PRIMARY HEALTH NETWORK

After Hours Primary Care

NEEDS ASSESSMENT

September, 2020

phn
HUNTER NEW ENGLAND AND CENTRAL COAST
An Australian Government Initiative

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We respect and honour Aboriginal and Torres Strait Islander Elders past, present and future.

We acknowledge the stories, traditions and cultures of Aboriginal and Torres Strait Islander peoples on this land and commit to building a brighter future together.

Table of Contents

Executive Summary

This document presents an overview of key After-Hours (AH) health and service needs in the Hunter New England Central Coast Primary Health Network (HNECC PHN). It has been prepared with input from HNECC PHN's Health Intelligence and Performance Team, Consan Consulting, Nexus Management Consulting and Nous Group Consulting.

The order of AH needs summarised in this list below are not reflective of a priority ranking.

AH Need: Improve access to AH primary care for residents in the New England – in particular in Peel and Mehi

In the New England, in particular the Peel and Mehi Clusters, it was identified that there are minimal service options available for after-hours primary care outside of GP on call arrangements. As a result, residents of many communities frequently present to EDs after-hours for lower urgency care, despite this not being their preferred option.

AH Need: Improve access to AH primary care for residents in the Mid-Coast

The Mid-Coast Cluster (covering the Mid-Coast LGA) was identified as a high priority for improving access to AH primary care due to the high population health need for after-hours care, low service availability and high levels of unmet demand evidenced by relatively high rates (per 1000 population) of lower urgency presentations to emergency departments (EDs) and lower urgency calls to NSW Ambulance.

AH Need: Improve access to AH primary care for Aboriginal People

In the HNECC PHN region, 6.4% of the population identify as Aboriginal and/or Torres Strait Islander. There are 9 Aboriginal Community Controlled Health Organisations (ACCHOs) which provide 22 clinics. However, none are open during the after-hours period, leaving mainstream GP clinics and hospitals as the only options. When ACCHO clinics are closed, 68% advise their patients to attend the local hospital, rather than a mainstream AH primary care service. Aboriginal people present at the ED for lower urgency issues at a much higher rate than non-Aboriginal people. 12% of after-hours lower urgency ED presentations in the HNECC PHN region are by people who identify as Aboriginal and / or Torres Strait Islander however in some LGAs this increases up to 48%.

AH Need: Improve access to AH Primary Care for Residents of Aged Care Facilities – in particular on the Central Coast and New England Region

Residential Aged Care Facility (RACF) places in the HNECC PHN region account for 19.5% of the available RACF places in NSW. HNECC PHN currently commissions the Aged Care Emergency Service which includes provision of a nurse-led telephone support line during the after-hours period. However, this service does not provide access to RACFs on the Central Coast and limited access to RACFs in the New England Region. In these locations, after-hours primary care is provided through GP on-call arrangements, with challenges (and often hospital transfers) occuring when the resident's usual GP is unavailable.

AH Need: Improve access to mental health practitioners after-hours

Stakeholders identified the need for improved access to qualified Primary Mental Health Care Practitioners during the after-hours period during the consultations conducted. Stakeholders reported this would better support people experiencing mental ill-health to access care in the community, rather than attending EDs.

AH Need: Improve access to AH primary care for people with disabilities including those living in group homes

Stakeholders also identified the need for improved access to after-hours primary care for people with disabilities. In particular, it was reported that many people living in group homes do not have a regular GP and therefore, are transferred to EDs for lower urgency care. These transfers could be better managed within a primary care setting and are disruptive to the individual's care routine. This issue is not limited to the after-hours period and there is scope for improved access and inclusivity of people with a disability in future urgent care initiatives.

AH Need: Improve availability of AH pharmacy services in some LGAs

It was identified that there is limited or no access to pharmacy services during the after-hours period in the following LGAs: Walcha, Uralla, Inverell, Gwydir, Dungog and Tenterfield. Additionally, on the Central Coast community stakeholders reported limited access to late night pharmacy services which served a barrier to utilising primary care services rather than acute care services during the AH period.

AH Need: Retain bulk billed access for health care card holders and children under 15 years

Cost was identified during the stakeholder consultations as a barrier for accessing after-hours primary care services, in particular for vulnerable / disadvantaged populations including those from a low socioeconomic background, Aboriginal and / or Torres Strait Islander people and for those with young children. As such, there is an identified need to retain bulk billing in after-hours services for these populations.

AH Need: Improve messaging and access to information to support decision making regarding where to seek care after-hours

In several areas in the HNECC PHN region, it has been identified that relatively high levels of after-hours lower urgency presentations to EDs are occurring despite after-hours primary care services being available. This has been identified in the following LGAs: Newcastle, Central Coast, Maitland, Tamworth, Upper Hunter Shire, Muswellbrook and Armidale. In these areas, improved messaging and information to support decision making regarding appropriate types of care to access for lower urgency conditions and what is available after-hours is likely to address this issue. Healthdirect Australia services including the service finder, symptom checker and After-Hours GP Helpline may be used to facilitate delivery of this information to the community.

AH Need: Support provision of AH primary care by local clinicians who are aware of local community needs and services

There was consensus amongst clinicians during the stakeholder consultation, that after-hours primary care needed to be provided by local clinicians, who have local knowledge of the community and its services. 68% of GP survey respondents identified delivery by local clinicians as an important service feature for AH care now and into the future. Acceptability by local clinicians has been identified in the needs assessment as a key enabler to service success and service provision by local clinicians was identified as a key feature for acceptability.

AH Need: Relieve burden of excessive after-hours on-call arrangements for rural GPs

Workforce shortages in rural areas results in significant hours of on-call responsibilities during the after-hours period for many GPs, who support both the local hospital facility and their own practice. This has implications for recruitment and retention of GPs in some areas and risks burn-out of clinicians.

AH Need: Improve referral processes and system integration between acute care services and AH primary care services

There were several opportunities identified in the stakeholder consultations for improvements to referral processes, communication and integration between acute care services and after-hours primary care services. This would improve continuity of care, which was identified by clinicians as a key service need within the after-hours period.

AH Need: Consider strategies to reduce redirection of patients from General Practice to the emergency department after-hours without local arrangements in place

When practices are closed, the after-hours arrangements they have in place support continued access to primary care. In the HNECC PHN region, 17% (71/406) of General Practices advise patients to attend the local hospital after-hours. Some practices in rural areas have arrangements in place with local hospitals and provide VMO cover to local hospitals. However, for practices in regional areas without such arrangements in place, there is an identified need to either improve messaging or establish after-hours arrangements in order to reduce unnecessary ED presentations.

AH Need: Greater access to urgent care appointments during business hours

In a community survey conducted by HNECC PHN, 69% (238/345) of respondents reported it was difficult to access the health provider they needed to see for urgent and after-hours care. Many respondents, in particular those from the Mid-Coast and New England reported waiting times of several weeks to see the local GP during business hours. They expressed that often their only option was to attend the ED, though this was not their preferred option. Whilst this need is not in scope for the after-hours primary care program, it may have broader implications on demand in the after-hours period.

Introduction

Background

Role of the Hunter New England Central Coast Primary Health Network

Hunter New England Central Coast Primary Health Network (HNECC PHN) is one of 31 PHNs in Australia that were established to increase the efficiency and effectiveness of health services for patients, particularly those at risk of poor health outcomes, and improve coordination of care to ensure patients receive the right care in the right place at the right time.

HNECC PHN receives funding from the Commonwealth Department of Health under the **After-Hours (AH) Primary Health Care Program** for the following key objectives:

1. Improving access to After-Hours Primary Health Care through effective planning, coordination and support for population based After-hours Primary Health Care;
2. Increasing the efficiency and effectiveness of After-Hours Primary Health Care for patients, particularly those with limited access to Health Services; and
3. Improving the availability of after-hours urgent care general practice (GP) services through working collaboratively with general practitioners (GPs).

The PHN Guidelines state that:

1. PHNs will work towards achieving these objectives on the basis of an understanding of the health care needs of their communities through analysis and planning.
2. They will do this through knowing what services are available and help to identify and address service gaps where needed, including in rural and remote areas, while getting value for money.

The Commonwealth Department of Health requires HNECC PHN to conduct an **After-Hours Needs Assessment** to:

1. Undertake population health planning and assess the after-hours service needs of the HNECC PHN Region;
2. Review and identify the market factors and drivers relevant to the provision of After-Hours Primary Health Care services in HNECC PHN Region;
3. Analyse relevant and current local and national health data, including but not limited to, data collected by Local Health Districts (LHDs);
4. Be informed by stakeholder and community consultation and market analysis; and
5. Determine priorities, and identify the strategies that will be implemented to better align funding to the HNECC PHN region's After- Hours Primary Health Care service needs.

