INTRODUCTION TO THE NATIONAL MENTAL HEALTH SERVICE PLANNING FRAMEWORK
Suggested citation

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BACKGROUND

Overview

The National Mental Health Service Planning Framework (NMHSPF) provides a comprehensive model of the mental health services required to meet population needs, and is designed to help plan, coordinate and resource mental health services (see appendix 1 NMHSPF brief for planners). It is an internationally unprecedented, evidence-based framework providing national average benchmarks for optimal service delivery across the full spectrum of mental health services in Australia. It provides an agreed national language for mental health services, with a detailed taxonomy and definitions of service types accompanied by national average staffing profiles and salaries. The associated NMHSPF Planning Support Tool (NMHSPF-PST) allows users to estimate need and expected demand for mental health care and the level and mix of mental health services required for a given population. The NMHSPF builds on state and territory expertise in population-based mental health service planning and has collated expert input from around 250 service managers and planners, public and private sector clinicians, community sector professionals, consumers, carers, technical experts and academics (see appendix 2 for a list of project contributors).

The current NMHSPF package includes:

- The NMHSPF-PST;
- The NMHSPF-PST user guide;
- An essential overview document that outlines key NMHSPF information;
- A framework document that explains how the NMHSPF aligns with the mental health system;
- Service element and activity descriptions;
- Descriptions of care profiles covering all age groups;
- Descriptions of staffing profiles;
- A technical manual that describes the epidemiology, modelling, service taxonomy and other aspects of the methodology underpinning the work; and
- Reports of various research reviews commissioned for the project.
Figure 1: Timeline of NMHSPF development
History of NMHSPF development

Figure 1 shows the timeline of NMHSPF development.

Initial development (Phase 1): 2011 – 2013

Development of the NMHSPF was a national project undertaken between 2011 and 2013 to progress a commitment under the Fourth National Mental Health Plan to “develop a national service planning framework that establishes targets for the mix and level of the full range of mental health services, backed by innovative funding models”\(^1\). Overall steerage of the project was managed under the auspice of the AHMAC Mental Health Drug and Alcohol Principal Committee (MHDAPC) and funded by the Australian Government Department of Health and Ageing.

The project was jointly led by the New South Wales Ministry of Health and Queensland Health. Over 100 stakeholders from around Australia were involved in the initial development of the NMHSPF. The Expert Working Groups consisted of a broad range of stakeholders including representatives from medical, nursing and allied health fields, consumer and carers, representatives from the NGO sector, peak bodies and research organisations.

Phase 1 of the NMHSPF project successfully developed a first generation version of the NMHSPF (AUS V1.0), an evidence-based framework that could be used to plan, coordinate and resource mental health services to meet population needs. It was envisaged that the NMHSPF would continue to be refined based on user experience, emerging evidence and clinical advances.


Over a two year period jurisdictions were given the opportunity to test the NMHSPF (AUS V1.0) in mental health service planning. Western Australia and Queensland applied the NMHSPF to the development of detailed service plans while other jurisdictions tested the NMHSPF on smaller-scale planning activities. This testing period identified a few issues that needed to be refined and corrected to improve the usefulness and accuracy of the NMHSPF.

Refinement process (Phase 2): 2016

In 2016, the Australian Government Department of Health funded The University of Queensland (UQ) to undertake a program of work designed to examine identified issues and implement priority fixes and enhancements to AUS V1.0. An Expert Panel consisting of representatives from medical, nursing and allied health fields, consumer and carers, representatives from the NGO sector, peak bodies and research organisations was convened to provide advice on identified areas of the original service modelling contained within the NMHSPF. A Jurisdictional Panel was also established to provide feedback on problems and desired refinements to the NMHSPF based on field-testing experiences in the preceding years. The Jurisdictional Panel also provided relevant services and service utilisation data to complement the work of the Expert Panel, and to advise on future training and support needs for using the NMHSPF.

Phase 2 resulted in NMHSPF AUS V2.0 which was deemed suitable for use by jurisdictional (state and

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territory) and sub-jurisdictional (Local Hospital Network (LHN) and Primary Health Network (PHN)) health planners.

Fifth National Mental Health and Suicide Prevention Plan: 2017 - 2022

The Fifth National Mental Health and Suicide Prevention Plan (2017) endorsed the continuing development of the NMHSPF and the release of NMHSPF planning tools to support integrated mental health service planning and the development of joint regional mental health and suicide prevention plans.

Version 2 release to jurisdictions and PHNs accompanied by initial training program roll-out: 2017 – 2018

In 2017 the Australian Government Department of Health commenced licensing and roll out of the NMHSPF AUS V2.0. The UQ was commissioned to deliver the NMHSPF training program to jurisdictions, PHNs and LHNs.

