	514	1,379,049	2,082,364	1,730,707
kz Ekhombe Hospital	2,512	55.0	4.1	4.1	226	566,488	566,488	566,488
kz Emmaus Hospital	2,749	187.0	5.0	7.6	935	2,570,025	3,880,737	3,225,381
kz Eshowe Hospital	2,512	113.0	0.9	0.9	102	255,485	255,485	255,485
kz Estcourt Hospital	2,749	742.0	5.5	8.3	4,081	11,217,402	16,938,277	14,077,840
kz GJ Crooke's Hospital	2,403	335.0	5.5	8.3	1,843	4,426,881	6,684,590	5,555,735
kz Greytown Hospital	2,598	80.0	5.8	8.8	464	1,205,478	1,820,272	1,512,875
kz Hlabisa Hospital	2,884	160.0	4.8	7.2	768	2,214,762	3,344,291	2,779,527
kz Itshelejuba Hospital	2,627	186.0	6.0	6.0	1,116	2,931,804	2,931,804	2,931,804
kz KwaMagwaza Hospital	2,512	80.0	14.6	14.6	1,168	2,934,181	2,934,181	2,934,181
kz Manguzi Hospital	2,884	133.0	6.7	10.1	891	2,569,759	3,880,336	3,225,047
kz Mbongolwane Hospital	2,512	86.0	15.0	15.0	1,290	3,240,662	3,240,662	3,240,662
kz McCords Hospital	1,992	0.0	5.4	8.2	0	0	0	0

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Montebello Hospital	3,618	64.0	5.2	5.2	333	1,204,027	1,204,027	1,204,027
kz Mosvold Hospital	2,884	100.0	5.5	8.3	550	1,586,093	2,395,000	1,990,546
kz Mseleni Hospital	2,884	76.0	5.7	8.6	433	1,249,264	1,886,389	1,567,827
kz Murchison Hospital	2,403	600.0	6.3	9.5	3,780	9,082,013	13,713,840	11,397,926
kz Niemeyer Memorial Hospital	3,788	27.0	4.0	6.0	108	409,057	617,677	513,367
kz Nkandla Hospital	2,512	1,276.0	12.2	12.2	15,567	39,107,008	39,107,008	39,107,008
kz Nkonjeni Hospital	2,627	291.0	5.7	8.6	1,659	4,357,512	6,579,843	5,468,677
kz Northdale Hospital	2,222	422.0	5.1	7.7	2,152	4,782,114	7,220,992	6,001,553
kz Osindisweni Hospital	1,992	146.0	19.5	19.5	2,847	5,671,412	5,671,412	5,671,412
kz Rietvlei Hospital	2,685	238.0	5.1	7.7	1,214	3,259,132	4,921,289	4,090,210
kz St Andrew's Hospital	2,403	108.0	5.2	7.9	562	1,349,328	2,037,485	1,693,406
kz St Apollinaris Hospital	2,685	128.0	5.8	8.8	742	1,993,392	3,010,022	2,501,707
kz St Mary's Hospital (Mariannhill)	1,992	8.0	4.1	6.2	33	65,340	98,663	82,001
kz Umphumulo Hospital	3,618	183.0	12.3	12.3	2,251	8,143,464	8,143,464	8,143,464
kz Untunjambili Hospital	3,618	132.0	7.0	7.0	924	3,342,912	3,342,912	3,342,912
kz Vryheid Hospital	2,627	297.0	13.5	13.5	4,010	10,533,215	10,533,215	10,533,215
kz Wentworth Hospital	1,992	242.0	12.9	12.9	3,122	6,218,832	6,218,832	6,218,832
TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR						172,882,904	204,355,632	188,619,268

### Regional Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Addington Hospital	3,017	249	5.3	25.1	1,320	3,981,584	18,872,709	11,427,147
kz Edendale Hospital	2,846	1,614	20.0	20.0	32,280	91,857,647	91,857,647	91,857,647
kz Ladysmith Hospital	2,638	17	6.3	29.9	107	282,494	1,339,021	810,757
kz Madadeni Hospital	2,954	735	12.0	56.9	8,820	26,058,652	123,518,010	74,788,331
kz Mahatma Gandhi Hospital	2,628	1,107	4.8	22.8	5,314	13,963,151	66,185,334	40,074,243
kz Newcastle Hospital	3,367	3	3.9	18.5	12	39,399	186,754	113,077
kz Port Shepstone Hospital	3,466	460	4.2	4.2	1,932	6,695,744	6,695,744	6,695,744
kz Prince Mshiyeni Memorial Hospital	2,408	333	6.7	31.8	2,231	5,372,133	25,463,910	15,418,022
kz Queen Nandi Regional Hospital	3,736	1	5.4	25.6	5	20,176	95,634	57,905
kz RK Khan Hospital	2,523	1,724	42.0	42.0	72,408	182,652,287	182,652,287	182,652,287
kz St Aidans Hospital	8,304	0	5.6	26.5	0	0	0	0
kz Stanger Hospital	2,691	353	5.5	26.1	1,942	5,224,096	24,762,214	14,993,155
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>						<b>336,147,363</b>	<b>541,629,265</b>	<b>438,888,314</b>

### Provincial Tertiary Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Grey's Hospital	6,064	1,679	10.5	14.7	17,630	106,911,027	149,675,437	128,293,232
kz King Edward VIII Hospital	3,875	42	6.4	9.0	269	1,041,523	1,464,642	1,253,083
kz Ngwelezana Hospital	3,545	890	74.0	74.0	65,860	233,498,815	233,498,815	233,498,815
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>						<b>341,451,364</b>	<b>384,638,894</b>	<b>363,045,129</b>

*National Central Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Inkosi Albert Luthuli Central Hospital	8,129	0	8.7	38.8	0	0	0	0
<b>TOTAL NATIONAL CENTRAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>						<b>0</b>	<b>0</b>	<b>0</b>

*Specialized Psychiatric Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Ekuhlengeni Sanatorium Hospital	480	97	360.0	360.0	34,920	16,770,796	16,770,796	16,770,796
kz Fort Napier Hospital	1,626	292	291.5	291.5	85,118	138,438,425	138,438,425	138,438,425
kz St Francis Hospital	5,659	0	15.8	13.6	0	0	0	0
kz Townhill Hospital	3,044	723	101.2	101.2	73,131	222,584,513	222,584,513	222,584,513
kz Umgeni Waterfall Institute Hospital	999	24	360.0	360.0	8,640	8,629,147	8,629,147	8,629,147
kz Umzimkhulu Hospital	1,050	634	165.9	165.9	105,181	110,450,615	110,450,615	110,450,615
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>						<b>496,873,496</b>	<b>496,873,496</b>	<b>496,873,496</b>

### Other Specialized Hospitals Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
kz Clairwood Hospital	1,715	0	19.4	75.9	0	0	0	0
kz King Dinuzulu Hospital	2,538	271	11.7	45.7	3,171	8,045,992	31,459,828	19,752,910
kz KwaZulu-Natal Children's Hospital	12,047	0	0.0	0.0	0	0	0	0
kz Siloah Lutheran Mission Hospital	1,365	0	17.4	68.0	0	0	0	0
<b>TOTAL OTHER SPECIALIZED HOSPITAL INPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>						<b>8,045,992</b>	<b>31,459,828</b>	<b>19,752,910</b>

## KwaZulu-Natal: Outpatient Costs of Mental Health Services by Service Level

### Primary Health Care Outpatient Mental Health Costs

(Community Health & Day Centers, Clinics and Mobiles)

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Amajuba District Municipality	14,663	12,973	5,594,746
kz eThekweni Metropolitan Municipality	58,438	206,097	72,993,599
kz Harry Gwala District Municipality	25,751	15,293	7,032,236
kz iLembe District Municipality	17,994	15,287	5,730,863
kz King Cetshwayo District Municipality	31,889	16,180	6,142,492
kz Ugu District Municipality	30,021	21,999	9,434,631
kz uMgungundlovu District Municipality	27,913	43,433	17,075,121
kz Umkhanyakude District Municipality	31,451	12,919	5,346,331
kz Umzinyathi District Municipality	33,213	15,279	7,574,027
kz Uthukela District Municipality	24,433	13,997	6,218,089
kz Zululand District Municipality	40,054	14,068	5,931,304
<b>TOTAL: Primary Health Care Outpatient Mental Health Costs, KwaZulu-Natal Province, (FY 2016/17) ZAR</b>			<b>149,073,438</b>

*District Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Appelsbosch Hospital	741	0	0
kz Benedictine Hospital	876	10,711	9,379,495
kz Bethesda Hospital	961	612	588,296
kz Catherine Booth Hospital	837	258	216,044
kz Ceza Hospital	876	0	0
kz Charles Johnson Memorial Hospital	866	12	10,392
kz Christ the King Hospital	895	264	236,286
kz Church of Scotland Hospital	866	100	86,600
kz Dundee Hospital	866	178	154,149
kz East Griqualand and Usher Memorial Hospital	895	0	0
kz Ekhombe Hospital	837	147	123,095
kz Emmaus Hospital	916	123	112,696
kz Eshowe Hospital	837	3,782	3,166,973
kz Estcourt Hospital	916	4,346	3,981,935
kz GJ Crooke's Hospital	801	4,145	3,319,660
kz Greytown Hospital	866	2,200	1,905,210
kz Hlabisa Hospital	961	16	15,380
kz Itshelejuba Hospital	876	921	806,509
kz KwaMagwaza Hospital	837	3	2,512
kz Manguzi Hospital	961	2,575	2,475,266
kz Mbongolwane Hospital	837	287	240,328
kz McCords Hospital	664	0	0
kz Montebello Hospital	1,206	819	987,679
kz Mosvold Hospital	961	276	265,310
kz Mseleni Hospital	961	0	0
kz Murchison Hospital	801	3,470	2,779,064
kz Niemeyer Memorial Hospital	1,263	0	0
kz Nkandla Hospital	837	2,063	1,727,516
kz Nkonjeni Hospital	876	639	559,565
kz Northdale Hospital	741	0	0
kz Osindisweni Hospital	664	7,597	5,044,576
kz Rietvlei Hospital	895	625	559,388



Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz St Andrew's Hospital	801	451	361,198
kz St Apollinaris Hospital	895	540	483,312
kz St Mary's Hospital (Mariannhill)	664	0	0
kz Umphumulo Hospital	1,206	2,747	3,312,763
kz Untunjambili Hospital	1,206	184	221,896
kz Vryheid Hospital	876	1,813	1,587,623
kz Wentworth Hospital	664	15,129	10,045,990
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>54,756,706</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Addington Hospital	1,006	7,479	7,521,474
kz Edendale Hospital	949	3,268	3,099,864
kz Ladysmith Hospital	879	7,324	6,439,416
kz Madadeni Hospital	985	29,323	28,878,226
kz Mahatma Gandhi Hospital	876	465	407,311
kz Newcastle Hospital	1,122	0	0
kz Port Shepstone Hospital	1,155	5,239	6,052,278
kz Prince Mshiyeni Memorial Hospital	803	29,957	24,043,893
kz Queen Nandi Regional Hospital	1,245	409	509,381
kz RK Khan Hospital	841	2,062	1,733,828
kz St Aidans Hospital	2,768	0	0
kz Stanger Hospital	897	6,411	5,750,138
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>84,435,809</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Grey's Hospital	2,021	1,672	3,379,851
kz King Edward VIII Hospital	1,292	0	0
kz Ngwelezana Hospital	1,182	5,720	6,759,860
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>10,139,711</b>

*National Central Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Inkosi Albert Luthuli Central Hospital	2,710	0	0
<b>TOTAL NATIONAL CENTRAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>0</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Ekuhlengeni Sanatorium Hospital	160	0	0
kz Fort Napier Hospital	542	689	373,537
kz St Francis Hospital	1,886	0	0
kz Townhill Hospital	1,015	5,842	5,926,947
kz Umgeni Waterfall Institute Hospital	333	0	0
kz Umzimkhulu Hospital	350	651	227,873
kz Ekuhlengeni Sanatorium Hospital	160	0	0
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>6,528,356</b>

*Other Specialized Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
kz Clairwood Hospital	572	53	30,303
kz King Dinuzulu Hospital	846	19,011	16,080,818
kz KwaZulu-Natal Children's Hospital	4,016	749	3,007,654
kz Siloah Lutheran Mission Hospital	455	33	15,012
<b>TOTAL OTHER SPECIALIZED HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, KWAZULU-NATAL PROVINCE, (FY 2016/17) ZAR</b>			<b>19,133,787</b>

## KwaZulu-Natal: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	149,073,438	387,525				385	149,073,438	8.1%
District Hospital	54,756,706	67,033	188,619,268	7,763	24,297	817	243,375,974	13.3%
Regional Hospital	84,435,809	91,937	438,888,314	6,596	66,539	918	523,324,123	28.6%
Provincial Tertiary Hospital	10,139,711	7,392	363,045,129	2,611	139,044	1,372	373,184,840	20.4%
National Central Hospital							0	0.0%
Specialized Psychiatric Hospital	6,528,356	7,182	496,873,496	1,770	280,719	909	503,401,852	27.5%
Other Specialized Hospital	19,133,787	19,846	19,752,910	271	72,889	964	38,886,697	2.1%
<b>ALL SERVICE LEVEL(S)</b>	<b>324,067,807</b>	<b>580,915</b>	<b>1,507,179,117</b>	<b>19,011</b>	<b>79,279</b>	<b>558</b>	<b>1,831,246,924</b>	<b>100.0%</b>

## KwaZulu-Natal: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
KwaZulu-Natal Province	1,831,246,924	82.3%%	17.7%	36,578,637,000	5.0%	9,562,858	192

## KwaZulu-Natal: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			95.4%	4.6%
District Hospital	92.8%	7.2%	89.8%	10.2%
Regional Hospital	88.3%	11.7%	83.9%	16.1%
Provincial Tertiary Hospital	81.5%	18.5%	57.6%	42.4%
National Central Hospital				
Specialized Psychiatric Hospital	70.1%	29.9%	Data not available	
Other Specialized Hospital	91.5%	8.5%	71.3%	28.7%
ALL SERVICE LEVEL(S)	88.5%	11.5%	94.9%	5.1%

## KwaZulu-Natal: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions ZAR (FY 2016/17)
District Hospital	21.6%	40,741,762
Regional Hospital	29.9%	131,227,606
Provincial Tertiary Hospital	29.3%	106,372,223
National Central Hospital	5.6% <sup>+</sup>	
Specialized Psychiatric Hospital	25.5%	126,702,741
ALL SERVICE LEVEL(S)	24.2%	443,161,756

\*Admitted within three months of previous discharge

<sup>+</sup>only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: Limpopo

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in Limpopo amounted to ZAR 422 million, of which 70.2% was spent on inpatient mental health care and 29.8% was spent on outpatient mental health care. A total of 240,443 outpatient mental health visits and 8,023 inpatient mental health admissions were reported over this period.

Limpopo therefore allocated approximately 2.6% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R79.5. In the Limpopo province, 50.2% of costs emanate from the District hospital service level, followed by 19.9% of costs from the Regional hospital service level and 11.6% and 11.1%, respectively from the Tertiary hospital and Primary Care service levels. Specialized Psychiatric hospital service level costs in Limpopo represented only 7.2% of its overall mental health for the 2016/17 financial year.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Limpopo, readmissions during the 2016/17 financial year are estimated to have cost 74 million Rands, or 17% of the overall mental health expenditure for the province.

On average, 96.9% of inpatient mental health admissions in Limpopo were for adults aged 18 years and older, with only 3.1% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Limpopo was 96.4%, compared to only 3.6% of those under 18 years.

## Transfers to Contracted Hospitals for Mental Health Care

Provincial respondents from Limpopo were not able to specify transfers to contracted hospitals for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

Provincial respondents from Limpopo were not able to specify transfers to NGOs for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

# Mental Health Medication Availability

## Drug Name & Duration of Stock-out Reported

	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
<b>PRIMARY CARE</b>	Fluphenazine (1/5 Districts) Haloperidol (1/5 Districts) Hydracortisone (1/5 Districts) Orphenadrine (1/5 Districts) Sodium Chloride (1/5 Districts) Thiamine (1/5 District)		Charcoal (activated) (1/5 Districts) Fluphenazine (1/5 Districts) Haloperidol (1/5 Districts)	AceTylcysteine (2/5 Districts) AmiTriptyline (2/5 Districts) Biperidan (2/5 Districts) Buprenorphine (2/5 Districts) Chlorpromazine (2/5 Districts) Citalopram (2/5 Districts) Clonazepam (2/5 Districts) Clonidine (2/5 Districts) Clozapine (2/5 Districts) Fluoxetine (1/5 Districts) Lamotrigine (2/5 Districts) Lithium (2/5 Districts) Lofexidine (2/5 Districts) Lorazepam (2/5 Districts) Methadone (2/5 Districts) Methylphenidate (2/5 Districts) Morphine (2/5 Districts) Naloxone (1/5 Districts) Phenobarbitone (2/5 Districts) Phenytoin (1/5 Districts) Risperidone (2/5 Districts) Silver sulfadiazine (1/5 Districts) Valproate (2/5 Districts)
<b>DISTRICT HOSPITAL</b>	AmiTriptyline (1/5 Districts) Atropine (1/5 Districts) Carbamazepine (1/5 Districts) Citalopram (1/5 Districts) Epinephrine(adrenaline) (1/5 Districts) Fluoxetine (1/5 Districts) Fluphenazine (1/5 Districts) Haloperidol (2/5 Districts) Naloxone (1/5 Districts) Phenobarbitone (1/5 Districts) Phenytoin (1/5 Districts) Risperidone (1/5 Districts)	Clonazepam (1/5 Districts) Flupentixol (1/5 Districts) Phenobarbitone (1/5 Districts) Povidoneiodine (1/5 Districts)	AceTylcysteine (1/5 Districts) Biperidan (1/5 Districts) Charcoal (activated) (2/5 Districts) Chlorpromazine (1/5 Districts) Methadone (1/5 Districts) Morphine (1/5 Districts) Sodium Chloride (1/5 Districts) Thiamine (1/5 Districts)	Buprenorphine (1/5 Districts) Clonidine (1/5 Districts) Lofexidine (1/5 Districts) Methadone (1/5 Districts)



REGIONAL HOSPITAL			Diazepam (1/3 Hospitals)	
	AmiTriptyline 1/2 Hospitals) Diazepam 1/2 Hospitals) Flupentixol 1/2 Hospitals) Hydracortisone 1/2 Hospitals) Lorazepam 1/2 Hospitals) Methylphenidate 1/2 Hospitals) Thiamine 1/2 Hospitals)	Morphine (1/3 Hospitals) Nicotinamine (vB3) (1/3 Hospitals) Phenobarbitone (1/3 Hospitals) Phenytoin (1/3 Hospitals)	Biperidan (1/3 Hospitals) Charcoal (activated) (1/3 Hospitals)	Biperidan (1/3 Hospitals) Buprenorphine (2/3 Hospitals) Clonidine (2/3 Hospitals) Fluphenazine (1/3 Hospitals) Lofexidine (2/3 Hospitals) Methadone (1/3 Hospitals)
	Citalopram (1/2 Hospitals)		Nicotinamine (vB3) (1/2 Hospitals)	AceTylcysteine (1/2 Hospitals) Atropine (1/2 Hospitals) Biperidan (1/2 Hospitals) Buprenorphine (1/2 Hospitals) Charcoal (activated) (1/2 Hospitals) Clonidine (1/2 Hospitals) Fluphenazine (1/2 Hospitals) Lofexidine (1/2 Hospitals) Methadone (1/2 Hospitals) Methylphenidate (1/2 Hospitals) Morphine (1/2 Hospitals) Naloxone (1/2 Hospitals) Nicotinamine (vB3) (1/2 Hospitals) VK1(phytomenodione) (1/2 Hospitals)