Defining after-hours services

After-hours primary care services provide access for patients to clinical assessment / management of GP appropriate conditions in the after-hours period.

HNECC PHN is focused on *urgent* after-hours primary care, which is clinical assessment and management that could not wait till the next 'in-hours' period.

The after-hours period is defined by Department of Health as:

- outside 8 am to 6 pm weekdays
- outside 8 am to 12 noon on Saturdays,

- all day on Sundays and public holidays

After-Hours Services in the HNECC PHN Region include:

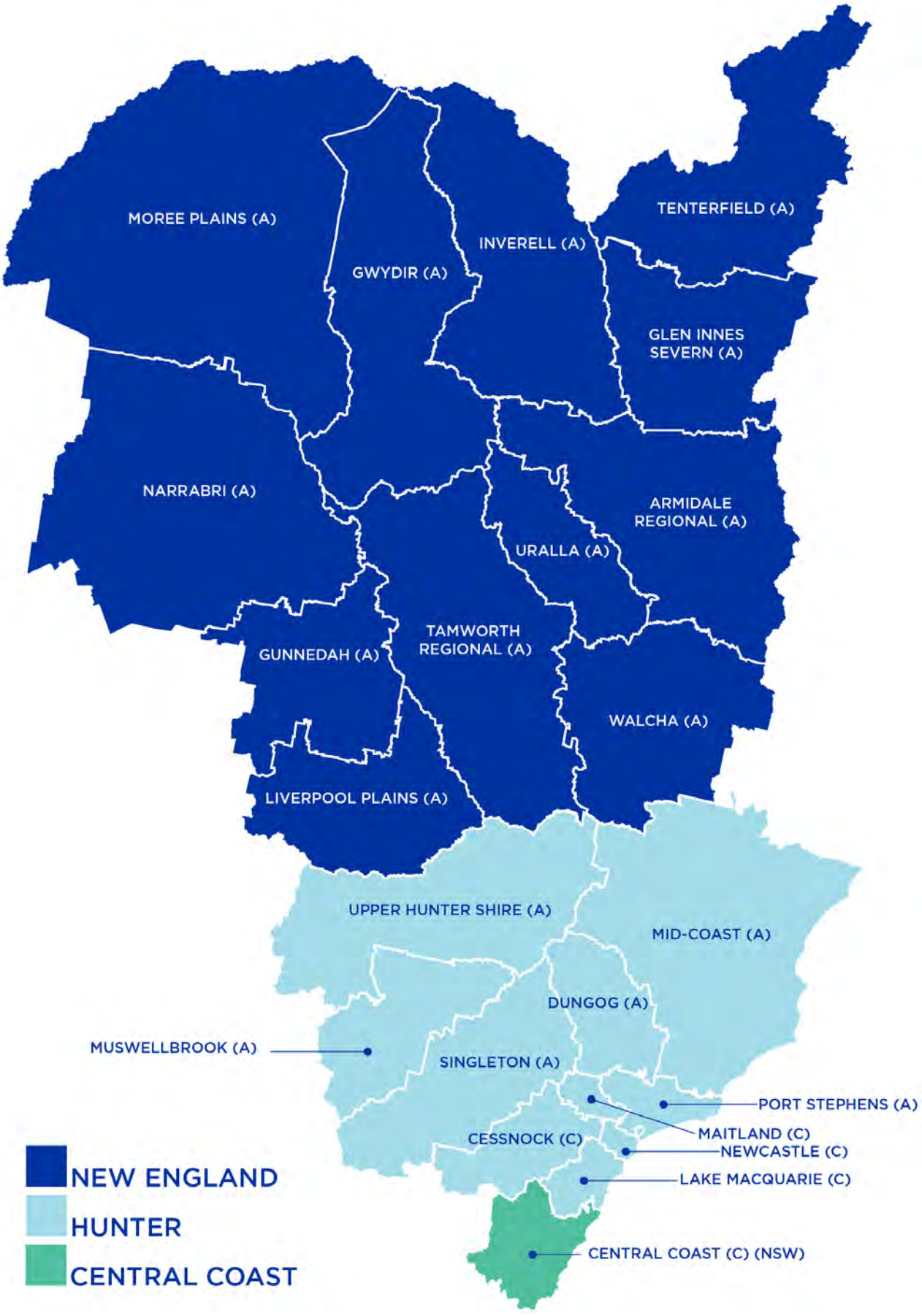
- Non-commissioned services - General Practices, Medical Deputising Services, Ancilliary Services (pharmacy, mental health, imaging, other allied health), HealthDirect After-Hours GP Helpline
- Commissioned Services: GP Access After-Hours Service, Central Coast After Hours Service, Aged Care Emergency Service, Small Towns After Hours Service.

Profile of the Hunter New England Central Coast Primary Health Network

HNECC PHN covers a large and diverse geographic region. It incorporates 23 Local Government Areas (LGAs), which are a mix of metropolitan, regional and remote areas (figure 1). HNECC is the second largest PHN in New South Wales, covering 133,812 km^2. It reaches from just north of Sydney, across the north west of NSW, to the Queensland border. The HNECC PHN region is serviced by Hunter New England Local Health District (LHD) and Central Coast LHD.

In 2018, the Estimated Residential Population (ERP) of the HNECC region was 1,269,222.

Figure 1 Map of HNECC PHN Region



Purpose of the document

This document presents an overview of key after-hours health and service needs in the HNECC PHN region and a set of feasible recommendations to inform future service planning. This includes strategies to:

1. Improve access to after-hours health services for urgent care, in line with regional demand and for vulnerable and disadvantaged populations
2. Improve alignment of after-hours commissioned services with best practice to ensure services are effective, efficient and appropriate for their target populations
3. Ensure resources are matched to regional community need for after-hours health services

This document is structured as follows:

- Chapter 1: After-hours Primary Care Needs and Access
- Chapter 2: Effectiveness and Efficiency of After-hours Commissioned Services
- Chapter 3: Regional Allocation of After-hours Program Funding
- Chapter 4: Considerations for Future Planning
- Chapter 5: Priorities for Future Planning

Key Inputs

A project team drawn from HNECC PHN's Primary Care Commissioning and Health Intelligence and Performance teams conducted the needs assessment from March – August 2020.

Key inputs are summarised as follows:

1. Quantitative analysis and creation of index scores for each HNECC PHN Local Government Area (LGA) comprising:
   - Population health need for after-hours services
   - After-hours service availability
   - Unmet demand for after-hours services (including analysis of ED data provided by Hunter New England and Central Coast LHDs).

2. Literature review and jurisdictional scan to identify:
   - Effective and efficient service models (including telehealth) for after-hours primary care, including models that are most appropriate for vulnerable and / or high use population groups.
   - Key barriers and enablers to effective implementation of after-hours services, in particular for vulnerable population groups.
   - The nature and scope of after-hours and urgent care primary health service models commissioned by four comparable PHNs in Australia.

3. Consultation with the following key stakeholders via focus groups (5) and interviews (8) (a full list of key stakeholders is provided at appendix 1):
   - General Practitioners
   - Primary Care Nurses
   - Hunter New England Local Health District - Clinicians, Managers and Executive
   - Central Coast Local Health District - Clinicians, Managers and Executive
   - After-hours Commissioned Service Providers
   - Aboriginal Community Controlled Health Organisations
   - Residential Aged Care Facilities
   - Community members

4. Additional consultation via surveys including:
   - a GP After-hours survey through the PHN Peoplebank with 59 responses
   - a region wide community survey through the PHN Peoplebank with 345 responses

- a survey of GP Access After-hours patients with 391 responses

5. Two final workshops with system partners and clinical leads to prioritise recommendations and support strategic planning for HNECC PHN's After-hours Primary Care Program.

This document provides a summary of analysis detailed in the following reports:

- A Quantitative After-hours Needs Assessment, prepared by HNECC PHN's Health Intelligence and Performance Team (attached in appendix 2)

- A Literature Review and Jurisdictional Scan 'Effectiveness and Efficiency of Out of hours Models of Primary Care', prepared by Consan Consulting on behalf of HNECC PHN

- An After-Hours Stakeholder Consultation Report, prepared by Nexus Management Consulting on behalf of HNECC PHN.

- An After-Hours Prioritisation Report, prepared by Nous Group on behalf of HNECC PHN.