The NMHSPF is a sophisticated model and the NMHSPF-PST is a complex tool which provides multiple options to tailor output predictions to meet the needs of local mental health planners. Successful application requires a sound understanding of its structure, underlying assumptions and limitations, as well as the development of appropriate skills in using the NMHSPF-PST. To limit the risk of unskilled and inappropriate use of the NMHSPF, in 2017 the Australian Government Department of Health restricted access to the NMHSPF materials and NMHSPF-PST to employees of PHNs, LHNs and jurisdictions whose organisation has entered into a licence agreement and who have completed the required training. As at late-2018, 202 users have completed the training program and are considered licensed users of the NMHSPF.

Phase 3: 2018 – 2021

The Australian Government Department of Health in conjunction with states and territories commissioned UQ to undertake a program of work spanning three years to further develop and refine aspects of the NMHSPF. This project commenced in March 2018 and is scheduled to be completed in 2021. The NMHSPF Steering Group whose membership is drawn from the Mental Health Principal Committee (MHPC) provides governance to the project.

Priorities for development include:

- Revising the epidemiology of the NMHSPF to incorporate the latest evidence and provide a structure for regular updating.
- Refining the care profiles of the NMHSPF to better account for the needs of special populations including:
  - Aboriginal and Torres Strait Islander populations;
  - People living in rural and remote areas;
  - Culturally and linguistically diverse groups;
  - Forensic populations; and
  - Youth groups.
- Implementing incremental technical fixes and enhancements in response to licensed user feedback.
Introduction to the NMHSPF

- Supporting the Australian Institute of Health and Welfare’s (AIHW) transition of the NMHSPF-PST to a new technology platform.
THE NMHSPF MODEL: KEY CONCEPTS

The NMHSPF model (Figure 2) combines the best available evidence and expert opinion on the prevalence of mental illness and need for mental health services, the types and levels of mental health care required for different need groups, and efficient standards of mental health service operation to deliver this care. These inputs allow calculation of the resources required to deliver adequate mental health services to a nominal population of 100,000 people in each age group or a selected population region such as Australia, a state or territory, LHN or PHN. Appendix 3 provides further background on the development of the model. The NMHSPF model:

1. Estimates the number of people in a defined population with mental illness in a year, by age and levels of severity, and sets service demand targets for those who will require intervention (epidemiology);
2. Describes the full spectrum of interventions from self-help, digital and low intensity interventions to primary and specialist clinical treatment, to mental health community support services (taxonomy and staffing profiles);
3. Describes service needs within age and severity target groups, including types of intervention, intensity, provider and current funder (care profiles and funder type); and
4. Drawing on all of the above, produces resource estimates to deliver those interventions over a 12 month period.

The NMHSPF model

Figure 2: The NMHSPF model
**Epidemiology**

The NMHSPF starts with the Australian average population and stratifies it into ‘need groups’ based on severity of mental health diagnosis or other identified mental health need, and functioning. NMHSPF estimates of the prevalence of mental illness in the Australian community are primarily drawn from burden of disease studies, supplemented by other national and international survey data where necessary. This allows consistent coverage of the full range of mental illness, including diagnoses like the psychoses, eating disorders and personality disorders which are not normally covered by national household surveys. The collated data are used to quantify the 12-month prevalence of mental illness in Australia by age group and apportion this prevalence across three levels of severity (MILD, MODERATE, SEVERE) (Figure 3).

**Figure 3: The NMHSPF epidemiology**
Table 1: Example disorders considered in and out of scope for the NMHSPF

<table>
<thead>
<tr>
<th>In-scope primary disorders</th>
<th>Out-of-scope primary disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosis</td>
<td>Substance use disorders</td>
</tr>
<tr>
<td>Mood disorders</td>
<td>Autism spectrum disorders</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>Dementia</td>
</tr>
<tr>
<td>Personality disorders</td>
<td>Intellectual disability</td>
</tr>
<tr>
<td>Eating disorders</td>
<td></td>
</tr>
<tr>
<td>Behavioural disorders</td>
<td></td>
</tr>
</tbody>
</table>

The NMHSPF has a specific way of defining severity which may differ from other sources. In the NMHSPF, SEVERE, MODERATE and MILD refer to the intensity of mental health service needs for people with a formally diagnosed mental illness, which is more closely related to role impacts and impairment in psychosocial functioning than clinical symptoms. SEVERE mental illness relates to individuals with significant days out of role, distress or impairment who would require support from specialised mental health services, while MODERATE and MILD mental illnesses are expected to be able to be largely managed in a primary care setting with limited specialist input.