## Facility-level Costing Results

### Limpopo: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Ip Botlokwa Hospital	3,014	116	8.2	8.2	951	2,867,079	2,867,079	2,867,079
Ip Dilokong Hospital	2,859	143	4.1	6.2	586	1,676,043	2,530,825	2,103,434
Ip Donald Fraser Hospital	2,956	365	15.0	15.0	5,475	16,184,727	16,184,727	16,184,727
Ip Dr CN Phatudi Hospital	2,640	191	5.1	7.7	974	2,572,075	3,883,833	3,227,954
Ip Elim Hospital	2,956	485	15.0	15.0	7,275	21,505,734	21,505,734	21,505,734
Ip Ellisras Hospital	3,629	120	4.0	6.0	480	1,742,158	2,630,658	2,186,408
Ip FH Odendaal (Nylstroom) Hospital	3,629	78	3.4	5.1	265	962,542	1,453,439	1,207,990
Ip George Masebe Hospital	3,629	161	4.2	6.3	676	2,454,265	3,705,939	3,080,102
Ip Groblersdal Hospital	2,859	0	5.9	8.9	0	0	0	0
Ip Helene Franz Hospital	3,014	168	12.7	12.7	2,134	6,431,033	6,431,033	6,431,033
Ip Jane Furse Hospital	2,859	433	4.2	6.3	1,819	5,198,793	7,850,177	6,524,485
Ip Kgapane Hospital	2,640	288	4.9	7.4	1,411	3,726,221	5,626,594	4,676,408
Ip Lebowakgomo Hospital	3,014	151	11.4	11.4	1,721	5,188,592	5,188,592	5,188,592
Ip Louis Trichardt Hospital	2,956	19	2.0	2.0	38	112,332	112,332	112,332
Ip Malamulele Hospital	2,956	179	15.0	15.0	2,685	7,937,168	7,937,168	7,937,168
Ip Maphutha L Malatjie Hospital	2,640	269	4.7	7.1	1,264	3,338,337	5,040,890	4,189,614
Ip Matlala Hospital	2,859	173	53.5	53.5	9,256	26,458,498	26,458,498	26,458,498
Ip Mecklenburg Hospital	2,859	55	3.3	5.0	182	518,850	783,464	651,157
Ip Messina Hospital	2,956	56	1.0	1.0	56	165,542	165,542	165,542
Ip Nkhensani Hospital	2,640	341	4.3	6.5	1,466	3,871,711	5,846,284	4,858,997
Ip Sekororo Hospital	2,640	64	4.3	6.5	275	726,655	1,097,250	911,953
Ip Seshego Hospital	3,014	178	7.9	7.9	1,406	4,238,526	4,238,526	4,238,526
Ip Siloam Hospital	2,956	549	15.0	15.0	8,235	24,343,604	24,343,604	24,343,604

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Ip Thabazimbi Hospital	3,629	13	4.0	6.0	52	188,734	284,988	236,861
Ip Van Velden Memorial (Tzaneen) Hospital	2,640	63	4.7	7.1	296	781,841	1,180,580	981,211
Ip Voortrekker Memorial (Potgietersrus) Hospital	3,629	40	4.4	6.6	176	638,791	964,575	801,683
Ip Warmbaths Hospital	3,629	68	4.5	6.8	306	1,110,625	1,677,044	1,393,835
Ip WF Knobel Hospital	3,014	114	9.5	9.5	1,083	3,264,346	3,264,346	3,264,346
Ip Witpoort Hospital	3,629	13	3.7	5.6	48	174,579	263,614	219,096
Ip Zebediela Hospital	3,014	299	7.1	7.1	2,123	6,398,782	6,398,782	6,398,782
Ip Botlokwa Hospital	3,014	116	8.2	8.2	951	2,867,079	2,867,079	2,867,079
Ip Dilokong Hospital	2,859	143	4.1	6.2	586	1,676,043	2,530,825	2,103,434
Ip Donald Fraser Hospital	2,956	365	15.0	15.0	5,475	16,184,727	16,184,727	16,184,727
Ip Dr CN Phatudi Hospital	2,640	191	5.1	7.7	974	2,572,075	3,883,833	3,227,954
Ip Elim Hospital	2,956	485	15.0	15.0	7,275	21,505,734	21,505,734	21,505,734
Ip Ellisras Hospital	3,629	120	4.0	6.0	480	1,742,158	2,630,658	2,186,408
Ip FH Odendaal (Nylstroom) Hospital	3,629	78	3.4	5.1	265	962,542	1,453,439	1,207,990
Ip George Masebe Hospital	3,629	161	4.2	6.3	676	2,454,265	3,705,939	3,080,102
Ip Groblersdal Hospital	2,859	0	5.9	8.9	0	0	0	0
TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR						154,778,183	169,916,116	162,347,150

*Regional Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Ip Letaba Hospital	3,940	588	7.0	7.0	4,116	16,217,699	16,217,699	16,217,699
Ip Mokopane Hospital	3,853	256	30.0	30.0	7,680	29,591,242	29,591,242	29,591,242
Ip Philadelphia Hospital	1,930	164	6.5	30.8	1,066	2,057,175	9,751,008	5,904,091
Ip St Rita's Hospital	2,800	124	3.7	17.5	459	1,284,596	6,088,985	3,686,791
Ip Tshilidzini Hospital	2,719	567	5.1	5.1	2,892	7,863,959	7,863,959	7,863,959
Ip Letaba Hospital	3,940	588	7.0	7.0	4,116	16,217,699	16,217,699	16,217,699
Ip Mokopane Hospital	3,853	256	30.0	30.0	7,680	29,591,242	29,591,242	29,591,242
Ip Philadelphia Hospital	1,930	164	6.5	30.8	1,066	2,057,175	9,751,008	5,904,091
Ip St Rita's Hospital	2,800	124	3.7	17.5	459	1,284,596	6,088,985	3,686,791
Ip Tshilidzini Hospital	2,719	567	5.1	5.1	2,892	7,863,959	7,863,959	7,863,959
TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR						57,014,671	69,512,894	63,263,783

*Provincial Tertiary Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Ip Mankweng Hospital	3,561	621	18.4	18.4	11,426	40,684,544	40,684,544	40,684,544
Ip Pietersburg Hospital	3,520	60	14.0	14.0	840	2,956,500	2,956,500	2,956,500
TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR						43,641,045	43,641,045	43,641,045

*Specialized Psychiatric Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
Ip Evuxakeni Hospital	1,150	203	8.8	8.8	1,776	2,042,799	2,042,799	2,042,799
Ip Hayani Hospital	1,645	24	360.0	309.0	8,640	14,212,361	12,198,963	13,205,662
Ip Thabamopo Hospital	1,697	224	32.0	32.0	7,168	12,165,702	12,165,702	12,165,702
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR</b>						<b>28,420,863</b>	<b>26,407,464</b>	<b>27,414,163</b>

## Limpopo: Outpatient Costs of Mental Health Services by Service Level

*Primary Health Care Outpatient Mental Health Costs*

(Community Health & Day Centers, Clinics and Mobiles)

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Ip Capricorn District Municipality	39,309	55,229	16,201,670
Ip Mopani District Municipality	36,772	32,530	9,062,174
Ip Sekhukhune District Municipality	34,483	22,489	7,049,798
Ip Vhembe District Municipality	43,287	46,527	13,794,720
Ip Waterberg District Municipality	32,720	2,652	953,568
Ip Capricorn District Municipality	39,309	55,229	16,201,670
<b>TOTAL: Primary Health Care Outpatient Mental Health Costs, Limpopo Province, (FY 2016/17) ZAR</b>			<b>47,061,931</b>

*District Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Ip Botlokwa Hospital	1,005	718	721,391
Ip Dilokong Hospital	953	1,696	1,616,106
Ip Donald Fraser Hospital	985	1,544	1,521,414
Ip Dr CN Phatudi Hospital	880	0	0
Ip Elim Hospital	985	6,001	5,913,215
Ip Ellisras Hospital	1,210	350	423,441
Ip FH Odendaal (Nylstroom) Hospital	1,210	726	878,338
Ip George Masebe Hospital	1,210	218	263,743
Ip Groblersdal Hospital	953	33	31,445
Ip Helene Franz Hospital	1,005	2,120	2,130,013
Ip Jane Furse Hospital	953	2,399	2,285,990
Ip Kgapane Hospital	880	483	425,115
Ip Lebowakgomo Hospital	1,005	5,005	5,028,640
Ip Louis Trichardt Hospital	985	80	78,830
Ip Malamulele Hospital	985	4,713	4,644,056
Ip Maphutha L Malatjie Hospital	880	2,225	1,958,343
Ip Matlala Hospital	953	1,266	1,206,362
Ip Mecklenburg Hospital	953	191	182,003
Ip Messina Hospital	985	88	86,713
Ip Nkhensani Hospital	880	8,869	7,806,089
Ip Sekororo Hospital	880	1,323	1,164,444
Ip Seshego Hospital	1,005	2,269	2,279,717
Ip Siloam Hospital	985	1,663	1,638,673
Ip Thabazimbi Hospital	1,210	136	164,537
Ip Van Velden Memorial (Tzaneen) Hospital	880	596	524,572
Ip Voortrekker Memorial (Potgietersrus) Hospital	1,210	1,671	2,021,629
Ip Warmbaths Hospital	1,210	61	73,800
Ip WF Knobel Hospital	1,005	1,198	1,203,659
Ip Witpoort Hospital	1,210	1,218	1,473,575
Ip Zebediela Hospital	1,005	1,946	1,955,192
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR</b>			<b>49,701,044</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Ip Letaba Hospital	1,313	7,352	9,656,019
Ip Mokopane Hospital	1,284	1,028	1,320,304
Ip Philadelphia Hospital	643	5,026	3,233,071
Ip St Rita's Hospital	933	1,087	1,014,499
Ip Tshilidzini Hospital	906	6,279	5,691,900
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR</b>			<b>20,915,792</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Ip Mankweng Hospital	1,187	3,162	3,752,845
Ip Pietersburg Hospital	1,173	1,311	1,538,084
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR</b>			<b>5,290,929</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
Ip Evuxakeni Hospital	383	0	0
Ip Hayani Hospital	548	983	538,995
Ip Thabamoopo Hospital	566	3,982	2,252,782
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, LIMPOPO PROVINCE, (FY 2016/17) ZAR</b>			<b>2,791,777</b>

## Limpopo: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	47,061,931	159,427				295	47,061,931	11.1%
District Hospital	49,701,044	50,806	162,347,150	5,192	31,269	978	212,048,194	50.2%
Regional Hospital	20,915,792	20,772	63,263,783	1,699	37,236	1,007	84,179,575	19.9%
Provincial Tertiary Hospital	5,290,929	4,473	43,641,045	681	64,084	1,183	48,931,974	11.6%
National Central Hospital							0	0.0%
Specialized Psychiatric Hospital	2,791,777	4,965	27,414,163	451	60,785	562	30,205,940	7.2%
ALL SERVICE LEVEL(S)	125,761,473	240,443	296,666,141	8,023	36,977	523	422,427,614	100.0%

## Limpopo: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Limpopo Province	422,427,614	70.2%	29.8%	16,371,023,000	2.6%	5,313,820	79.5



## Limpopo: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			96.9%	3.1%
District Hospital	96.4%	3.6%	90.5%	9.5%
Regional Hospital	99.3%	0.7%	88.3%	11.7%
Provincial Tertiary Hospital	94.7%	5.3%	84.5%	15.5%
National Central Hospital				
Specialized Psychiatric Hospital	99.7%	0.3%	100.0%	0.0%
ALL SERVICE LEVEL(S)	96.9%	3.1%	96.4%	3.6%

## Limpopo: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions
District Hospital	21.6%	35,066,984
Regional Hospital	29.9%	18,915,871
Provincial Tertiary Hospital	29.3%	12,786,826
National Central Hospital	5.6%*	
Specialized Psychiatric Hospital	25.5%	6,990,612
ALL SERVICE LEVEL(S)	24.2%	71,793,206

\*Admitted within three months of previous discharge

\*only 1 National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: Mpumalanga

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in the Mpumalanga amounted to ZAR 178 million, the lowest of all Provinces in absolute terms, of which 76.2% was spent on inpatient mental health care and 23.8% was spent on outpatient mental health care. A total of 66,990 outpatient mental health visits and 3,651 inpatient mental health admissions were reported over this period.