1. After-hours Primary Care Needs and Access

To understand and quantify the relative need for and access to after-hours primary care across the HNECC PHN region, a Composite Index Score was calculated by HNECC PHN's Health Intelligence and Performance Team (see appendix 2 for full methodology). The indexing approach originated from the Composite Index Score created for the purpose of North Western Melbourne PHN's After Hours Gap Analysis and Recommendations report produced by Impact Co[1]. The approach allows LGAs to be ranked in order from most to least need in terms of population need, access to services and unmet demand for services.

The Composite Index Score is comprised of three-subindices:

1. After-hours Health Need Index
2. After-hours Service Availability Index
3. Unmet AH Demand Index

1.1 After-hours Health Need

Key Drivers of Demand For After-Hours Primary Health Care

The after-hours health need index is based on 14 demographic and clinical drivers that have been associated with demand for after-hours services in the literature[2] (see appendix 2).

These include, for each LGA:

- Population size and annual growth
- Child population (0-4 years)*
- Older persons population (>65 years)*
- Population with fair / poor self-assessed health status*
- Socioeconomic disadvantage*
- Population experiencing mental illness*
- Homeless population
- Aboriginal and Torres Strait Islander population
- Culturally and linguistically diverse population
- Population with multiple chronic conditions

Demographic drivers which are known to have a higher influence on demand for after-hours care are noted with an asterix. When calculating the after-hours need index, all indicators were standardised[3] to enable comparison and those which are known to have a higher influence on demand for after-hours care were given a higher weighting in the modelling.

After-Hours Health Needs in HNECC PHN Region by LGA

Table 1 shows AH Need Index Scores for all LGAs in the HNECC PHN region in descending order. Higher index scores, reflect higher relative need for that LGA. Note that index scores are presented as a percentage rather

[1] North Western Melbourne PHN After-hours Primary Health Care: Gap Analysis and Recommendations (2018) Impact Co (Available at: https://nwmphn.org.au/wp-content/uploads/2019/03/181219-NWMPHN-After-Hours-Gap-Analysis-Final-Report-FINAL.pdf)

[2] As above

[3] Indicators were standardised by dividing each LGA-specific indicator value by the sum of all 23 LGA-specific indicator values. Standardisation produces a score for each indicator for each LGA between 0 and 1 that can then be added across all standardised indicators.

than a raw score. Further analysis of region and cohort based after-hours health needs is provided in *sections 1.5 and 1.6.* Further analysis for each indicator is provded in appendix 2.

Table 1 AH Need Index Scores

Rank	LGA	AH Need Index
1	Central Coast (C) (NSW)	6.51
2	Newcastle (C)	6.42
3	Armidale Regional (A)	5.76
4	Cessnock (C)	5.19
5	Lake Macquarie (C)	5.11
6	Maitland (C)	5.01
7	Tamworth Regional (A)	4.88
8	Moree Plains (A)	4.78
9	Mid-Coast (A)	4.65
10	Port Stephens (A)	4.51
11	Inverell (A)	4.25
12	Muswellbrook (A)	4.12
13	Gunnedah (A)	3.95
14	Upper Hunter Shire (A)	3.91
15	Singleton (A)	3.85
16	Narrabri (A)	3.77
17	Dungog (A)	3.56
18	Tenterfield (A) - part a	3.54
19	Glen Innes Severn (A)	3.49
20	Gwydir (A)	3.41
21	Liverpool Plains (A)	3.35
22	Uralla (A)	3.23
23	Walcha (A)	2.75

1.2 After-hours Service Availability

The after-hours service availability index was developed to understand and quantify the *relative* availability of after-hours primary health services for residents in the HNECC PHN region.

After-hours Service Availability in HNECC PHN Region by LGA

A total of five service availability indicators were selected for inclusion in the after-hours service availability index. Indicators were considered per 10,000 population for each LGA, as follows:

- Number of GP practices open in the AH period*
- Total GP service hours in the AH period per week*
- Number of Pharmacies open in the AH period*
- Total Pharmacy service hours in the AH period per week*
- Number of Medical Deputising Services

General Practice after-hours arrangements were considered separately to the service availability index. See appendix 2 for further details regarding data sources and analysis by indicator.

Service availability indicators which are likely to have a higher influence on AH service availability are noted with an asterix. GP clinics provided through HNECC PHN's after-hours commissioned services were incorporated into this index under General Practice Service hours. Data regarding availability of mental health

services, imaging services and other allied health services was reviewed but unable to be included due to significant concerns regarding completeness and reliability.

When calculating the after-hours need index, all indicators were standardised to enable comparison and those which are likely to have a higher influence on service availability for after-hours care within the LGA were given a higher weighting in the modelling. Table 2 shows AH Service Availability Index Scores for all LGAs in the HNECC PHN region in ascending order. Higher index scores reflect higher relative AH primary care service availability within the LGA. Note that index scores are presented as a percentage rather than a raw score. Further analysis of region and cohort based after-hours service availability is provided in *sections 1.5 and 1.6.*

Table 2 AH Service Availability Index Scores

Rank	LGA	Service availability index
1	Gwydir (A)	1.00
1	Walcha (A)	1.00
3	Uralla (A)	2.28
4	Glen Innes Severn (A)	2.53
5	Gunnedah (A)	2.79
6	Inverell (A)	2.82
7	Moree Plains (A)	3.23
8	Dungog (A)	3.53
9	Port Stephens (A)	3.72
10	Upper Hunter Shire (A)	3.74
11	Mid-Coast (A)	3.81
12	Singleton (A)	4.17
13	Muswellbrook (A)	4.41
14	Cessnock (C)	4.51
15	Maitland (C)	4.80
16	Narrabri (A)	5.04
17	Liverpool Plains (A)	5.11
18	Tenterfield (A) - part a	5.32
19	Armidale Regional (A)	5.56
20	Tamworth Regional (A)	6.11
21	Central Coast (C) (NSW)	6.29
22	Lake Macquarie (C)	6.57
23	Newcastle (C)	13.66

After-Hours Services Available in the HNECC PHN Region

In the HNECC PHN region, After-hours primary care services are available through the following:

- *General Practices* - through a range of delivery modes including: extended hours, on-call arrangements (single or multi-practice) and GP cooperatives.
- *Ancilliary services including pharmacies, mental health, imaging services and other allied health services.*
- *Medical Deputising Services* which arrange for medical practitioners to provide after-hours medical services to patients of General Practices during the absence of, and on behalf of, the General Practices.
- *The HealthDirect After-hours GP Helpline* - Phone calls to the GP AH Helpline are assessed by a registered nurse. Based on the caller's symptoms, a phone call or a video call from a GP may be offered.

- *PHN commissioned services, including:*

GP Access After-hours (GPAAH)

GPAAH is a bulk billed service that has been integrated with the EDs of four local public hospitals and a Community Health Centre. Hunter Primary Care (HPC) is commissioned to deliver the GPAAH service. It consists of the following elements:

- Patient Streaming Service (PSS) - A phone-based patient streaming service that triages calls and directs them to the appropriate level of care that matches their clinical need.
- GPAAH Clinics - GP Led Clinics which are located at Belmont Hospital, John Hunter Hospital, Calvary Mater Hospital, Maitland Hospital and Westlakes Community Centre (Toronto). The have access to timely pharmacy supplies and diagnostic investigations (imaging and pathology) utilising collocated hospital services.
- On call GPs - who provide home visits and phone advice, including to residential aged care facilities.
- Transport Service – available to transport patients to and from clinics appointments (for free) if clinically appropriate, in instances where the patient would otherwise be unable.

Central Coast After-hours Services

A cooperative of local General Practices which share provision of quality AH primary health care to the community outside normal practice hours. Central Coast Primary Care (CCPC) are commissioned to deliver the Central Coast AH Service. All clinics provide a walk-in service, with basic triaging conducted as required onsite.

This service is comprised of three GP led clinics including:

- Erina Bridges AH GP Clinic – located at Erina Community Health Centre
- Kanwal Bridges AH GP Clinic – located on Wyong Hospital Campus
- Woy Woy AH Medical Service - located at Woy Woy Hospital (note this hospital provides subacute services only and does not have an Emergency Department.)

The Wyong and Woy Woy Clinics are predominantly bulk billing clinics, whereas the Erina clinic is a private billing clinic. Pathology services are available onsite, whereas diagnostic imaging and pharmacy services are not available. When the Central Coast AH GP Clinics are closed, there are arrangements in place for calls management by the GPAAH Patient Streaming Service.

Aged Care Emergency Service (ACE)

ACE is designed to address an identified gap in supporting staff in RACFs to facilitate residents' non-life-threatening acute care needs being met within the facility, and thus avoiding an uneccessary ED presentation. The model is aimed not just at reducing the need for residents of RACFs to present to an ED for acute care, but also, where an ED presentation is required, to proactively manage the visit through effective clinical handovers.