In addition to the severity groups above there are also other groups modelled in the NMHSPF who have a possible need for services. Early intervention includes people experiencing symptoms of mental illness or indicators of distress which do not meet threshold for a formal mental illness diagnosis, but who may require intervention to prevent progression to a formal diagnosis and to manage distress. Relapse prevention includes people who have a lifetime history of mental illness but do not currently have a 12-month diagnosis of mental illness who may require ongoing treatment and support to remain well. A smaller proportion of each of these groups has an expected demand for individually-tailored mental health services. Evidence based universal mental health promotion and indicated mental illness prevention services are also included at a population level.

Prevalence estimates are provided for five age groups: 0-4, 5-11, 12-17, 18-64 and 65+. These five age groups form the basis of all modelling of service needs and resource requirements within the NMHSPF-PST. Overall prevalence by level of severity is shown in Figure 4. The model is limited to primary diagnoses of mental disorders (see Table 1). However, it also includes an adjustment factor for populations with some related disorders (such as substance use disorders, autism spectrum disorders, intellectual disability and dementia) that would not be well captured in household surveys but would have higher rates of mental illness than the general community and require a mental health service intervention. Resource estimates for one of these groups, those aged 65+ with behavioural and psychological symptoms of dementia (BPSD), are reported on separately from people aged 65+ years with other mental health needs.

As not all prevalent cases will require treatment, a modifier is included to adjust for expected demand for mental health services. The NMHSPF models contact with services for 100% of SEVERE, 80% of MODERATE and 50% of MILD cases of mental illness, as well as smaller proportions of the early intervention and relapse prevention groups (varying percentages modelled based on available
data). It is expected that those with a mental illness who do not have a demand for individually-tailored mental health services may be accessing other forms of help. This may include self-help materials such as books and websites (which do not require clinician input) or seeking support from family and friends. Alternatively, these individuals may choose not to access treatment as their illness may spontaneously remit and they may not be experiencing any significant disability from their illness, despite meeting the threshold for a diagnosis.

For each age group, the prevalence and demand rates are used to model the populations expected to require services across the five levels of severity. At each level of severity, the target group is then further subdivided into need groups according to identifiable differences in their service needs, such as their level of complexity and functional disability. For example, within the severe target group, those who are likely to require a period of inpatient care within a 12 month period can be separated from those who will be able to receive all of their treatment and support in the community. Using available evidence on service requirements, data on patterns of service utilisation and expert consensus, multiple need groups have been defined for each age group (Figure 5). Across the five age groups, the NMHSPF defines a total of 155 need groups. Further information on the development of the need groups can be found in appendix 4.

Figure 4: Prevalence of mental illness in Australia by levels of NMHSPF defined severity (2011)
Figure 5: Conceptual representation of a NMHSPF epidemiology flow chart
**Taxonomy**

The NMHSFPF describes the range of services required within a comprehensive mental health system, using an agreed national **taxonomy** of mental health services across the spectrum of service delivery, within five key streams: mental health promotion, mental illness prevention, primary and specialised clinical ambulatory mental health services, specialised bed-based services, and specialised mental health community support services (Figure 6). Given that each state and territory structures mental health services differently, the taxonomy provides a common language and clear definitions of core mental health service components and functions. Each stream is further subdivided into service categories, service elements and activities. The complete taxonomy is shown in Figure 7. The building blocks of the taxonomy and care profiles are ‘**service elements**’; each service element relates to a specific aspect of mental health care (e.g. an acute inpatient service or mental health assessment). Each service element in the taxonomy is accompanied by a detailed description of the service including activities that may be provided, types of staff that may deliver the service and operational parameters (e.g. hours of operation, average length of stay and annual readmission rates). Appendix 5 includes further information about the development of the taxonomy.

![Figure 6: Conceptual representation of the NMHSFP taxonomy structure](image-url)
Figure 7: NMHSPF taxonomy
**Staffing profiles**

A staffing profile (Figure 8) is a tool that allows for a mix of staff across different workforce categories to be assigned to an intervention at a particular ratio. For bed-based and team services (mainly state-funded services but also some team-based community support sector services), there is a separate and unique staffing profile for each service element in the taxonomy, detailing the types and hours of providers involved in that team. Staffing profiles include a roster of the staff mix and hours of service delivery, salaries and administrative overhead costs, and allowance for staff leave and public holidays (for an example staffing profile see Figure 9). Further information on the staffing profiles is provided in appendix 6. Service elements delivered by an individual provider do not have staffing profiles but are directly allocated a provider type, based on the minimum qualifications appropriate to deliver that service.

Within the NMHSPF model, estimates of required beds, workforce FTEs, costs and activity are modelled at desirable, efficient operational rates. See appendix 7 for details on beds. Outputs are based on averaged national staffing profiles and salaries. The workforce categories used in the NMHSPF for both staffing profiles and individual providers are shown in Table 2 (For more information see appendix 8). Each staff type is associated with a salary and overhead costs. The NMHSPF models notional staff prices for the year 2011 based on average national pricing data (further information on cost modelling is included in appendix 9). These salaries can be customised and/or inflated to prices for subsequent years.