Mpumalanga therefore allocated approximately 1.7% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R48. In the Mpumalanga province, 48.3% of costs emanate from the District hospital service level, 27.4% from the Tertiary Hospital service level and 17.8% from the Regional Hospital level and 6. Mental health care provided through the Primary Health Care level assumed only 6.5% of the total mental health expenditure for the 2016/17 financial year.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Mpumalanga, readmissions during the 2016/17 financial year are estimated to have cost 35 million rands, or 19.6% of the overall mental health expenditure for the province.

On average, 97.1% of inpatient mental health admissions in the Mpumalanga were for adults aged 18 years and older, with only 2.9 % of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Mpumalanga was 91.8%, compared to only 8.2% of those under 18 years.

## Transfers to Contracted Hospitals for Mental Health Care

Mpumalanga reported the contracting of rehabilitation services to Siyathuthuka Care Center for long-term, adult, chronic care and to Baneng Care Centre for the care of intellectually disabled children (Life Esidimeni). The cost of providing care for the 2016/17 period at those facilities are in the table below. The cost is projected to increase to 47 million by the 2018/2019 period.

Contracted Hospitals	Annual Budget (ZAR, FY2016/17)
Baneng Care Center	2,100,000
Siyathuthuka Care Center	39,600,000
<b>TOTAL</b>	<b>41,700,000</b>

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings, and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

Mpumalanga reports two NGOs providing day care services for 47 mental health care users (Sitimele and Ciniselani), one supported independent living service for 14 mental health users, and other counseling and support services provided by social workers and caregivers. While no budgets have been provided for these services, based on costs from other provinces for day care services (ZAR 1041 per month), the annual cost of the day care centers is estimated to be R587,124. These NPOs may not be subsidized by the Department of Health however as they are not included in the list of licensed facilities.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings, and obtain missing information. These findings should therefore be interpreted with caution.

# Mental Health Medication Availability

## Drug Name & Duration of Stock-out Reported

	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
<b>PRIMARY CARE</b>				AceTylcysteine (1/2 Districts) AmiTriptyline (1/2 Districts) Buprenorphine (1/2 Districts) Clonazepam (1/2 Districts) Fluphenazine (1/2 Districts) Methadone (1/2 Districts)
<b>DISTRICT HOSPITAL</b>	Zuclopenthixol (1/2 Districts) Clozapine (1/2 Districts) Fluoxetine (1/2 Districts) Fluphenazine (1/2 Districts) Naloxone (1/2 Districts) Nicotinamine (vB3) (1/2 Districts) Phenobarbitone (1/2 Districts) Phenytoin (1/2 Districts) Povidoneiodine (1/2 Districts) Silver sulfadiazine (1/2 Districts) VK1(phytomenodione) (1/2 Districts)	Citalopram (1/2 Districts) Epinephrine(adrenaline) (1/2 Districts) Orphenadrine (1/2 Districts) Risperidone (1/2 Districts) Thiamine (1/2 Districts)	Charcoal (activated) (1/2 Districts) Chlorpromazine (1/2 Districts) Haloperidol (1/2 Districts) Lithium (1/2 Districts) Lorazepam (1/2 Districts)	AceTylcysteine (1/2 Districts)
<b>REGIONAL HOSPITAL</b>	Hydracortisone (1/1 Hospital)			Buprenorphine (1/1 Hospital) Lofexidine (1/1 Hospital) Methadone(1/1 Hospital)
<b>TERTIARY HOSPITAL</b>	Atropine (1/2 Hospitals) Biperidan (1/2 Hospitals) Carbamazepine (1/2 Hospitals) Citalopram (1/2 Hospitals) Epinephrine(adrenaline) (1/2 Hospitals) Hydracortisone (1/2 Hospitals) Lamotrigine (1/2 Hospitals) Lithium (1/2 Hospitals) Phenobarbitone (1/2 Hospitals) Phenytoin (1/2 Hospitals)	Charcoal (activated) (1/2 Hospitals) Citalopram (1/2 Hospitals) Clonidine (1/2 Hospitals) Clozapine (1/2 Hospitals) Flupentixol (1/2 Hospitals) Lorazepam (1/2 Hospitals) Methadone (1/2 Hospitals) Morphine (1/2 Hospitals) Risperidone (1/2 Hospitals)		Buprenorphine (1/2 Hospitals) Lofexidine (1/2 Hospitals)

## Facility-level Costing Results

### Mpumalanga: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
mp Amajuba Memorial Hospital	2,395	44	10.0	10.0	440	1,053,590	1,053,590	1,053,590
mp Barberton Hospital	2,184	81	3.8	3.8	308	672,129	672,129	672,129
mp Bernice Samuels Hospital	2,545	72	14.0	14.0	1,008	2,565,189	2,565,189	2,565,189
mp Bethal Hospital	2,395	52	7.0	7.0	364	871,606	871,606	871,606
mp Carolina Hospital	2,395	35	8.5	8.5	298	712,370	712,370	712,370
mp Elsie Ballot Hospital	2,395	1	5.1	7.7	5	12,212	18,440	15,326
mp Embhuleni Hospital	2,395	279	3.9	5.9	1,088	2,605,480	3,934,275	3,269,877
mp Evander Hospital	2,395	101	5.0	5.0	505	1,209,234	1,209,234	1,209,234
mp HA Grove Hospital	2,545	33	14.0	14.0	462	1,175,712	1,175,712	1,175,712
mp Impungwe Hospital (Wolwekrans)	2,545	0	3.1	4.7	0	0	0	0
mp KwaMhlanga Hospital	2,545	276	14.0	14.0	3,864	9,833,226	9,833,226	9,833,226
mp Lydenburg Hospital	2,184	19	4.5	4.5	86	186,702	186,702	186,702
mp Matibidi Hospital	2,184	24	4.2	4.2	101	220,112	220,112	220,112
mp Matikwana Hospital	2,184	136	4.8	4.8	653	1,425,490	1,425,490	1,425,490
mp Middelburg Hospital	2,545	151	14.0	14.0	2,114	5,379,772	5,379,772	5,379,772
mp Mmametlhake Hospital	2,545	66	14.0	14.0	924	2,351,424	2,351,424	2,351,424
mp Piet Retief Hospital	2,395	193	7.0	7.0	1,351	3,235,000	3,235,000	3,235,000
mp Sabie Hospital	2,184	31	3.6	3.6	112	243,696	243,696	243,696
mp Shongwe Hospital	2,184	142	74.6	74.6	10,593	23,131,892	23,131,892	23,131,892
mp Standerton Hospital	2,395	119	7.5	7.5	893	2,137,111	2,137,111	2,137,111
mp Tintswalo Hospital	2,184	312	6.5	6.5	2,028	4,428,452	4,428,452	4,428,452
mp Tonga Hospital	2,184	132	4.6	4.6	607	1,325,915	1,325,915	1,325,915
mp Waterval Boven Hospital	2,545	2	4.0	6.0	8	20,359	30,742	25,550

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
<b>TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>						<b>64,796,674</b>	<b>66,142,080</b>	<b>65,469,377</b>

*Regional Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
mp Ermelo Hospital	3,323	206	3.3	3.3	680	2,259,026	2,259,026	2,259,026
mp Mapulaneng Hospital	2,805	82	5.0	5.0	410	1,149,935	1,149,935	1,149,935
mp Themba Hospital	2,880	542	5.5	26.1	2,981	8,584,105	40,688,658	24,636,381
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>						<b>11,993,065</b>	<b>44,097,618</b>	<b>28,045,342</b>

*Provincial Tertiary Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
mp Rob Ferreira Hospital	3,266	313	37.6	37.6	11,769	38,442,782	38,442,782	38,442,782
mp Witbank Hospital	3,302	207	5.3	5.3	1,097	3,622,600	3,622,600	3,622,600
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>						<b>42,065,381</b>	<b>42,065,381</b>	<b>42,065,381</b>

# Mpumalanga: Outpatient Costs of Mental Health Services by Service Level

## Primary Health Care Outpatient Mental Health Costs

*(Community Health & Day Centers, Clinics and Mobiles)*

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
mp Ehlanzeni District Municipality	47,660	8,501	2,564,306
mp Gert Sibande District Municipality	47,160	5,049	2,334,412
mp Nkangala District Municipality	40,924	18,252	6,669,183
TOTAL: Primary Health Care Outpatient Mental Health Costs, Mpumalanga Province, (FY 2016/17) ZAR			11,567,901

## District Hospital Outpatient Mental Health Costs

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
mp Amajuba Memorial Hospital	798	1,284	1,024,856
mp Barberton Hospital	728	56	40,762
mp Bernice Samuels Hospital	848	691	586,159
mp Bethal Hospital	798	1,198	956,213
mp Carolina Hospital	798	454	362,371
mp Elsie Ballot Hospital	798	117	93,386
mp Embhuleni Hospital	798	1,798	1,435,117
mp Evander Hospital	798	847	676,054
mp HA Grove Hospital	848	71	60,228
mp Impungwe Hospital (Wolwekrans)	848	13	11,028
mp KwaMhlanga Hospital	848	3,979	3,375,294
mp Lydenburg Hospital	728	27	19,653
mp Matibidi Hospital	728	1,099	799,946
mp Matikwana Hospital	728	134	97,537
mp Middelburg Hospital	848	4,022	3,411,770
mp Mmametlhake Hospital	848	2,752	2,334,458
mp Piet Retief Hospital	798	927	739,907



Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
mp Sabie Hospital	728	40	29,115
mp Shongwe Hospital	728	1,311	954,257
mp Standerton Hospital	798	1,198	956,213
mp Tintswalo Hospital	728	3,236	2,355,436
mp Tonga Hospital	728	109	79,339
mp Waterval Boven Hospital	848	4	3,393
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>			<b>20,402,490</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
mp Ermelo Hospital	1,108	677	749,907
mp Mapulaneng Hospital	935	429	401,075
mp Themba Hospital	960	2,591	2,487,020
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>			<b>3,638,001</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
mp Rob Ferreira Hospital	1,089	294	320,117
mp Witbank Hospital	1,101	5,830	6,416,843
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, MPUMALANGA PROVINCE, (FY 2016/17) ZAR</b>			<b>6,736,960</b>