ACE is a nurse led program that is comprised of 7 key elements:

1. Evidence-based algorithms to manage common health problems within the RACF facility
2. A telephone consultation service for RACF staff to access clinical guidance – *delivered by Local Health Districts in business hours and Hunter Primary Care in the AH period.*
3. Development of clear goals of care prior to transferring to an ED
4. Proactive case management within the ED

5. Education and empowerment of RACF staff
6. Collaborative relationships with RACFs, GPs, Hunter Primary Care, NSW Ambulance and EDs
7. A management team to implement and support all the above elements.

ACE is delivered in partnership with Hunter New England LHD and NSW Ambulance. Hunter Primary Care is commissioned by HNECC PHN to deliver the AH telephone consultation service and elements of the education / capacity building program. There are 93 RACFs in the Hunter New England enrolled within the ACE program (covering 7615 residential aged care beds).

Small Towns After-hours (STAH) Program

STAH supports small town GPs who provide cover to their local hospital 24 hours a day, seven days a week. The STAH program provides a telephone link between a registered nurse in a rural and remote hospital and a GP VMO from a district size town for triage Category 3-5, when the local GP rostered to be on-call at the hospital is unavailable. The program has workforce retention benefits, as it aims to avoid GP burnout, by supporting small town GPs to take leave, for example for holidays and conferences. Towns incorporated into the STAH program have a population of no greater than 4000 people.

HealthWISE is commissioned by HNECC PHN to coordinate the STAH program roster. The service provider works in close collaboration with Hunter New England LHD to develop, coordinate and disseminate monthly GP VMO rosters.

The following towns are covered under the STAH program: Boggabri (Narrabri LGA), Barraba (Gwydir LGA), Bingara (Gwydir LGA), Manilla (Tamworth LGA), Wee Waa (Narrabri LGA), Warialda (Gwydir LGA), Quirindi (Liverpool Plains LGA), Walcha (Walcha LGA), Emmaville (Glen Innes Severn LGA) and Murrurundi (Upper Hunter Shire LGA).

1.3 Unmet After-hours Demand

Unmet Demand For After-hours Primary Care within the Healthcare System

Unmet demand for after-hours primary care may result in either the patient delaying seeking care until their usual GP is open or accessing care in acute services, that is, EDs and NSW Ambulance.

An unmet demand index was developed to understand the extent to which demand for primary care in the AH period is met by these acute care services. Indicators were considered per 1,000 population for each LGA and include:

- Lower-urgency ED attendances in the AH period[4]*
- NSW Ambulance calls triaged as non-urgent and referred to Healthdirect (see appendix 2 for further details).

When calculating the unmet demand index, all indicators were standardised to enable comparison. Lower-urgency ED attendances are denoted with an asterix and were given a higher weighting in the modelling to account for their strong association with unmet demand for AH primary care.

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[4] *Lower-urgency ED presentations are defined by the Australian Institute of Health Welfare as presentations for lower urgency care at formal public hospital EDs where the patient:*

- *had an emergency presentation type of visit*
- *had a triage category of 4 (semi-urgent) or 5 (non-urgent)*
- *did not arrive by ambulance, or police or correctional vehicle, and*
- *was not admitted to the hospital, not referred to another hospital, or did not die.*

Lower urgency ED presentations data were available at the SA3 level. LGA level indicators for lower urgency ED presentations were therefore based on the relevant SA3 indicator.

Unmet Demand in the HNECC PHN Region by Local Government Area

Table 4 shows AH Unmet Demand Index Scores for all LGAs in the HNECC PHN region in descending order. Higher index score reflect higher relative AH unmet demand within the LGA. Note that index scores are presented as a percentage rather than a raw score.

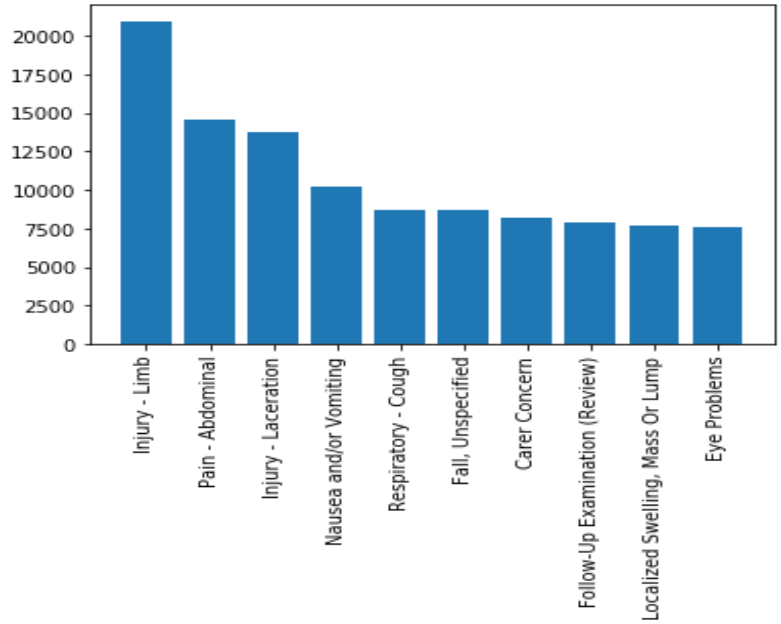
Table 3 AH Unmet Demand Index Scores

Rank	LGA	Unmet Demand Index
1	Armidale Regional (A)	6.79
2	Tamworth Regional (A)	5.84
3	Muswellbrook (A)	5.27
4	Mid-Coast (A)	5.16
5	Maitland (C)	4.77
6	Upper Hunter Shire (A)	4.74
7	Gunnedah (A)	4.67
8	Central Coast (C) (NSW)	4.63
9	Port Stephens (A)	4.49
10	Glen Innes Severn (A)	4.45
11	Newcastle (C)	4.43
12	Cessnock (C)	4.43
13	Inverell (A)	4.40
14	Moree Plains (A)	4.20
15	Lake Macquarie (C)	4.09
16	Narrabri (A)	4.08
17	Dungog (A)	3.90
18	Singleton (A)	3.84
19	Walcha (A)	3.60
20	Liverpool Plains (A)	3.55
21	Tenterfield (A) - part a	3.22
22	Uralla (A)	3.19
23	Gwydir (A)	2.27

Unmet Demand in the HNECC PHN Region by Presenting Conditions

Hunter New England Local Health District

Figure 2 Hunter New England After-hours lower urgency ED presentations, by top 10 primary presenting concerns 2017/18 – 2018/19



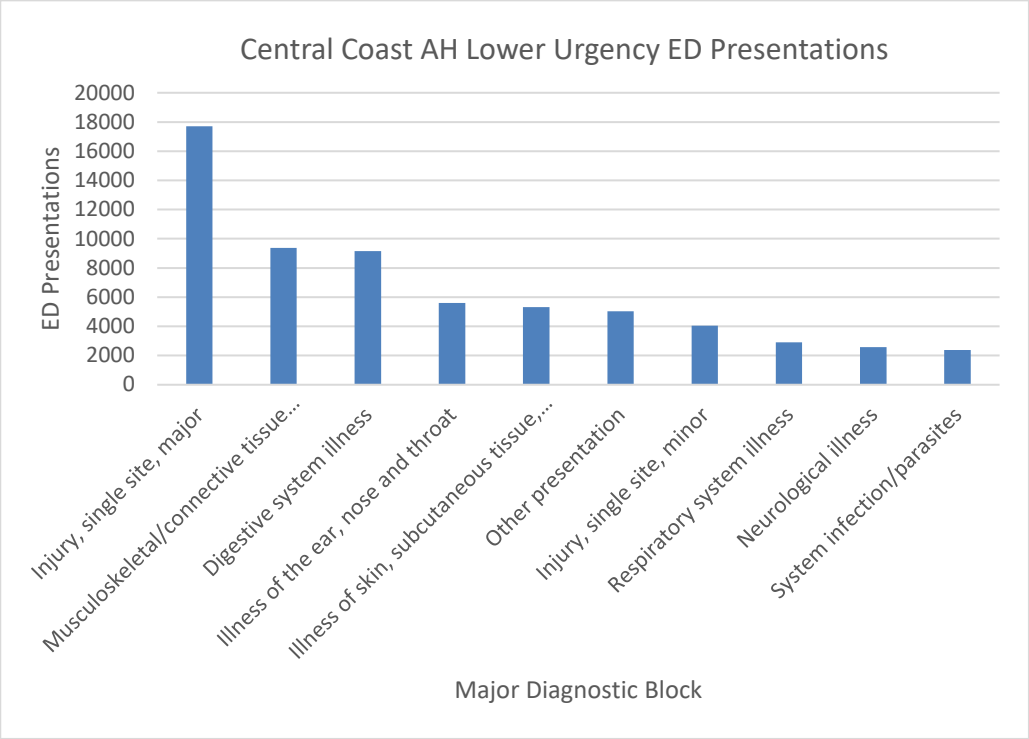
Source: Hunter New England Local Health District

The top 10 conditions amongst lower urgency after-hours presentations to Hunter New England LHD EDs in 2017/18 and 2018/19 are displayed in Figure 4. Injury (limb) is the most common condition, followed by pain (abdominal).