![Figure 8: NMHSPF staffing profiles](image)
<table>
<thead>
<tr>
<th>Total FTE</th>
<th>FTE</th>
<th>Other (incl. TQ)</th>
<th>Net consumer available daily service hours</th>
<th>Net consumer annual service hours per FTE</th>
<th>Weighted hours</th>
<th>FTE/FTE</th>
<th>Overheads</th>
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</table>

**Note:**
- **FTE**: Full-Time Equivalent
- **Other**: Additional hours (including TQ)
- **Net consumer available daily service hours**: Hours available per FTE
- **Net consumer annual service hours per FTE**: Hours available per FTE
- **Weighted hours**: Weighted hours per FTE
- **Overheads**: Overheads

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**Figure 9: Example of a NMHSPF staffing profile**
### Table 2: Workforce categories and staff types in the NMHSPF

<table>
<thead>
<tr>
<th>Workforce category</th>
<th>Description</th>
<th>Staff type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>Medically trained professionals providing mental health care. Registrars and junior medical officers are included only in the context of team based staffing profiles.</td>
<td>GP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychiatrist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialist Other (e.g. geriatricians and paediatricians)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Registrar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior Medical Officer</td>
</tr>
<tr>
<td>Tertiary Qualified</td>
<td>University trained (or equivalent) with a minimum three year Bachelor degree in a discipline related to mental health care. ‘Other’ includes other professionals such as physiotherapists, speech therapists, pharmacists, and tertiary qualified program managers/supervisors employed in the community support sector.</td>
<td>Nurse Practitioner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nurse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social Worker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychologist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Occupational Therapist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other (e.g. Pharmacist)</td>
</tr>
<tr>
<td>Vocationally</td>
<td>Primarily a non-clinical workforce (i.e. not a university trained clinician) with a TAFE level qualification up to Advanced Diploma level in mental health or a related area. Includes technicians or coaches trained to deliver low-intensity psychological interventions (who may possess, but do not require, a tertiary qualification).</td>
<td>MH Worker</td>
</tr>
<tr>
<td>Qualified</td>
<td></td>
<td>Enrolled Nurse</td>
</tr>
<tr>
<td>Peer Worker</td>
<td>Roles that must be performed by someone with lived experience as a mental health service consumer or mental health carer.</td>
<td>Consumer Peer Worker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carer Peer Worker</td>
</tr>
</tbody>
</table>
Funder type

The NMHSPF model was built on the principle of considering the service functions required to meet the needs of people with mental illness, rather than the location, format or provider of that service. To aid planners to identify their likely areas of responsibility within the modelled benchmarks, the NMHSPF-PST generates resource estimates by funder by drawing on default funder types which have been applied to each service element in the care profiles (Figure 10 and Table 3). These types represent a national average of the current mix of services rather than an optimal model, and designate the entity deemed primarily responsible for funding and administrative oversight of each aspect of the NMHSPF model (see appendix 10 for more information on the application of the default funder labels). The funder types are described in Table 3. Default funder allocations can be modified by extended users of the NMHSPF-PST to reflect local service configurations.

Figure 10: Funder types in the NMHSPF
<table>
<thead>
<tr>
<th>Funder type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>C'wealth</td>
<td>Structured psychological therapies delivered by programs such as Better Access, psychological therapy services for hard to reach groups (formerly ATAPS) and low intensity interventions such as <em>beyondblue</em>’s NewAccess program; clinician-led web-based therapies; mental health services subsidised by the Medicare Benefits Schedule (MBS); medicines funded by the Pharmaceutical Benefits Scheme (PBS); and mental health nurses working in primary care and private psychiatry settings. Also includes similar types of services funded through private payment or via insurance.</td>
</tr>
<tr>
<td>State</td>
<td>Public sector specialised bed-based mental health services, as well as other services provided by the state mental health system, e.g. acute care services and community mental health teams.</td>
</tr>
<tr>
<td>CW &amp; St</td>
<td>Community psychosocial support services usually delivered in the non-government sector, such as individual support and rehabilitation, peer work, and carer support.</td>
</tr>
<tr>
<td>Private insurer</td>
<td>Mental health services provided in private hospitals.</td>
</tr>
<tr>
<td>Non-MH</td>
<td>Physical health care provided by general practitioners, services provided by paediatricians or geriatricians, general hospital beds, family support services for 0-17 year olds where they would be provided by child protection or other agencies. Note that this category does not cover all of the non-mental health care that would be required by people with mental illness.</td>
</tr>
</tbody>
</table>
**Care profiles**

There are 155 care profiles which describe the average type and quantity of mental health care needed to meet the mental health service requirements for individuals in a need group during a 12-month period (Figure 11). Care profiles draw on service elements from the taxonomy and their associated staffing categories and staffing profiles to describe the services needed. For each service element, the care profile specifies the percentage of the target group likely to require that service, the average number of occasions on which this service will be required, and the average duration of each service occasion, along with the staffing and funder responsible. These detailed inputs form the basis for calculating the resources required to meet the needs of the target group. An example care profile is shown in Figure 12.