## Mpumalanga: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	11,567,901	31,802				364	11,567,901	6.5%
District Hospital	20,402,490	25,367	65,469,377	2,301	28,453	804	85,871,867	48.3%
Regional Hospital	3,638,001	3,697	28,045,342	830	33,790	984	31,683,343	17.8%
Provincial Tertiary Hospital	6,736,960	6,124	42,065,381	520	80,895	1,100	48,802,341	27.4%
National Central Hospital							0	0.0%
Specialized Psychiatric Hospital							0	0.0%
ALL SERVICE LEVEL(S)	42,345,352	66,990	135,580,100	3,651	37,135	632	177,925,452	100.0%

## Mpumalanga: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Mpumalanga Province	177,925,452	76.2%	23.8%	10,642,144,000	1.7%	3,722,276	48

## Mpumalanga: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			91.5%	8.5%
District Hospital	96.6%	3.4%	95.2%	
Regional Hospital	99.2%	0.8%	90.9%	
Provincial Tertiary Hospital	100.0%	0.0%	95.1%	
ALL SERVICE LEVEL(S)	97.1%	2.9%	91.8%	8.2%

## Mpumalanga: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions
District Hospital	21.6%	14,141,385
Regional Hospital	29.9%	8,385,557
Provincial Tertiary Hospital	29.3%	12,325,157
National Central Hospital	5.6% <sup>+</sup>	
Specialized Psychiatric Hospital	25.5%	
ALL SERVICE LEVEL(S)	24.2%	32,810,384

\*Admitted within three months of previous discharge

<sup>+</sup>only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: Northern Cape

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in Northern Cape amounted to ZAR 177 million, of which 82.0% was spent on inpatient mental health care and 18.0% was spent on outpatient mental health care. A total of 59,087 outpatient mental health visits and 1,903 inpatient mental health admissions were reported over this period.

Northern Cape therefore allocated approximately 3.9% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R176. In the Northern Cape province, 46.9% of costs emanate from the Specialized Psychiatric hospital service level, with 23.1% and 13.1%, respectively, from the Provincial Tertiary hospital and District hospital service levels. The Northern Cape spent approximately 12.6% of its overall mental health spending on Primary care services for mental health, with 4.4% being spent at the Regional hospital service levels.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Northern Cape, readmissions during the 2016/17 financial year are estimated to have cost 38 million Rands, or 21.3% of the overall mental health expenditure for the province.

On average, 98.7% of inpatient mental health admissions in Northern Cape were for adults aged 18 years and older, with only 1.3% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Northern Cape was 97.9%, compared to only 2.1% of those under 18 years, however outpatient data disaggregated by age was not available for the District, Regional and Tertiary hospital service level.

## Transfers to Contracted Hospitals for Mental Health Care

Provincial respondents from the Northern Cape were not able to specify transfers to contracted hospitals for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

Provincial respondents from the Northern Cape were not able to specify transfers to NGOs for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

# Mental Health Medication Availability

## Drug Name & Duration of Stock-out Reported

	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
<b>PRIMARY CARE</b>	Biperidan (5/5 Districts) Buprenorphine (3/5 Districts) Clonidine (4/5 Districts) Fluphenazine (5/5 Districts) Lofexidine (5/5 Districts) Nicotinamine (vB3) (4/5 Districts) Phenobarbitone (4/5 Districts) Risperidone (5/5 Districts) Silver sulfadiazine (5/5 Districts) Methadone (2/5 Districts)			
<b>DISTRICT HOSPITAL</b>	Change in capturing system at the depot, no data available			
<b>REGIONAL HOSPITAL</b>			Biperidan (1/1 Hospital) Buprenorphine (1/1 Hospital) Fluphenazine (1/1 Hospital) Lofexidine (1/1 Hospital) Nicotinamine (vB3) (1/1 Hospital) Risperidone (1/1 Hospital) Silver sulfadiazine (1/1 Hospital)	
<b>TERTIARY HOSPITAL</b>	Zuclopenthixol (1/1 Hospital)		Biperidan (1/1 Hospital) Buprenorphine (1/1 Hospital) Charcoal (activated) (1/1 Hospital) Clonidine (1/1 Hospital) Fluphenazine (1/1 Hospital) Lofexidine (1/1 Hospital) Morphine (1/1 Hospital) Nicotinamine (vB3) (1/1 Hospital) Phenobarbitone (1/1 Hospital)	

**SPECIALIZED PSYCHIATRIC HOSPITAL**

			<b>Biperidan (1/1 Hospital)</b> <b>Buprenorphine (1/1 Hospital)</b> <b>Charcoal (activated) (1/1 Hospital)</b> <b>Clonidine (1/1 Hospital)</b> <b>Fluoxetine (1/1 Hospital)</b> <b>Lofexidine (1/1 Hospital)</b> <b>Methadone (1/1 Hospital)</b> <b>Morphine( 1/1 Hospital)</b> <b>Nicotinamine (vB3) (1/1 Hospital)</b> <b>Phenobarbitone (1/1 Hospital)</b> <b>Silver sulfadiazine (1/1 Hospital)</b>
--	--	--	---

## Facility-level Costing Results

### Northern Cape: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nc Calvinia (Abraham Esau) Hospital	2,533	20	5.0	5.0	100	253,332	253,332	253,332
nc De Aar (Central Karoo) Hospital	2,755	21	5.0	5.0	105	289,232	289,232	289,232
nc Hartswater (Connie Vorster) Hospital	3,652	65	22.0	22.0	1,430	5,221,827	5,221,827	5,221,827
nc Kakamas Hospital	1,690	1	5.0	5.0	5	8,448	8,448	8,448
nc Kuruman Hospital	2,225	246	22.0	22.0	5,412	12,044,115	12,044,115	12,044,115
nc Manne Dipico (Colesberg) Hospital	2,755	29	3.0	3.0	87	239,649	239,649	239,649
nc Postmasburg Hospital	1,690	2	3.0	3.0	6	10,138	10,138	10,138
nc Prieska (Bill Pickard) Hospital	2,755	9	3.0	3.0	27	74,374	74,374	74,374
nc Prof ZK Matthews Hospital	3,652	32	5.0	5.0	160	584,260	584,260	584,260
nc Springbok (Dr Van Niekerk) Hospital	2,533	9	10.0	10.0	90	227,999	227,999	227,999
nc Tshwaragano Hospital	2,225	125	15.0	15.0	1,875	4,172,712	4,172,712	4,172,712
<b>TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>23,126,085</b>	<b>23,126,085</b>	<b>23,126,085</b>



### Regional Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nc Dr Harry Surtie Hospital	3,294	156	15.0	15.0	2,340	7,707,915	7,707,915	7,707,915
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>7,707,915</b>	<b>7,707,915</b>	<b>7,707,915</b>

### Provincial Tertiary Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nc Kimberley Hospital	4,693	946	6.6	9.2	6,244	29,300,295	40,842,836	35,071,566
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>29,300,295</b>	<b>40,842,836</b>	<b>35,071,566</b>

### Specialized Psychiatric Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nc West End Specialised Psychiatric Hospital	7,638	242	43.0	43.0	10,406	79,480,975	79,480,975	79,480,975
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>79,480,975</b>	<b>79,480,975</b>	<b>79,480,975</b>

# Northern Cape: Outpatient Costs of Mental Health Services by Service Level

## Primary Health Care Outpatient Mental Health Costs

*(Community Health & Day Centers, Clinics and Mobiles)*

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nc Frances Baard District Municipality	461	26,938	12,426,837
nc John Taolo Gaetsewe District Municipality	355	5,508	1,957,964
nc Namakwa District Municipality	419	4,255	1,783,324
nc Pixley ka Seme District Municipality	399	7,226	2,886,182
nc Zwelentlanga Fatman Mgcawu District Municipality	327	9,849	3,222,559
TOTAL: Primary Health Care Outpatient Mental Health Costs, Northern Cape Province, (FY 2016/17) ZAR			22,276,866

## District Hospital Outpatient Mental Health Costs

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nc Calvinia (Abraham Esau) Hospital	844	13	10,978
nc De Aar (Central Karoo) Hospital	918	10	9,182
nc Hartswater (Connie Vorster) Hospital	1,217	5	6,086
nc Kakamas Hospital	563	1	563
nc Kuruman Hospital	742	26	19,287
nc Manne Dipico (Colesberg) Hospital	918	0	0
nc Postmasburg Hospital	563	2	1,126
nc Prieska (Bill Pickard) Hospital	918	10	9,182
nc Prof ZK Matthews Hospital	1,217	0	0
nc Springbok (Dr Van Niekerk) Hospital	844	9	7,600
nc Tshwaragano Hospital	742	14	10,385
TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR			74,390

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nc Dr Harry Surtie Hospital	1,098	31	34,038
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>34,038</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nc Kimberley Hospital	1,564	3,722	5,822,266
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>5,822,266</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nc West End Specialised Psychiatric Hospital	2,546	1,468	3,737,526
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTHERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>3,737,526</b>

## Northern Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	22,276,866	53,776				414	22,276,866	12.6%
District Hospital	74,390	90	23,126,085	559	41,370	827	23,200,475	13.1%
Regional Hospital	34,038	31	7,707,915	156	49,410	1,098	7,741,953	4.4%
Provincial Tertiary Hospital	5,822,266	3,722	35,071,566	946	37,074	1,564	40,893,832	23.1%
National Central Hospital							0	0.0%
Specialized Psychiatric Hospital	3,737,526	1,468	79,480,975	242	328,434	2,546	83,218,501	46.9%
ALL SERVICE LEVEL(S)	31,945,086	59,087	145,386,541	1,903	76,399	541	177,331,627	100.0%

## Northern Cape: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Northern Cape Province	177,331,627	82.0%	18.0%	4,494,185,000	3.9%	1,005,715	176

## Northern Cape: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			98.0%	2.0%
District Hospital	99.0%	1.0%	99.1%	0.9%
Regional Hospital	100.0%	0.0%	100%	0.0%
Provincial Tertiary Hospital	100.0%	0.0%	60.7%	39.3%
National Central Hospital				
Specialized Psychiatric Hospital	93.0%	7.0%	Data not available	
ALL SERVICE LEVEL(S)	98.7%	1.3%	97.9%	2.1%

## Northern Cape: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions
District Hospital	21.6%	4,995,234
Regional Hospital	29.9%	2,304,667
Provincial Tertiary Hospital	29.3%	10,275,969
National Central Hospital	5.6%*	
Specialized Psychiatric Hospital	25.5%	20,267,649
ALL SERVICE LEVEL(S)	24.2%	35,183,543

\*Admitted within three months of previous discharge

\*only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: North West

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in North West amounted to ZAR 296 million, of which 86.2% was spent on inpatient mental health care and 13.8% was spent on outpatient mental health care. A total of 73,917 outpatient mental health visits and 4,520 inpatient mental health admissions were reported over this period.