Central Coast Local Health District

The top 10 major diagnostic blocks for lower urgency after-hours presentations to Wyong and Gosford Hospitals in 2017/18 and 2018/19 are listed in Figure 5. Single site injury (major) is the most frequent major diagnostic block, followed by musculoskeletal / connective tissue illness.

Figure 3 Central Coast After-hours lower urgency ED presentations by top 10 major diagnostic blocks, 2017/18 – 2018/19



Source: Central Coast Local Health District

Unmet Demand in the HNECC PHN Region by Age

Lower urgency after-hours ED presentations per 1,000 population by age are displayed in Table 5 for the HNECC PHN region. The age categories 0-14 years and 15-24 years had the highest number of presentations per 1,000 with 137.5 and 139.4 respectively. After-hours presentations per 1,000 are seen to decrease with age, with the 80+ years age category having the lowest overall number of presentations per 1,000 population (46.3).

Table 4 Lower urgency AH ED presentations per 1,000 population by age in FY 2018/19

Demographic group	After-hours lower urgency ED per 1,000 population
0–14	137.5
15–24	139.4
25–44	100.0
45–64	61.5
65–79	51.7
80+	46.3
All persons	92.3

Source: AIHW Use of emergency departments for lower urgency care: 2015–16 to 2017–18

1.4 The After-hours Composite Index Score

The Composite Index Score, combining each of the three sub-indices, is derived using the below equation:

$$Composite\ Index\ Score = \frac{AH\ Need\ Index + Unmet\ Demand\ Index}{Service\ Availability\ Index}$$

The results of the composite index scores are depicted Table 6 in descending order. Note that the final composite index scores in the table are presented as a percentage rather than a raw score.

A high composite index score indicates high need combined with high unmet demand and low service availability. The LGA with the highest need, unmet demand and low service availability is Walcha LGA, followed by Gwydir and Glen Innes Severn LGAs.

Table 5 After-hours Composite Index Scores

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
1	Walcha (A)	12.17	2.75	1.00	3.60
2	Gwydir (A)	10.89	3.41	1.00	2.27
3	Glen Innes Severn (A)	5.42	3.49	2.53	4.45
4	Gunnedah (A)	5.32	3.95	2.79	4.67
5	Inverell (A)	5.28	4.25	2.82	4.40
6	Uralla (A)	4.86	3.23	2.28	3.19
7	Moree Plains (A)	4.79	4.78	3.23	4.20
8	Mid-Coast (A)	4.44	4.65	3.81	5.16
9	Port Stephens (A)	4.17	4.51	3.72	4.49
10	Upper Hunter Shire (A)	3.99	3.91	3.74	4.74
11	Armidale Regional (A)	3.89	5.76	5.56	6.79
12	Cessnock (C)	3.68	5.19	4.51	4.43
13	Muswellbrook (A)	3.67	4.12	4.41	5.27
14	Dungog (A)	3.64	3.56	3.53	3.90
15	Maitland (C)	3.51	5.01	4.80	4.77
16	Singleton (A)	3.19	3.85	4.17	3.84
17	Central Coast (C) (NSW)	3.05	6.51	6.29	4.63
18	Tamworth Regional (A)	3.03	4.88	6.11	5.84
19	Narrabri (A)	2.69	3.77	5.04	4.08
20	Lake Macquarie (C)	2.42	5.11	6.57	4.09
21	Liverpool Plains (A)	2.33	3.35	5.11	3.55
22	Tenterfield (A) - part a	2.19	3.54	5.32	3.22
23	Newcastle (C)	1.37	6.42	13.66	4.43

Note that the the Composite Index Score for each LGA is expressed as a percentage rather than a raw score (as derived from the calculation) for easier comprehension.

Further detail of the sub-indices and calculations are provided in the *Quantitative After-hours Needs Assessment Report (attached in appendix 2)*. For the purposes of this document, detailed analysis will be provided as profiles of cluster (location) based need and cohort based need.

1.5 Profiles After-Hours Needs And Access In Clusters

The following analysis is provided in eight LGA Clusters, in order of priority ranking according to the composite index score, as follows:

1. Peel (covering the LGAs of Walcha, Gunnedah, Liverpool Plains, and Tamworth Regional)
2. Mehi (covering the LGAs of Gwydir, Moree Plains and Narrabri)
3. Mid-Coast (covering the Mid Coast LGA)
4. Tablelands (covering the LGAs of Armidale Regional, Glen Innes Severn, Inverell, Tenterfield and Uralla)
5. Lower Hunter Valley (covering the LGAs of Cessnock, Dungog and Maitland)
6. Upper Hunter Valley (covering the LGAs of Muswellbrook, Singleton and Upper Hunter Shire)
7. Central Coast (covering the Central Coast LGA)
8. Greater Newcastle (covering the LGAs of Newcastle, Port Stephens and Lake Macquarie).

Priority 1 - Peel

The Peel Cluster is comprised of Walcha, Gunnedah, Tamworth Regional and Liverpool Plains LGAs. These LGAs were ranked 1st, 4th, 18th and 21st respectively on the composite index.

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
1	Walcha (A)	12.17	2.75	1.00	3.60
4	Gunnedah (A)	5.32	3.95	2.79	4.67
18	Tamworth Regional (A)	3.03	4.88	6.11	5.84
21	Liverpool Plains (A)	2.33	3.35	5.11	3.55

AH Need

- The Peel Cluster has a total population of 85,842, representing 7% of the HNECC PHN population. Tamworth Regional LGA is the most populous LGA in the Peel Cluster (72%).
- Gunnedah LGA has a relatively higher proportion of children 0-4 years (7.4%) compared to other LGAs in the HNECC PHN (average 6.2%). Walcha LGA has a relatively higher proportion of the population aged over 65 years (26%) compared to the HNECC PHN average (19.6%).
- Gunnedah, Tamworth Regional and Liverpool Plains LGAs have higher proportions of Aboriginal people with 15.3%, 15.2% and 12.2% respectively (HNECC PHN 6.4%).

AH Service Availability

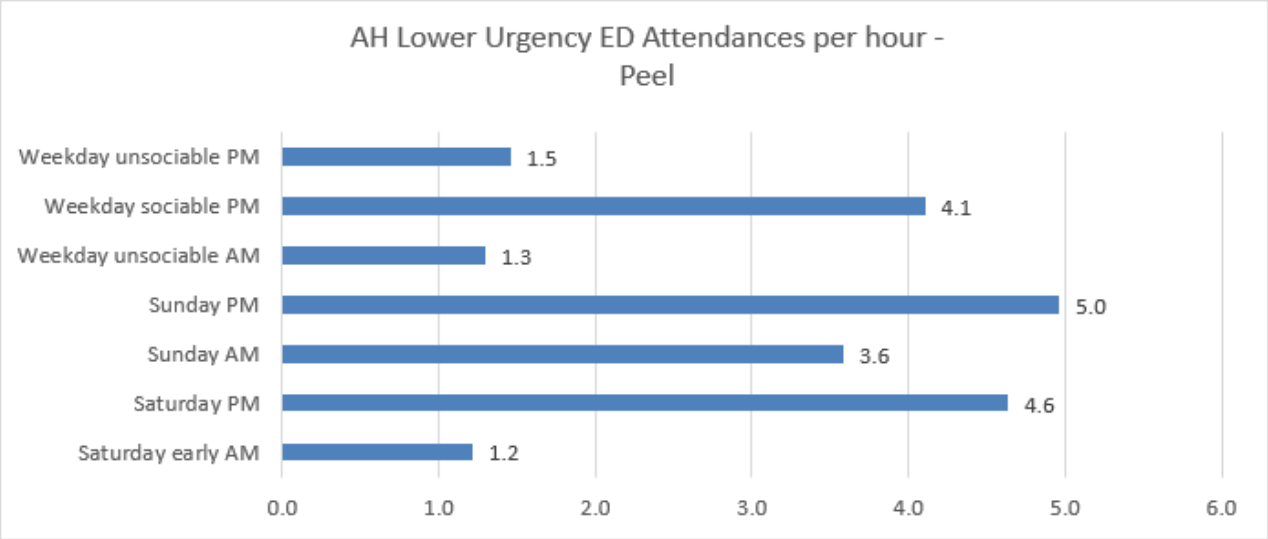
- In Walcha and Gunnedah LGAs, there are no GP services open during the after-hours period. There is one GP service open in Liverpool Plains LGA and five GP services open in Tamworth Regional LGA, with the hours open per 10,000 population per week in the AH period being 8:17 hours and 1:16 hours in for Liverpool Plains and Tamworth Regional LGAs respectively (HNECC PHN 13:29 hours).
- There are also no pharmacy services available after-hours in Walcha LGA. The hours that pharmacy services are open during the after-hours period per 10,000 population per week ranges from 7:30 hours in Gunnedah LGA, 1:54 hours in Liverpool Plains LGA and to 25:30 hours in Tamworth Regional LGA.
- Medical Deputising Services provide some coverage in Gunnedah, Tamworth Regional and Liverpool Plains LGAs, but not Walcha LGA.