**Figure 11: NMHSPF care profiles**

The level of care specified in a care profile is deemed adequate to meet the needs of the target group, on average; anything less is considered unsatisfactory. The quantum of care required has been determined by combining information from research, various administrative and survey data sources, and expert consensus. As the care requirements are presented as an average across the whole population need group, actual service utilisation and needs are expected to vary across individuals within that group. The NMHSPF is modelled from a system-level perspective in order to
calculate estimates of the overall resources required to meet the needs of a population group and does not provide individualised care pathways. Appendix 11 includes modelling details for selected care profiles.

At the lower end of need, the NMHPSF enumerates the number of people in the early intervention, relapse prevention and MILD mental illness populations who require individually-tailored mental health services. The care profiles for these groups describe a range of interventions, including assessment, self-help and watchful waiting from a GP, clinician led web-based psychological interventions, low intensity structured psychological therapies (SPT) delivered by vocationally qualified staff and SPT delivered by tertiary qualified and medical staff within primary care.

For people with a MODERATE mental illness, the NMHSPF care profiles describe interventions such as clinician led web-based psychological interventions for less complex cases, SPT delivered by tertiary qualified and medical staff within primary care, assessment and treatment from private psychiatrists (particularly for those with more complex disorders), and integrated physical health care.

At the higher end of need, the NMHSPF identifies a large number of different need groups for people with SEVERE mental illness, with interventions delivered by a mix of Commonwealth-funded or subsidised and state-/territory-funded clinical services as well as mental health community support services. For those with less complex SEVERE disorders, the NMHSPF care profiles include services such as SPT delivered by tertiary qualified and medical staff within primary care, assessment and treatment from private psychiatrists, monitoring and ongoing management from mental health nurses working in primary care settings, integrated physical health care, community support and rehabilitation, and access to mental health acute inpatient care when required. At the more complex end of SEVERE, a range of specialised community and bed-based mental health services are required, traditionally delivered through the state-funded public mental health sector.

While some care profiles correspond to a discrete subgroup of individuals within the target group defined by a particular age and severity level, others describe service requirements which cannot be limited to a specific group, or cannot be quantified in individual terms. These are called top-ups, and are standalone resource estimates that sit alongside the other care profiles. For example, people in various need groups or levels of severity may require access to emergency department services, but cannot be separately identified from those who require other types of mental health service interventions. As a result, emergency department users cannot be modelled as a discrete subgroup, but the resources required to deliver these services need to be included in the modelling. A top-up is therefore used. Other items modelled as top-ups include: triage and assessment conducted by the public sector; consultation and liaison services; inpatient admissions for child and youth (0-17) and older adult (65+ BPSD) age groups; additional care coordination required for parents with a mental illness; high intensity packages of individual support and rehabilitation; and respite care. Appendix 12 includes detail on the modelling of the top ups.

Mental health promotion and mental illness prevention

In the NMHSPF, the resources required to deliver mental health promotion and mental illness
prevention activities at the community and population level are modelled based on total current expenditure in the absence of available benchmarks. An expert working group provided detailed advice about the interventions in this sector with the most supporting evidence, and recommended that future program development focus on these evidence-based interventions.
### Care Profile Title: MOD_B (Moderate, Complex)