North West therefore allocated approximately 3.1% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R91. In the North West province, 61.3% of costs emanate from the Specialized Psychiatric hospital service level, with 17.6% and 12% of overall mental health spending from the Regional hospital and Provincial Tertiary hospital service levels, respectively. North West spent approximately 5.1% of its overall mental health spending on Primary care services for mental health, with 4%, being spent at the District hospital service levels.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the North West, readmissions during the 2016/17 financial year are estimated to have cost 68 million Rands, or 23% of the overall mental health expenditure for the province.

On average, 96.9% of inpatient mental health admissions in the North West were for adults aged 18 years and older, with 3.1% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the North West was 91.9%, compared to only 8.1% of those under 18 years, however outpatient data disaggregated by age was not available for the Regional hospital service level.

## Transfers to Contracted Hospitals for Mental Health Care

Provincial respondents from the North West were not able to specify transfers to contracted hospitals for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

Provincial respondents from the North West were not able to specify transfers to NGOs for mental health care.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

# Mental Health Medication Availability

## Drug Name & Duration of Stock-out Reported

	< 1 month	1 – 3 months	3 – 6 months	Not Routinely Available
<b>REGIONAL HOSPITAL</b>	Citalopram (1/1 Hospitals) Fluoxetine (1/1 Hospitals) Flupentixol (1/1 Hospitals)			Buprenorphine (1/1 Hospitals) Clonidine (1/1 Hospitals) Lofexidine (1/1 Hospitals) Methadone( 1/1 Hospitals)
<b>SPECIALIZED PSYCHIATRIC HOSPITAL</b>	Atropine (1/2 Hospitals) Charcoal (activated) (1/2 Hospitals) Diazepam (1/2 Hospitals) Lamotrigine (1/2 Hospitals) Lorazepam (1/2 Hospitals) Risperidone (1/2 Hospitals) Zuclopenthixol (1/2 Hospitals)	Fluoxetine (1/2 Hospitals) Fluphenazine (1/2 Hospitals) Haloperidol (1/2 Hospitals) Methylphenidate (1/2 Hospitals)	Lithium (1/2 Hospitals) Phenytoin (1/2 Hospitals)	AceTylcysteine (1/2 Hospitals) Buprenorphine (1/2 Hospitals) Fluphenazine (1/2 Hospitals) Lofexidine (1/2 Hospitals) Nicotinamine (vB3) (1/2 Hospitals) Phenobarbitone (1/2 Hospitals)



## Facility-level Costing Results

### North West: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nw Brits Hospital	2,840	143	3.9	5.9	558	1,583,792	2,391,526	1,987,659
nw Christiana Hospital	2,223	9	4.9	7.4	44	98,031	148,027	123,029
nw Ganyesa Hospital	2,223	0	3.5	5.3	0	0	0	0
nw Gelukspan Hospital	2,398	98	5.4	8.2	529	1,268,859	1,915,977	1,592,418
nw General de la Rey Hospital	2,398	0	2.5	3.8	0	0	0	0
nw Koster Hospital	2,840	10	4.5	6.8	45	127,794	192,969	160,381
nw Lehurutshe Hospital	2,398	0	4.1	6.2	0	0	0	0
nw Moses Kotane Hospital	2,840	0	5.2	7.9	0	0	0	0
nw Nic Bodenstein Hospital	2,311	7	3.3	5.0	23	53,379	80,603	66,991
nw Schweizer-Reneke Hospital	2,223	0	3.7	5.6	0	0	0	0
nw Taung Hospital	2,223	215	4.0	6.0	860	1,911,717	2,886,692	2,399,205
nw Thusong Hospital	2,398	7	4.8	7.2	34	80,562	121,649	101,106
nw Zeerust Hospital	2,398	64	5.6	8.5	358	859,333	1,297,593	1,078,463
TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR						5,983,467	9,035,036	7,509,252

### Regional Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nw Joe Morolong Memorial Hospital	2,853	8	5.1	24.2	41	116,422	551,841	334,132
nw Mahikeng Provincial Hospital	2,837	892	5.0	23.7	4,460	12,654,194	59,980,881	36,317,537
nw Potchefstroom Hospital	2,677	345	5.8	27.5	2,001	5,356,806	25,391,263	15,374,035
<b>TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>						<b>18,127,423</b>	<b>85,923,984</b>	<b>52,025,704</b>

### Provincial Tertiary Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nw Job Shimankana Tabane Hospital	3,348	384	6.8	9.5	2,611	8,742,583	12,213,903	10,478,243
nw Klerksdorp-Tshepong Tertiary Hospital	2,464	745	7.0	9.8	5,215	12,847,948	17,987,127	15,417,538
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>						<b>21,590,531</b>	<b>30,201,030</b>	<b>25,895,781</b>

### Specialized Psychiatric Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
nw Bophelong Psychiatric Hospital	1,856	686	119.4	102.5	81,908	151,990,964	130,459,119	141,225,042
nw Witrand Psychiatric Hospital	1,214	907	26.0	26.0	23,582	28,635,056	28,635,056	28,635,056
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>						<b>180,626,020</b>	<b>159,094,176</b>	<b>169,860,098</b>

## North West: Outpatient Costs of Mental Health Services by Service Level

### Primary Health Care Outpatient Mental Health Costs

(Community Health & Day Centers, Clinics and Mobiles)

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nw Bojanala Platinum District Municipality	385	11,178	4,306,047
nw Dr Kenneth Kaunda District Municipality	512	2,108	1,078,630
nw Dr Ruth Segomotsi Mompoti District Municipality	430	13,835	5,950,437
nw Ngaka Modiri Molema District Municipality	468	7,935	3,710,669
<b>TOTAL: Primary Health Care Outpatient Mental Health Costs, North West Province, (FY 2016/17) ZAR</b>			<b>15,045,783</b>

*District Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nw Brits Hospital	947	558	528,215
nw Christiana Hospital	741	5	3,705
nw Ganyesa Hospital	741	396	293,426
nw Gelukspan Hospital	799	112	89,514
nw General de la Rey Hospital	799	590	471,546
nw Koster Hospital	947	914	865,212
nw Lehurutshe Hospital	799	267	213,395
nw Moses Kotane Hospital	947	1,428	1,351,775
nw Nic Bodenstein Hospital	770	138	106,297
nw Schweizer-Reneke Hospital	741	0	0
nw Taung Hospital	741	0	0
nw Thusong Hospital	799	163	130,275
nw Zeerust Hospital	799	319	254,955
nw Brits Hospital	947	558	528,215
nw Christiana Hospital	741	5	3,705
nw Ganyesa Hospital	741	396	293,426
nw Gelukspan Hospital	799	112	89,514
nw General de la Rey Hospital	799	590	471,546
nw Koster Hospital	947	914	865,212
nw Lehurutshe Hospital	799	267	213,395
nw Moses Kotane Hospital	947	1,428	1,351,775
nw Nic Bodenstein Hospital	770	138	106,297
nw Schweizer-Reneke Hospital	741	0	0
nw Taung Hospital	741	0	0
nw Thusong Hospital	799	163	130,275
nw Zeerust Hospital	799	319	254,955
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>			<b>4,308,313</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nw Joe Morolong Memorial Hospital	951	0	0
nw Mahikeng Provincial Hospital	946	92	86,537
nw Potchefstroom Hospital	892	0	0
nw Joe Morolong Memorial Hospital	951	0	0
nw Mahikeng Provincial Hospital	946	92	86,537
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>			<b>86,537</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nw Job Shimankana Tabane Hospital	1,116	1,857	2,072,480
nw Klerksdorp-Tshepong Tertiary Hospital	821	9,190	7,546,989
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>			<b>9,619,469</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
nw Bophelong Psychiatric Hospital	619	11,964	7,400,217
nw Witrand Psychiatric Hospital	405	10,868	4,398,917
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, NORTH WEST PROVINCE, (FY 2016/17) ZAR</b>			<b>11,799,135</b>

## North West: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	15,045,783	35,056				429	15,045,783	5.1%
District Hospital	4,308,313	4,890	7,509,252	553	13,579	881	11,817,565	4.0%
Regional Hospital	86,537	92	52,025,704	1,245	41,788	941	52,112,241	17.6%
Provincial Tertiary Hospital	9,619,469	11,047	25,895,781	1,129	22,937	871	35,515,250	12.0%
National Central Hospital							0	0.0%
Specialized Psychiatric Hospital	11,799,135	22,832	169,860,098	1,593	106,629	517	181,659,233	61.3%
ALL SERVICE LEVEL(S)	40,859,237	73,917	255,290,835	4,520	56,480	553	296,150,072	100.0%

## North West: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
North West Province	296,150,072	86.2%	13.8%	9,460,530,000	3.1%	3,263,719	91

## North West: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			93.0%	7.0%
District Hospital	96.7%	3.3%	95.5%	4.5%
Regional Hospital	99.0%	1.0%	No data available	
Provincial Tertiary Hospital	97.1%	2.9%	71.4%	28.6%
National Central Hospital				
Specialized Psychiatric Hospital	95.3%	4.7%	92.4%	7.6%
ALL SERVICE LEVEL(S)	96.9%	3.1%	91.9%	8.1%

## North West: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions
District Hospital	21.6%	1,621,998
Regional Hospital	29.9%	15,555,685
Provincial Tertiary Hospital	29.3%	7,587,464
National Central Hospital	5.6%*	
Specialized Psychiatric Hospital	25.5%	43,314,325
ALL SERVICE LEVEL(S)	24.2%	61,780,382

\*Admitted within three months of previous discharge

\*only one National Central Hospital was able to provide total number of readmissions

---

## Results and Facility-level Data: Western Cape

---

### Inpatient and Outpatient Mental Health Care

For the 2016/17 FY, total inpatient and outpatient mental health expenditure in Western Cape amounted to ZAR 1,504 million, of which 90.5% was spent on inpatient mental health care and 9.5% was spent on outpatient mental health care. A total of 271,015 outpatient mental health visits and 19,724 inpatient mental health admissions were reported over this period.

Western Cape therefore allocated approximately 7.5% of its Total Provincial Health Budget to mental healthcare, resulting in total mental health expenditure per capita (uninsured) of R300. In the Western Cape province, 61.7% of costs emanate from the Specialized Psychiatric hospital service level, with 14.6% and 7.3%, respectively from the National Central Hospital service level and the Regional Hospital levels. The Western Cape spent approximately 5.1% of its overall mental health spending on Primary care services for mental health, with 6.6% being spent at the District hospital service level.