- When practices in the Peel Cluster are closed, 44% (11/25) advise patients to attend the local hospital, 20% (5/25) advise there is a GP on-call through the practice, 24% (6/25) have no arrangement advertised and 12% (3/12) are part of a cooperative with extended hours.
- The HNECC PHN-commissioned Small Towns After-hours Program operates in the small towns of Barraba in Tamworth Regional LGA, Quirindi in Liverpool Plains LGA, and Walcha in Walcha LGA. The HNECC PHN-commissioned Aged Care Emergency Service also provides coverage to some RACFs in Tamworth Regional LGA.

AH Unmet Demand

- The Tamworth-Gunnedah SA3 (including Tamworth Regional LGA, Liverpool Plains LGA and Gunnedah LGA) has the second highest rate of AH Category 4/5 ED presentations per 1,000 population (170.4). The Tamworth-Gunnedah SA3 accounts for 12% of after-hours category 4/5 ED attendances in the HNECC PHN Region, the second highest SA3 overall.
- Peak periods of unmet demand in Peel Health Facilities are Sunday PM (12:00-23:59) and Saturday PM (12:00-23:59) with 5 and 4.6 attendances per hour respectively. See figure 6 for more detail.

Figure 4 After-hours Lower Urgency ED attendances per hour - Peel Cluster Health Facilities, 2017/18 - 2018/19 (including Tamworth Hospital, Gunnedah Health Service, Manilla Health Service, Walcha Health Service, Quirindi Health Service, Barraba MPS, Boggabri MPS).



Source: Hunter New England Local Health District

Community consultation

There were 16 respondents from the Peel Cluster to HNECC PHN's after-hours survey. Key themes included limited access to after-hours care, resulting in presentation to hospital and the need for promotion of information / advice lines to guide patients to the level of care required after-hours.

- Sample of comments:
  - *"Getting a same day appointment at a GP is almost impossible. There is no afterhours home service in my area no chemist nor public transport. To suffer or to call an ambulance are the only options."*
  - *"Only choice in regional areas after-hours in hospital ED (if GP and pharmacy are closed)."*
  - *"There used to be a Health direct phone line but I've rarely used it. I don't know if it still exists. I didn't like having to provide my personal details to them, I wanted somewhere anonymous. If it still exists, then it should be promoted again. "*

- *"The thing I've found difficult to access is information about our concerns following the procedures etc, the 'is that normal' or should we be concerned and go to ED type stuff."*

Priority 2 – Mehi

The Mehi Cluster is comprised of Gwydir, Moree Plains and Narrabri LGAs, ranked 2nd, 7th and 19th respectively on the composite index.

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
2	Gwydir (A)	10.89	3.41	1.00	2.27
7	Moree Plains (A)	4.79	4.78	3.23	4.20
19	Narrabri (A)	2.69	3.77	5.04	4.08

AH Need

- The Mehi Cluster has a combined population of 31,930, accounting for 3% of the HNECC PHN population.
- Moree Plains LGA has highest proportions in the HNECC PHN region of children under 4 years old (8%), Aboriginal population (26.6%), and homeless population (1%).
- In Narrabri LGA, 7% of the population are under 4 years old and 15.2% are Aboriginal.
- Gwydir LGA has a population 5,349 and a lower ranking on most of the population need indicators.

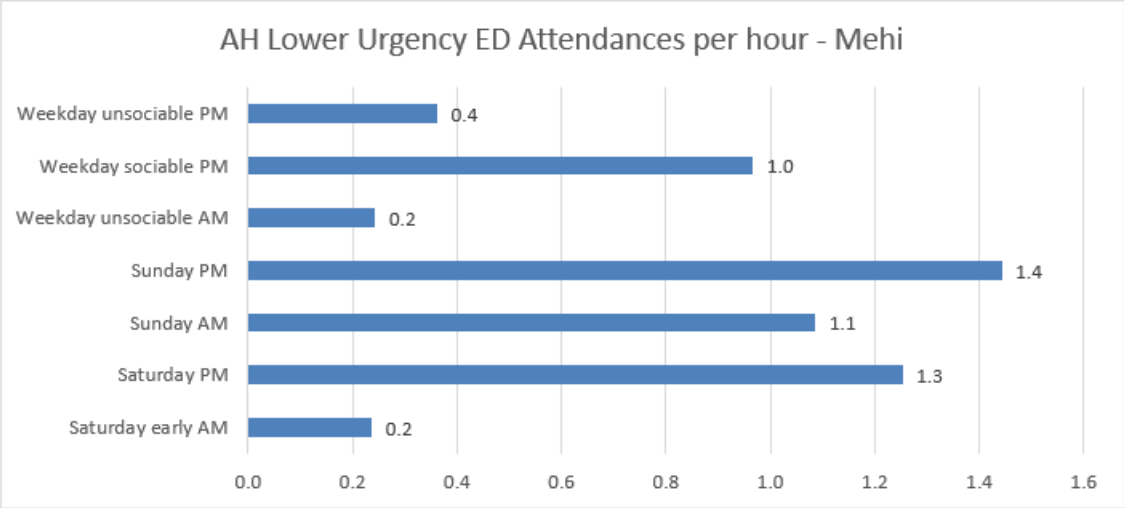
AH Service Availability

- Gwydir LGA was ranked as having the poorest AH service availability in the HNECC PHN region, with no GP or pharmacy services open during the AH period and no MDS availability.
- Moree Plains LGA has no GP services open during the AH period, 13:28 hours of AH pharmacy service hours (HNECC PHN 17:52) and limited Medical Deputising Service (MDS) availability.
- In Narrabrai LGA there are 2:16 hours of GP services open during the AH period (HNECC PHN 13:29) and 0:45 hours of pharmacy services open during the AH period (HNECC PHN 17:52).
- When practices are closed in the Mehi Cluster, the majority 64% (7/11) advise attending the local hospital.
- The HNECC PHN-commissioned Small Towns After-hours Program operates in the small towns of Boggabri and Wee Waa in Narrabrai LGA, and Bingara and Warialda in Gwydir LGA. This is the only HNECC PHN commissioned service with coverage in the Mehi Cluster.

Unmet Demand

- In 2017-18 the Moree-Narrabri SA3 reported 4,572 category 4/5 after-hours ED attendances, accounting for 4% of the HNECC PHN region total. This equated to a rate of 162 category 4/5 AH ED attendances per 1,000 population (HNECC PHN 94.1). There were less than 1.4 per 1,000 population lower urgency ambulance calls triaged to Healthdirect in each of the LGAs in the Mehi cluster.
- Peak periods of unmet demand in Mehi Health Facilities include Sunday PM (12:00-23:59) and Saturday PM (12:00-23:59) with 1.4 and 1.3 attendances per hour respectively. See figure 7 for more detail.