**Age group:** 18-64 years  
**Description:** Moderate with psychosocial and other complexities

<table>
<thead>
<tr>
<th>Activity</th>
<th>% Pop'n applicable</th>
<th>Occasions of Service</th>
<th>Activity Duration</th>
<th>Activity measure</th>
<th>Staff Cat*</th>
<th>Label</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Mental Health Assessment</td>
<td>25%</td>
<td>1</td>
<td>15 min</td>
<td>min</td>
<td>GP</td>
<td>C'Health</td>
<td>Focus on Comprehensive Psychosocial Assessment</td>
</tr>
<tr>
<td>Comprehensive Mental Health Assessment</td>
<td>100%</td>
<td>1</td>
<td>30 min</td>
<td>min</td>
<td>GP</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Comprehensive Mental Health Assessment</td>
<td>75%</td>
<td>1</td>
<td>45 min</td>
<td>min</td>
<td>Psychiatrist</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Comprehensive Physical Assessment</td>
<td>100%</td>
<td>1</td>
<td>30 min</td>
<td>min</td>
<td>GP</td>
<td>Non-MH</td>
<td></td>
</tr>
<tr>
<td>Structured Psychological Therapies</td>
<td>50%</td>
<td>12</td>
<td>45 min</td>
<td>min</td>
<td>Tertiary Qualified</td>
<td>C'Health</td>
<td>SPT by different providers not necessarily mutually exclusive</td>
</tr>
<tr>
<td>Structured Psychological Therapies</td>
<td>30%</td>
<td>12</td>
<td>45 min</td>
<td>min</td>
<td>Psychiatrist</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Structured Psychological Therapies</td>
<td>20%</td>
<td>12</td>
<td>45 min</td>
<td>min</td>
<td>GP</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Monitoring &amp; Ongoing Management</td>
<td>100%</td>
<td>3</td>
<td>15 min</td>
<td>min</td>
<td>GP</td>
<td>Non-MH</td>
<td></td>
</tr>
<tr>
<td>Pharmacotherapy Prescription</td>
<td>30%</td>
<td>1</td>
<td>15 min</td>
<td>min</td>
<td>Psychiatrist</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Pharmacotherapy Review</td>
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<td>15 min</td>
<td>min</td>
<td>Psychiatrist</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Pharmacotherapy Prescription</td>
<td>70%</td>
<td>1</td>
<td>15 min</td>
<td>min</td>
<td>GP</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Pharmacotherapy Review</td>
<td>70%</td>
<td>3</td>
<td>15 min</td>
<td>min</td>
<td>GP</td>
<td>C'Health</td>
<td></td>
</tr>
<tr>
<td>Group Based Peer Work - Moderate</td>
<td>40%</td>
<td>6</td>
<td>60 min</td>
<td>min</td>
<td>Staffing profile</td>
<td>CW &amp; St</td>
<td></td>
</tr>
</tbody>
</table>

**Description of Epidemiology**

20% of the Moderate Population. Approximately two thirds have anxiety and depression and one third have a range of other disorders including comorbidity issues. Disability Weight 0.3. 8% have a primary diagnosis of drug and/or alcohol with MI as a comorbidity. 4% have Intellectual Disability as a primary diagnosis with mental illness as a secondary diagnosis.

**Description of Group**

Individuals experiencing Moderate disorders as described in MOD_A. This population group may experience more psychosocial complexities and/or comorbid physical health or drug and alcohol problems. Generally this group would need more care coordination. Some individuals may not have been responding to treatment at the mild level and so a greater proportion require specialist psychiatric care and peer support work.
Resource outputs

Using the inputs described in previous sections, the NMHSPF-PST can report on a range of benchmarks useful for mental health service planning, for user-selected populations (such as a PHN or LHN) (Figure 13 and 14). These outputs include the estimated numbers of people requiring services, number of occasions and hours of service delivery, workforce FTEs, beds and prices. Occasions of service are measured as the number of contacts or visits with a service provider, of varying duration. Hours of service delivery can be presented from the consumer perspective (i.e. hours of care received) or from the provider perspective (i.e. hours of staff time), which differ for activities involving staff teams or consumer groups. The NMHSPF-PST includes population projections by age group from 2011-2026 for Local Government Areas (LGAs), LHNs, PHNs, states, territories and Australia. Users can select their preferred region for reporting and source of the population data, including national projections from the Commonwealth government, or jurisdictional projections sourced from each state and territory. A standard suite of semi-customisable reports is provided with the NMHSPF-PST (Figure 15), and users can further tailor the outputs of these pivot tables to answer specific planning questions.

Figure 13: Using the NMHSPF-PST
Population data

State/Territory and Commonwealth government population estimates and annual projections for all LGAs in Australia, by age

Population data Divided into NMHSPF age groups and financial years

LGA populations Used to derive population estimates for LHN and PHN catchment

Population projections by area, year and age group drawn on by the NMHSPF Planning Support Tool

Figure 14: Population data for the NMHSPF

NMHSPF - Planning Support Tool

Standard Report 1 - Population with mental illness

Selected population jurisdiction: Australia

Standard Report 1 provides an overview of the population prevalence and demand for treatment identified in the model. Information is included on the total population analysed by level of severity and the modelled prevalence and treatment rates. Details on epidemiology and demand modelling are provided in the Technical Manual. The standard report considers the Australian population. Sub-populations can be selected from the Population Region Selector and analysed for years 2014 to 2025. Please note the default population source detailed at bottom of report.