Based on national average readmission rates calculated through primary data collected directly from facilities, South African hospitals have an average readmission rate for mental health inpatients of 24.2%. This means that 24.2% of inpatients are likely to be readmitted to a hospital within three months of discharge. The service-level average readmission rates for District Hospitals, Regional Hospitals, Provincial Tertiary Hospitals, National Central Hospitals and Specialized Psychiatric Hospitals, are: 21.6%, 29.9%, 29.3%, 5.6% and 25.5%, respectively. Based on the inpatient cost calculations for the Western Cape, readmissions during the 2016/17 financial year are estimated to have cost 294 million rands, or 19.5% of the overall mental health expenditure for the province.

On average, 89.9% of inpatient mental health admissions in Western Cape were for adults aged 18 years and older, with only 10.1% of mental health admissions being recorded for those below 18 years. Similarly, the proportion of adults presenting for outpatient mental health care in the Western Cape was 94.2%, compared to only 5.8% of those under 18 years, however outpatient data disaggregated by age was only available for the District hospital and PHC service levels.



## Transfers to Contracted Hospitals for Mental Health Care

The Western Cape did not report on contracted hospitals providing mental health care, however a report produced by the Deputy Director for Mental Health and Substance Abuse in the Western Cape indicated that a number of private facilities existed in the province charging up to R45,000 per month per patient. It is unclear however if any of these facilities are contracted by the provincial department of health.

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on contracted hospital services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all contracted mental health services in their respective Provinces.

As such, for consistency, we have not reported these contracted hospital costs in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those hospitals that have been contracted. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Transfers to NGOs for Mental Health Care

Primary data collection for the Western Cape only took place in Eden District and the City of Cape Town, and therefore aggregate estimates for the number of other community-based services were drawn from the situational summary produced by the Deputy Director of Mental Health Services. Group homes offer residential care for persons with chronic psychiatric illness and co-morbid illnesses and are based mainly in the province's metro. These group homes are filled to capacity in the Western Cape with long waiting lists. Psychosocial Rehabilitation Groups are offered by the Cape Mental Health Society and offer support services around living, learning, socialization and work to help re-integration into the community. The report notes poor attendance to these groups however due to reasons including a lack of motivation and travel challenges. Special day care centers offer daily services to children with intellectual disability and high support needs including training around eating and the use of the toilet. Only about a third of these

centers are funded between the DOH and DSD and are filled to capacity; even some facilities that are funded are catering for more children than the allocation allows for. 24-hour residential facility provide a high care component, with many residents requiring assistance with feeding, dressing and mobility. These centers are also filled to capacity with a number of funded facilities catering for additional children that are not funded. Limited prioritization of further funding for these centers is taking place by the DOH due to a cabinet decision that DSD take over these services.

The City of Cape Town, through primary data collection, also reported on other types of non-residential based services (e.g. basic psychosocial counselling; life coping skills, adherence counselling etc) for a total of 281 clients, with expenditure amounting to just over R 4.8 million.

Total No. of Clients licensed for	Budget allocation for 16/17
2,288	37,182,523

It is important to note that these findings may not be exhaustive as not all Provinces reported comprehensively on transfers to NGOs for mental health services. At the time this report was prepared, no provincial departments of health were able to validate that the findings incorporate all NGO mental health services in their respective Provinces.

As such, for consistency, we have not reported these NGO transfers in most interprovincial comparisons (excluding the results presented in the results section: **Health System Costs of Mental Health Services and Programmes**). Furthermore, some reporting Provinces were not able to indicate a budget for those NGOs that have been subsidized. During the second phase of work towards an investment case for mental health, we will be conducting provincial visits to validate these findings and obtain missing information. These findings should therefore be interpreted with caution.

## Mental Health Medication Availability

Mental health medication availability was not reported by the Western Cape.

## Facility-level Costing Results

### Western Cape: Inpatient Costs of Mental Health Services by Service Level

#### *District Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR  (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR  (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Alan Blyth Hospital	1,983	21	3.3	5.0	69	137,419	207,503	172,461
wc Beaufort West Hospital	2,276	151	2.7	4.1	408	927,918	1,401,157	1,164,538
wc Caledon Hospital	2,621	78	3.4	5.1	265	695,015	1,049,473	872,244
wc Ceres Hospital	1,806	236	2.7	4.1	637	1,151,020	1,738,041	1,444,531
wc Citrusdal Hospital	2,013	54	2.7	4.1	146	293,531	443,232	368,381
wc Clanwilliam Hospital	2,013	84	2.8	4.2	235	473,515	715,008	594,261
wc Eerste River Hospital	2,480	561	3.8	5.7	2,132	5,286,843	7,983,133	6,634,988
wc False Bay Hospital	2,480	145	3.3	5.0	479	1,186,675	1,791,880	1,489,278
wc GF Jooste Hospital	2,480	391	2.2	3.3	860	2,133,288	3,221,264	2,677,276
wc Helderberg Hospital	2,480	610	3.0	4.5	1,830	4,538,382	6,852,957	5,695,670
wc Hermanus Hospital	2,621	260	2.1	3.2	546	1,430,913	2,160,679	1,795,796
wc Karl Bremer Hospital	2,480	409	3.6	5.4	1,472	3,651,538	5,513,822	4,582,680
wc Khayelitsha Hospital	2,480	823	4.2	6.3	3,457	8,572,334	12,944,225	10,758,279
wc Knysna Hospital	1,983	266	2.8	4.2	745	1,476,910	2,230,134	1,853,522
wc Laingsburg Hospital	2,276	7	3.3	5.0	23	52,575	79,389	65,982
wc LAPA Munnik Hospital	2,013	9	2.8	4.2	25	50,734	76,608	63,671
wc Mitchells Plain Hospital	2,480	1,114	4.7	7.1	5,236	12,984,733	19,606,947	16,295,840
wc Montagu Hospital	1,806	126	2.8	4.2	353	637,288	962,305	799,797
wc Mossel Bay Hospital	1,983	208	2.8	4.2	582	1,154,877	1,743,864	1,449,371
wc Murraysburg Hospital	2,276	0	2.6	3.9	0	0	0	0
wc Otto Du Plessis Hospital	2,621	75	3.4	5.1	255	668,284	1,009,108	838,696
wc Oudtshoorn Hospital	1,983	123	2.9	4.4	357	707,323	1,068,057	887,690
wc Prince Albert Hospital	2,276	23	2.8	4.2	64	146,573	221,326	183,950
wc Radie Kotze Hospital	2,013	45	3.1	4.7	140	280,848	424,080	352,464

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Riversdale Hospital	1,983	64	2.9	4.4	186	368,038	555,737	461,887
wc Robertson Hospital	1,806	194	2.6	3.9	504	911,134	1,375,813	1,143,473
wc Stellenbosch Hospital	1,806	423	3.0	4.5	1,269	2,292,286	3,461,352	2,876,819
wc Swartland Hospital	2,013	75	3.3	5.0	248	498,278	752,400	625,339
wc Swellendam Hospital	2,621	121	3.1	4.7	375	983,032	1,484,379	1,233,705
wc Uniondale Hospital	1,983	0	2.4	3.6	0	0	0	0
wc Victoria Hospital	2,480	1,325	3.6	5.4	4,770	11,829,553	17,862,626	14,846,090
wc Vredenburg Hospital	2,013	381	2.7	4.1	1,029	2,071,024	3,127,246	2,599,135
wc Vredendal Hospital	2,013	259	2.6	3.9	673	1,355,718	2,047,135	1,701,427
wc Wesfleur Hospital	2,480	0	2.8	4.2	0	0	0	0
TOTAL DISTRICT HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR						68,947,600	104,110,877	86,529,239

*Regional Hospital Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc George Hospital	3,408	317	3.7	17.5	1,173	3,996,844	18,945,039	11,470,941
wc Mowbray Maternity Hospital	2,225	0	4.1	19.4	0	0	0	0
wc New Somerset Hospital	2,901	846	4.7	22.3	3,976	11,533,067	54,666,739	33,099,903
wc Paarl Hospital	3,228	1,380	12.5	12.5	17,250	55,687,415	55,687,415	55,687,415
TOTAL REGIONAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR						74,149,435	143,197,389	108,673,412

### Provincial Tertiary Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Red Cross War Memorial Children's Hospital	5,973	35	270.0	270.0	9,450	56,440,512	56,440,512	56,440,512
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>56,440,512</b>	<b>56,440,512</b>	<b>56,440,512</b>

### National Central Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Groote Schuur Hospital	5,430	1,217	17.0	17.0	20,689	112,339,099	112,339,099	112,339,099
wc Tygerberg Hospital	5,119	681	25.0	25.0	17,025	87,155,935	87,155,935	87,155,935
<b>TOTAL NATIONAL CENTRAL HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>199,495,035</b>	<b>199,495,035</b>	<b>199,495,035</b>

### Specialized Psychiatric Hospital Inpatient Mental Health Costs

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Alexandra Hospital	1,262	125	360.0	360.0	45,000	56,794,440	56,794,440	56,794,440
wc Lentegeur Hospital	1,459	1,658	136.3	136.3	226,002	329,640,423	329,640,423	329,640,423
wc Stikland Hospital	1,778	2,499	44.0	44.0	109,956	195,501,581	195,501,581	195,501,581
wc Valkenberg Hospital	2,373	2,050	66.9	66.9	137,125	325,426,490	325,426,490	325,426,490
wc Alexandra Hospital	1,262	125	360.0	360.0	45,000	56,794,440	56,794,440	56,794,440
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>						<b>907,362,934</b>	<b>907,362,934</b>	<b>907,362,934</b>

*Other Specialized Hospitals Inpatient Mental Health Costs*

Hospital Name	Expenditure per PDE, ZAR (FY 2016/17)	Total Mental Health Admissions (FY 2016/17)	Average Length of Stay (ALoS), days	Sensitivity: Average Length of Stay (ALoS), days	Total Inpatient Days	Total Inpatient Cost, ZAR (FY 2016/17)	Sensitivity: Total Inpatient Cost, ZAR (FY 2016/17)	Average Total Inpatient Cost, ZAR (FY 2016/17)
wc Nelspoort Hospital	882	40	55.0	55.0	2,198	1,939,087	1,939,087	1,939,087
TOTAL OTHER SPECIALIZED HOSPITAL INPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR						1,939,087	1,939,087	1,939,087

## Western Cape: Outpatient Costs of Mental Health Services by Service Level

*Primary Health Care Outpatient Mental Health Costs*

*(Community Health & Day Centers, Clinics and Mobiles)*

District Municipality	Expenditure per PHC headcount, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Cape Winelands District Municipality	366	17,356	6,356,506
wc Central Karoo District Municipality	517	3,115	1,611,471
wc City of Cape Town Metropolitan Municipality	379	142,243	53,930,535
wc Eden District Municipality	393	17,043	6,690,533
wc Overberg District Municipality	335	8,261	2,770,371
wc West Coast District Municipality	381	12,273	4,673,250
TOTAL: Primary Health Care Outpatient Mental Health Costs, Western Cape Province, (FY 2016/17) ZAR			76,032,666