Figure 5 After-hours Lower Urgency ED attendances per hour - Mehi Health Facilities, 2017/18 - 2018/19 (Bingara Health Service, Boggabri MPS, Moree Health Service, Narrabri Health Service, Warialda MPS, Wee Waa Health Service)



Source: Hunter New England Local Health District

Community Consultation

HNECC PHN's after-hours survey had just 5 respondents from the Mehi Cluster, 4 of which reported it was always difficult to see the healthcare provider they needed to see. All comments provided related to GP workforce shortages, as below:

- *"Chronic doctor shortages are making bad worse"*
- *"Not enough GPs in town"*
- *"Due to the shortage of doctors I'm Moree it is a wait of two months to get an appointment".*

Priority 3 - Mid-Coast

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
8	Mid-Coast (A)	4.44	4.65	3.81	5.16

AH Need

- The Mid-Coast LGA has a population of 93,288, accounting for 7.4% of the HNECC PHN population.
- It has the highest proportion of the population aged 65 years and over (30%) and highest proportion of population with multiple chronic conditions (mental and behaviours problems and heart, stroke and vascular disease) (Age Standardised Rate (ASR) 2.2 per 100 population).

AH Service availability

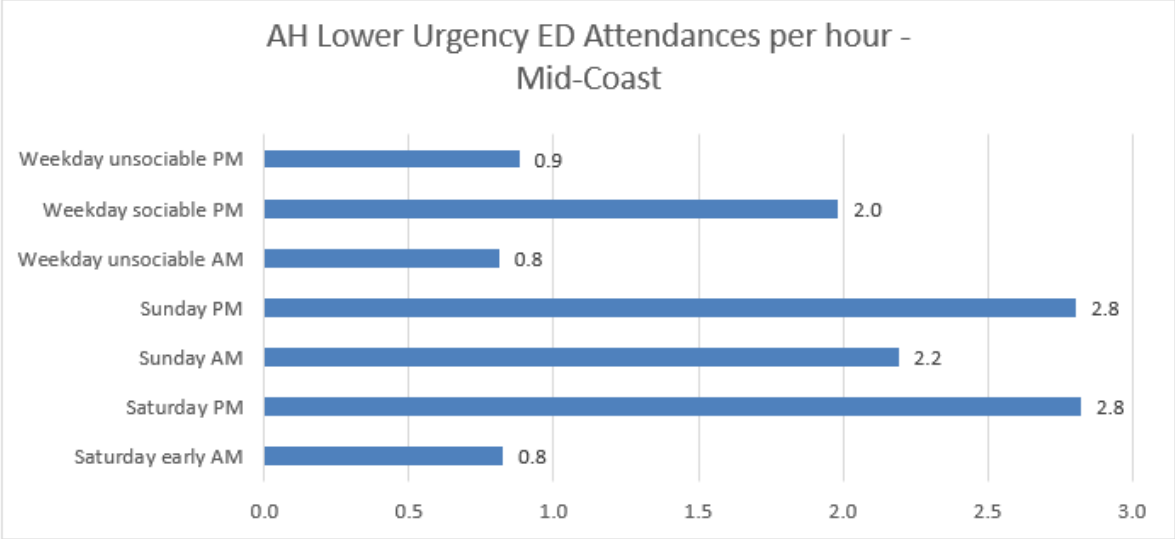
- In the Mid-Coast LGA, there are nine general practices open in the after-hours period, but only for a total of 15:30 hours per week to service a population of almost 100,000. GP services are open during the after-hours period for 1:39 hours per 10,000 population per week. This is substantially lower than the average for the HNECC PHN region, which is 13:29 hours per 10,000 population per week.
- When practices in the Mid-Coast are closed, 53% (17/32) have GP on call arrangements through the practice, 22% (7/32) advise attending the local hospital and a small number of practices have arrangements with one practice offering extended hours in the Foster-Tuncurry Area. The remaining practices (25%) had no after-hours arrangement advertised.

- The HNECC PHN-commissioned Aged Care Emergency service provides after-hours phone support to most RACFs on the Mid-Coast. This is the only HNECC PHN commissioned service with coverage in the Mid-Coast Cluster.

AH Unmet Demand

- In 2017-18 the Taree-Gloucester SA3 had 5,596 category 4/5 ED presentations in the AH period, which accounted for 5% of the HNECC PHN total and equated to a rate of 101.7 presentations per 1,000 population (HNECC PHN average 94.1).
- In 2018, the Mid-Coast LGA had the second highest rate of lower urgency after-hours calls to NSW Ambulance that were redirected to the Healthdirect Helpline with 5.9 calls per 1,000 population, accounting for 9.7% of the HNECC PHN region total.
- Peak periods of unmet demand in Mid-Coast Health Facilities include Sunday PM (between 12:00 – 23:59) and Saturday PM (between 12:00-23:59), both with 2.8 attendences per hour. This is followed by Sunday AM (00:00-12:00) with 2.2 attendances per hour. See Figure 8 for more detail.

Figure 6 After-hours Lower Urgency ED attendances per hour - Mid-Coast Health Facilities (Manning Hospital, Gloucester Health Service and Buladelah Health Service), 2017/18 - 2018/19



Source: Hunter New England Local Health District

Community consultation

92% (23/25) of respondents to the HNECC PHN's After-hours Survey from the Mid-Coast reported that it was difficult to access the healthcare provider they needed. Key themes from the qualitative responses provided were that the ED was the only option for after-hours care, though not the preferred option. They also reported long waiting periods of several weeks to see a GP. A sample of comments include:

- *"My area has no after-hours medical assistance. A GP Super Medical Clinic would resolve that problem"*
- *"It's impossible to get into a GP - no after-hours GP in this area - only hospital available and that can lead to wait times of up to 8 hours at times. Its not good enough for the community".*
- *"No local after-hours GP...would appreciate a statewide or regional Telehealth service that could speak to a GP about an issue after-hours (or even during day), to avoid unnecessary travel or ambulance use."*

Priority 4 – The Tablelands

The Tablelands Cluster is comprised of Glenn Innes Severn, Inverell, Uralla, Armidale Regional and Tenterfield LGAs, ranked 3rd, 5th, 6th, 11th and 22nd respectively on the composite index.

Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
3	Glen Innes Severn (A)	5.42	3.49	2.53	4.45
5	Inverell (A)	5.28	4.25	2.82	4.40
6	Uralla (A)	4.86	3.23	2.28	3.19
11	Armidale Regional (A)	3.89	5.76	5.56	6.79
22	Tenterfield (A) - part a	2.19	3.54	5.32	3.22

AH need

- The Tablelands Cluster has a total population size of 68,727, accounting for 5% of the HNECC PHN population.
- Armidale Regional LGA accounts for 45% (30,707) of the total Tablelands population. It has the second highest proportion compared to all HNECC PHN LGAs of people experiencing homelessness (0.8%) and the second highest proportion of people born overseas with poor English proficiency (albeit only 0.8%).
- Inverell LGA has the highest proportion compared to all HNECC PHN LGAs of people with self-rated fair to poor health (ASR 18.8 per 100) and the highest level of socioeconomic disadvantage (IRDS 909, Aus 1,000).

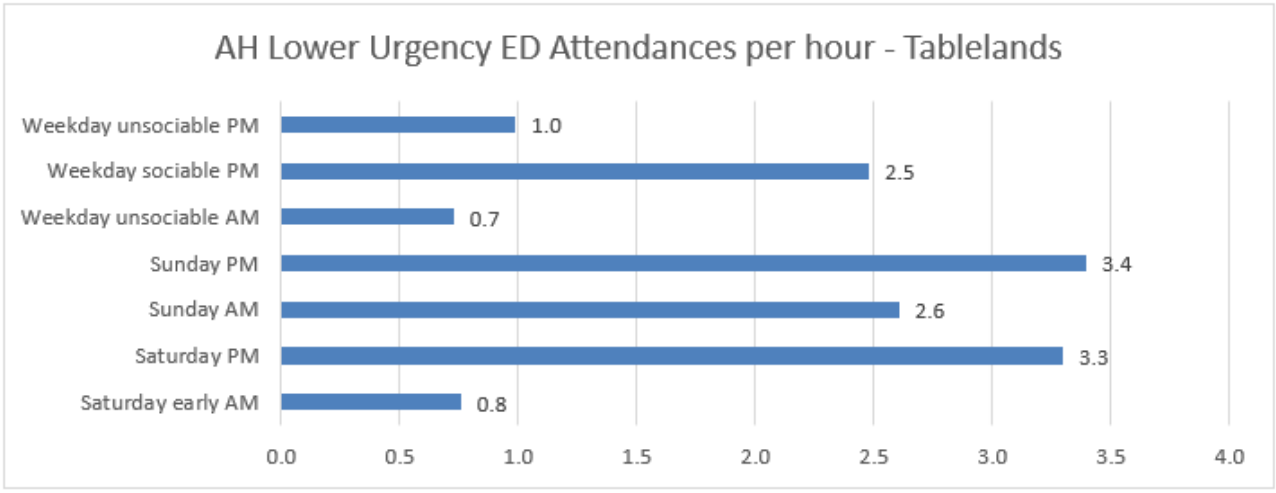
AH service availability

- In Uralla and Glenn Innes Severn LGAs there are no GP services reported to be open during the after-hours period. Inverell has 0:35 hours of GP AH services open per week per 10,000 population and Armidale 1:37 (well below the HNECC PHN average of 13:29 hours per 10,000 population per week).
- In Uralla and Tenterfield LGAs there are no pharmacy services open during the after-hours period. Inverell LGA has 0:53 hours of AH pharmacy services per week per 10,000 population and Armidale 12:22 (compared to the HNECC PHN average of 17:52 hours per 10,000 population per week).
- When practices in the Tablelands Cluster are closed, 57% (12/21) have GP on-call arrangements through the practice and a further 19% (4/21) advise attending the local hospital.The remaining practices either had no arrangement advertised or deputised to a Medical Deputising Service.
- The HNECC PHN-commissioned Small Towns After-hours Program operates in the small towns of Emmaville in Glenn Innes LGA. The HNECC PHN-commissioned Aged Care Emergency Service operaties in the Armidale LGA.