Report 1A: Prevalence and treated population totals

<table>
<thead>
<tr>
<th>Sum of Values Australia</th>
<th>Column Labels</th>
<th>0-4</th>
<th>5-11</th>
<th>12-17</th>
<th>18-64</th>
<th>65+</th>
<th>65+ BPSD</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td></td>
<td>1,592,010</td>
<td>2,126,610</td>
<td>1,730,909</td>
<td>15,084,946</td>
<td>3,630,129</td>
<td>-</td>
<td>24,174,604</td>
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<tr>
<td>Prevalence population</td>
<td></td>
<td>350,781</td>
<td>615,600</td>
<td>464,818</td>
<td>7,687,770</td>
<td>1,020,961</td>
<td>147,770</td>
<td>5,887,699</td>
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<td>Early intervention</td>
<td></td>
<td>105,073</td>
<td>285,646</td>
<td>200,820</td>
<td>2,618,637</td>
<td>395,890</td>
<td>-</td>
<td>3,606,065</td>
</tr>
<tr>
<td>Relapse prevention</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,819,730</td>
<td>221,232</td>
<td>-</td>
<td>2,040,963</td>
</tr>
<tr>
<td>Mild</td>
<td></td>
<td>140,405</td>
<td>188,366</td>
<td>147,877</td>
<td>1,424,911</td>
<td>210,298</td>
<td>72,676</td>
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<td>70,202</td>
<td>94,286</td>
<td>75,495</td>
<td>720,789</td>
<td>105,159</td>
<td>42,288</td>
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<td></td>
<td>35,101</td>
<td>47,301</td>
<td>40,625</td>
<td>503,703</td>
<td>68,363</td>
<td>32,806</td>
<td>747,919</td>
</tr>
<tr>
<td>Treated population</td>
<td></td>
<td>266,538</td>
<td>400,856</td>
<td>315,174</td>
<td>2,665,426</td>
<td>335,377</td>
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<tr>
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<td>105,073</td>
<td>138,943</td>
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<td>20,692</td>
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<td>967,075</td>
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<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>355,466</td>
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<td>-</td>
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<td>56,162</td>
<td>75,429</td>
<td>60,396</td>
<td>576,631</td>
<td>84,127</td>
<td>33,830</td>
<td>886,575</td>
</tr>
<tr>
<td>Severe</td>
<td></td>
<td>35,101</td>
<td>47,301</td>
<td>40,625</td>
<td>503,703</td>
<td>68,363</td>
<td>32,806</td>
<td>747,919</td>
</tr>
</tbody>
</table>

Figure 15: Example of a standard report in the NMHSPF-PST
IMPORTANT ASSUMPTIONS OF THE NMHSPF MODEL

It is important to be aware of key underlying principles and assumptions of the NMHSPF when interpreting outputs from the NMHSPF-PST, and the limitations of the NMHSPF in application to unique circumstances.

An integrated mental health service system
The NMHSPF assumes that all elements of the mental health and other health and social service systems are operating in an adequate manner to support people with mental illness. The efficient rates modelled can only be achieved with a balanced investment across all service sectors, which may involve significant scaling up or reorientation of services relative to current practice. Therefore individual outputs should not be considered in isolation. Benchmarks for each part of the mental health service system are dependent on the other aspects also being in place, and gaps in one area may have flow on effects for the resources required in other sectors.

Focus on mental health care
The scope of the NMHSPF is limited to services for people with mental illness which address that illness. It does not include drug and alcohol services or physical health care required by a person with mental illness. Non-health services such as public housing, income support and criminal justice are also not detailed in the care profiles. However these complementary services are likely to be required by some people with mental illness to adequately meet their other health and social care needs. As per above, the NMHSPF model assumes these other services are in place and accessible to people with mental illness.

A national average service model
The NMHSPF provides national average estimates of required resources for mental health service delivery, based on the national average prevalence of mental illness. Outputs from the NMHSPF-PST are based on averaged national staffing profiles and salary rates and do not account for regional variations in unit design, staff salaries and workforce characteristics. Tailoring of the NMHSPF-PST standard output reports to a particular region only adjusts for the size and age distribution of the selected population.

Currently, the NMHSPF does not take into account variations from the national average likely to arise from factors such as rurality, socio-demographic variability across regions, and clustering of higher needs groups within particular regions, such as people with severe and complex mental illness in boarding houses. It also does not consider the specific mental health needs of special populations such as culturally diverse populations, including Aboriginal and Torres Strait Islander peoples, or people with mental illness within the criminal justice system. All of these factors may affect the relative demand for mental health services, the relative cost of delivering the same quality of service, and/or the types of service models implemented, in turn affecting the resources required for service delivery. While the NMHSPF epidemiology counts the whole Australian population, including these subgroups, it does not consider adjustments to the standard model which would be
required to address the specific needs of these populations or to deliver services in rural areas.

Development of the NMHSPF is an iterative and ongoing process. Further enhancement of the NMHSPF model is underway to account for the mental health needs of these specialty populations, including:

- Aboriginal and Torres Strait Islander peoples;
- People with mental illness in rural and remote areas;
- Culturally and linguistically diverse populations;
- Forensic mental health; and
- Youth with mental illness (i.e. aged 12-17 and 18-24 years).