*District Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Alan Blyth Hospital	661	207	136,824
wc Beaufort West Hospital	759	79	59,934
wc Caledon Hospital	874	414	361,659
wc Ceres Hospital	602	244	146,918
wc Citrusdal Hospital	671	97	65,095
wc Clanwilliam Hospital	671	75	50,331
wc Eerste River Hospital	827	541	447,225
wc False Bay Hospital	827	2,703	2,234,471
wc GF Jooste Hospital	827	0	0
wc Helderberg Hospital	827	393	324,879
wc Hermanus Hospital	874	411	359,039
wc Karl Bremer Hospital	827	222	183,519
wc Khayelitsha Hospital	827	0	0
wc Knysna Hospital	661	381	251,836
wc Laingsburg Hospital	759	3	2,276
wc LAPA Munnik Hospital	671	83	55,700
wc Mitchells Plain Hospital	827	0	0
wc Montagu Hospital	602	395	237,839
wc Mossel Bay Hospital	661	977	645,785
wc Murraysburg Hospital	759	7	5,311
wc Otto Du Plessis Hospital	874	270	235,865
wc Oudtshoorn Hospital	661	757	500,367
wc Prince Albert Hospital	759	79	59,934
wc Radie Kotze Hospital	671	20	13,422
wc Riversdale Hospital	661	58	38,337
wc Robertson Hospital	602	500	301,062
wc Stellenbosch Hospital	602	162	97,544
wc Swartland Hospital	671	425	285,210
wc Swellendam Hospital	874	273	238,486
wc Uniondale Hospital	661	0	0
wc Victoria Hospital	827	700	578,664
wc Vredenburg Hospital	671	601	403,320

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Vredendal Hospital	671	0	0
wc Wesfleur Hospital	827	6,045	4,997,180
<b>TOTAL DISTRICT HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>13,318,032</b>

*Regional Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc George Hospital	1,136	0	0
wc Mowbray Maternity Hospital	742	0	0
wc New Somerset Hospital	967	0	0
wc Paarl Hospital	1,076	884	951,259
wc Worcester Hospital	1,229	0	0
<b>TOTAL REGIONAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>951,259</b>

*Provincial Tertiary Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Red Cross War Memorial Children's Hospital	1,991	6,302	12,546,318
<b>TOTAL PROVINCIAL TERTIARY HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>12,546,318</b>



*National Central Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Groote Schuur Hospital	1,810	6,327	11,451,649
wc Tygerberg Hospital	1,706	4,766	8,132,848
<b>TOTAL NATIONAL CENTRAL HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>19,584,496</b>

*Specialized Psychiatric Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Alexandra Hospital	421	2,571	1,081,619
wc Lentegeur Hospital	486	12,661	6,155,665
wc Stikland Hospital	593	12,375	7,334,243
wc Valkenberg Hospital	791	7,716	6,103,920
<b>TOTAL SPECIALIZED PSYCHIATRIC HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>20,675,446</b>

*Other Specialized Hospital Outpatient Mental Health Costs*

Hospital Name	Expenditure per Outpatient, ZAR (FY 2016/17)	Total Mental Health Clients (FY 2016/17)	Total Outpatient Cost, ZAR (FY 2016/17)
wc Nelspoort Hospital	294	0	0
<b>TOTAL OTHER SPECIALIZED HOSPITAL OUTPATIENT MENTAL HEALTH COSTS, WESTERN CAPE PROVINCE, (FY 2016/17) ZAR</b>			<b>0</b>

## Western Cape: Total Mental Health Inpatient and Outpatient Costs by Service Level

Service Level	Total Outpatient Cost, ZAR (FY 2016/17)	Total Outpatient Mental Health Clients	Total Inpatient Cost, ZAR (FY 2016/17)	Total Inpatient Mental Health Admissions	Total Cost per Admission ZAR (FY 2016/17)	Total Cost per Outpatient ZAR (FY 2016/17)	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion of Total Mental Health Inpatient and Outpatient Cost to Service Level
PHC, CHC, CDC & Mobile	76,032,666	200,291				380	76,032,666	5.1%
District Hospital	13,318,032	17,122	86,529,239	8,661	9,991	778	99,847,271	6.6%
Regional Hospital	951,259	884	108,673,412	2,758	39,403	1,076	109,624,671	7.3%
Provincial Tertiary Hospital	12,546,318	6,302	56,440,512	35	1,612,586	1,991	68,986,830	4.6%
National Central Hospital	19,584,496	11,093	199,495,035	1,898	105,108	1,765	219,079,531	14.6%
Specialized Psychiatric Hospital	20,675,446	35,323	907,362,934	6,332	143,298	585	928,038,380	61.7%
Other Specialized Hospital			1,939,087	40	48,477		1,939,087	0.1%
ALL SERVICE LEVEL(S)	143,108,217	271,015	1,360,440,219	19,724	68,974	528	1,503,548,436	100%

## Western Cape: Summary Mental Health Inpatient and Outpatient Costs

Province	Total Mental Health Inpatient and Outpatient Cost ZAR (FY 2016/17)	Proportion: Inpatient	Proportion Outpatient	Total Provincial Health Budget ZAR (FY 2016/17)	Proportion Total Provincial Health Budget to Mental Health Inpatient and Outpatient Care	Total Population, uninsured	Total Mental Health Expenditure per capita Uninsured ZAR (FY 2016/17)
Western Cape Province	1,503,548,436	90.5%	9.5%	19,983,000,000	7.5%	5,012,140	300

## Western Cape: Child and Adult Inpatient and Outpatient Costs by Service Level

Service Level	Proportion of Inpatient Mental Health Admissions		Proportion of Outpatient Mental Health Clients	
	Adults (18y and older)	Children (under 18y)	Adults (18y and older)	Children (under 18y)
PHC, CHC, CDC & Mobile			94.7%	5.3%
District Hospital	92.4%	7.6%	89.4%	10.6%
Regional Hospital	96.1%	3.9%		
Provincial Tertiary Hospital	0.0%	100%		
National Central Hospital	77.6%	22.4%		
Specialized Psychiatric Hospital	97.2%	2.8%		
Other Specialized Hospital	72.5%	27.5%	Data not available	
ALL SERVICE LEVEL(S)	89.9%	10.1%	94.2%	5.8%

## Western Cape: Inpatient Costs of Readmission by Service Level

Service Level	National Average Readmission* Rate for Mental Health Inpatient Admissions, by Service level	Total Cost of Inpatient Readmissions
District Hospital	21.6%	18,690,316
Regional Hospital	29.9%	32,493,350
Provincial Tertiary Hospital	29.3%	N/A – One Provincial Tertiary Hospital in the Western Cape reported zero readmissions
National Central Hospital	5.6% <sup>+</sup>	11,171,722
Specialized Psychiatric Hospital	25.5%	231,377,548
ALL SERVICE LEVEL(S)	24.2%	315,567,929

\*Admitted within three months of previous discharge

<sup>+</sup>only one National Central Hospital was able to provide total number of readmissions

## References

1. National Mental Health Policy Framework and Strategic Plan: 2013-2020, (2013).
2. DOH. National Health Insurance Policy: Towards Universal Health Coverage, Government Gazette 40955. Pretoria: National Department of Health, 2017.
3. Burns JK. Mental health services funding and development in KwaZulu-Natal: a tale of inequity and neglect. SAMJ: South African Medical Journal. 2010;100(10):662-6.
4. Charlson FJ, Diminic S, Lund C, Degenhardt L, Whiteford HA. Mental and Substance Use Disorders in Sub-Saharan Africa: Predictions of Epidemiological Changes and Mental Health Workforce Requirements for the Next 40 Years. PLoS ONE. 2014;9(10):1-11. doi: 10.1371/journal.pone.0110208. PubMed PMID: 99200561.
5. Docrat, S., Besada, D., Cleary, S., Daviaud, E., Lund, C. 2019. Mental health system costs, resources and constraints in South Africa: a national survey. Health Policy and Planning. Advance article. Available at: <https://academic.oup.com/heapol/advance-article/doi/10.1093/heapol/czz085/5572608>
6. Williams D, Herman A, Stein D, Heeringa S, Jackson P, Moomal H, et al. Prevalence, service use and demographic correlates of 12-month psychiatric disorders in South Africa: the South African stress and Health Study. Psychological Medicine. 2007;38(2):211-20.
7. GBD. Global Burden of Disease Study 2015. In: Institute for Health Metrics and Evaluation (IHME), editor. Seattle 2015.

8. Global Health Estimates 2015: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2015 [Internet]. World Health Organization. 2016.
9. Mental Health Atlas 2014 [Internet]. [Unpublished Database]. 2014.
10. Petersen I, Hancock JH, Bhana A, Govender K. Closing the treatment gap for depression co-morbid with HIV in South Africa: Voices of afflicted women. 2013.
11. WHO. Mental Health Atlas 2017. Geneva: WHO Press: World Health Organization, 2018.
12. Massyn N, Padarath A, Peer N, Day C. District Health Barometer 2016/17. Health Systems Trust. 2017.
13. Consumer Price Index - December 2016 [Internet]. Statistics South Africa. 2017 [cited 20 July 2018].
14. Average Length of Stay by Hospital and Province (2008 - 2017) [Internet]. Parliamentary Monitoring Group. 2018 [cited 01 November 2018]. Available from: <https://pmg.org.za/files/RNW252-2018-05-03-Annexure-1.xlsx>.
15. DOH. Standard Treatment Guidelines And Essential Medicines List For South Africa - Adults Pretoria: National Department of Health, 2012.
16. DOH. Standard Treatment Guidelines And Essential Medicines List For South Africa - Paediatrics Pretoria: National Department of Health, 2012.
17. DOH. Mental Health Care Act. Pretoria: National Department of Health, 2002.
18. Policy guidelines on 72-hour assessment of involuntary mental health care users, (2012).

19. Department of Health. Standard Treatment Guidelines And Essential Medicines List For South Africa - Adults Pretoria: National Department of Health, 2012.
20. Department of Health. Standard Treatment Guidelines And Essential Medicines List For South Africa - Paediatrics Pretoria: National Department of Health, 2012.
21. Global Burden of Disease Study 2017 (GBD 2017) Results [Internet]. Institute for Health Metrics and Evaluation (IHME). 2018 [cited November 2018]. Available from: <http://ghdx.healthdata.org/gbd-results-tool>.
22. Global Burden of Disease Study 2017 (GBD 2017) Results [Internet]. Institute for Health Metrics and Evaluation (IHME). 2018 [cited November 2018]. Available from: <http://ghdx.healthdata.org/gbd-results-tool>.