In the interim, outputs from the NMHSPF-PST may need to be adjusted for the needs of these specialty populations within certain areas. Adjustments to address these factors need to occur as a second stage of planning, based on local knowledge of the catchment population and service context.

**Sufficient population size**
While the NMHSPF modelling is attributed to a nominal age specific population of 100,000 people, the outputs of the model will in reality only approach viability for planning with total populations of all ages of at least 250,000 people. This is particularly the case for resourcing specialised bed- or team-based mental health services which serve relatively small proportions of those with mental disorders in the general population. In planning for smaller regions it should therefore be noted that the model may still accurately assess service demand, but creative solutions may be required for how the need is resourced.

**Efficient service operation**
Within the NMHSPF model estimates of required beds, workforce FTEs, costs and activity are modelled at desirable, efficient operational rates which may not reflect current service delivery. Notional Australian average/benchmark bed occupancy and readmission rates have been applied to the NMHSPF modelling of the number of beds required for each target population (see appendix 7). Likewise the NMHSPF makes assumptions about optimal proportions of staff time dedicated to consumer service delivery time versus staff meetings, training and supervision, research, and travel (generally 67% consumer-related time for public sector clinicians, 85% for private sector clinicians, and around 70% for community support services). More information on consumer service delivery time is included in appendix 6. As these rates may not be consistent with current practice, interpretation of outputs from the NMHSPF-PST requires an awareness of the underlying assumptions.
APPLICATION OF THE NMHSPF

The NMHSPF provides a strong foundation for integrated regional planning across the primary health, specialised mental health and nongovernment sectors through its modelling of the full spectrum of needs and establishment of a consistent taxonomy and definitions of required service types. It provides guidance about the right mix and level of services and the workforce required to deliver those services currently, and into the future. The NMHSPF suite of documents offers a nationally consistent language to describe mental health services in a given region, and how these services can work together to provide care along the treatment continuum.

At the local level the NMHSPF provides a nationally endorsed benchmark for services, against which available service capacity can be compared to inform identification of priorities for planning and service development. Good knowledge of the available service system and patterns of use is required to complete this process. It is important that planners recognize this need for interpretation and application of the NMHSPF outputs to the local context and have access to appropriate knowledge and information about the target population and service system to undertake this process.

Benchmarks for mental health service delivery from the NMHSPF can be used to help inform the development of mental health plans. These benchmarks are only useful if they can be combined with information about current service delivery within each region, aggregated into a similar format for comparison. The NMHSPF models the service requirements for an optimally functioning mental health system, including significant expansion of services and workforce capacity in several areas. These benchmarks are expected to be long-term goals for the service system and will require scaling up and adjustment over time. The most useful application of NMHSPF benchmarking when undertaking a gap analysis with current service provision is not to identify the magnitude of gaps, but to identify areas of relative underinvestment and priority areas for development that should be considered in planning for future mental health service delivery. Regional adjustment or interpretation of outputs from the NMHSPF will also need to be considered where the national average model is not a good fit to local circumstances, such as in areas with small, dispersed and/or culturally and linguistically diverse populations. While not available now, it is expected that future development of the NMHSPF will provide more guidance about meeting the mental health service needs of these populations.

When considering the NMHSPF benchmarks, integrated planning with other partners in mental health service delivery is essential to ensure that all parts of the system are in place and to negotiate innovative solutions to address any identified priority areas. These partners may include, for example, PHNs, LHNs, state/territory mental health planning branches, government agencies involved in local service delivery such as the Australian Government Department of Health, Department of Social Services and National Disability Insurance Agency, local service delivery organisations, and agencies involved in planning for related sectors such as drug and alcohol services, physical health care and social services. Resource projections from the model for each service sector or type rely on other parts of the model also being in place. Although the NMHSPF model identifies a funder responsible for each service element in the care profiles, this allocation is
Introduction to the NMHSPF

Based on the current system and is not intended to be prescriptive. Roles and responsibilities in addressing the mental health service needs identified in the NMHSPF are expected to be flexible to encompass current and preferred future service configurations in each region.

Finally, the NMHSPF provides care profiles and resource estimates for different age groups, severity levels, service types and sectors of the mental health system, and descriptions of efficient service operation. It does not provide information about how to implement this system. There are important additional considerations, such as the need for seamless transitions between services for different ages, for example between the 12-17 and 18-64 years age groups, and consideration of pathways through the mental health system and integration between different mental health services, between mental health and other health care services, and between the mental health system and other sectors such as social services and criminal justice. Other areas beyond the scope of the NMHSPF model include capital costs of new mental health infrastructure and the resources required for workforce development. Therefore mental health planners may find the NMHSPF and its outputs to be one helpful tool within their broader planning processes.