AH unmet demand

- In 2017-18 Armidale SA3 and Inverell-Tenterfield SA3 had a combined 8,820 Category 4/5 ED presentations in the after-hours period, accounting for 7.4% of the HNECC PHN region total. In 2017-18 Armidale SA3 and Inverell-Tenterfield SA3 were reported to have 119.4 and 109.3 category 4/5 ED presentations in the after-hours period per 1,000 population respectively (HNECC PHN 94.1).
- In 2018, the highest rate per 1,000 population of lower urgency Ambulance calls redirected to the Healthdirect Helpline was in the Armidale Regional LGA (7.3).
- Peak periods of unmet demand in Tablelands Health Facilities include Sunday PM (between 12:00 – 23:59) and Saturday PM (between 12:00-23:59) with 3.4 and 3.4 attendences per hour respectively. This is followed by Sunday AM (00:00-12:00) with 2.6 attendances per hour. See Figure 9 for more detail.

Figure 7 After-hours Lower Urgency ED attendances per hour - Tablelands Health Facilities 2017/18 - 2018/19 (Armidale Hospital, Inverell Health Service, Glenn Innes Health Service, Tenterfield Health Service, Tingha Health Service, Guyra MPS and Emmaville MPS)



Source: Hunter New England Local Health District

Community Consultation

There were 13 respondents from the Tablelands Cluster to HNECC PHN's after-hours survey. Key themes from the comments were lack of access to after-hours primary care and urgent care appointments, resulting in attendances to the local hospital. A sample of comments include:

- *"..our doctors are booked out week after week so too bad if you are really ill. We end up going to the hospital because there is no other choice!"*
- *"In small country towns where is there other than the Emergency Department? Really isn't a choice especially when you need after-hours medical advice for care for a child!"*
- *"Hard to get to a doctor unless you make an appointment 2 weeks later!"*

Priority 5 - Lower Hunter Valley

The Lower Hunter Valley Cluster is comprised of Cessnock, Dungog and Maitland LGAs, ranked 12th, 14th and 15th respectively on the composite index.

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
12	Cessnock (C)	3.68	5.19	4.51	4.43
14	Dungog (A)	3.64	3.56	3.53	3.90
15	Maitland (C)	3.51	5.01	4.80	4.77

AH Need

- The Lower Hunter Valley has a combined population of 151,650, accounting for 12% of the HNECC PHN population.
- Cessnock LGA was ranked in the top 3 LGAs in the HNECC PHN region for the following indicators: annual population growth (1.7%), population with high psychological distress (16.0 per 100), population with self-rated fair to poor health (18.5 per 100) and population with multiple chronic conditions (mental and behaviours problems and heart, stroke and vascular disease) (2.0 per 100).
- Maitland LGA ranked in the top 6 LGAs for population size (83,203), annual population growth (1.2%) and proportion of population 0-4 years (7.4%).
- Dungog LGA ranked in the lower half of HNECC PHN LGAs on most AH need indicators.

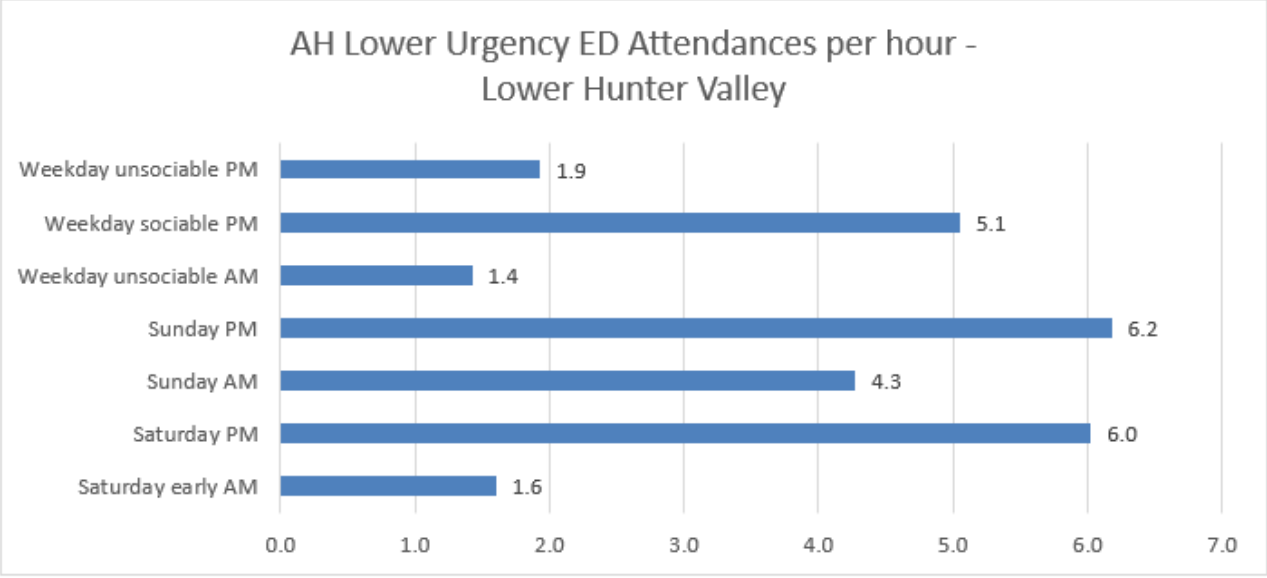
AH Service Availability

- Dungog LGA has no pharmacies open during the after-hours period, whereas Cessnock has nine and Maitland has 12.
- In Maitland LGA, there are 9:18 hours of GP AH service availability per week per 10,000 population (HNECC PHN 13:29). Comparable figures for Cessnock and Dungog are 3:12 and 5:21 hours respectively. A Medical Deputising Service provides partial coverage to the Cessnock and Dungog LGAs and full coverage to the Maitland LGA.
- When practices in the Lower Hunter Valley Cluster are closed, 58% (30/52) advise patients to attend the GP Access After-hours Service, 29% (15/52) advise to attend the local hospital and12% (6/52) have arrangements in place with a Medical Deputising Service other than GP Access After-hours.
- HNECC PHN Commissions the GP Access After-hours Service, which includes a GP clinic based at Maitland Hospital. The HNECC PHN Aged Care Emergency Service provides coverage to Maitland and Dungog LGAs. There are no commissioned services with coverage of Cessnock LGA.

AH Unmet Demand

- Maitland SA3 accounts for 6% of category 4/5 after-hours ED attendances in the HNECC PHN region, and has a rate of 90.6 category 4/5 after-hours ED attendances per 1,000 population (HNECC PHN 94.1). The Lower Hunter SA3 (including Cessnock and Dungog LGAs) accounts for 11% of all category 4/5 AH ED presentations in the HNECC PHN region, with a rate of 139.4 presentations per 1,000 population.
- Maitland LGA had 4.9 lower urgency ambulance calls per 1,000 population redirected to Healthdirect, the third highest rate of all LGAs. Lower urgency ambulance calls per 1,000 population redirected to Healthdirect were lower in Cessnock (2.6) and Dungog (1.7).
- Peak periods of unmet demand in Lower Hunter Valley Health Facilities include Sunday PM (between 12:00 – 23:59) and Saturday PM (between 12:00-23:59) with 6.2 and 6.0 attendences per hour respectively. See figure 10 for more detail.

Figure 8 After-hours Lower Urgency ED attendances per hour - Lower Hunter Valley Health Facilities, 2017/18 - 2018/19 (including Maitland Hospital, Cessnock Health Service, Dungog Health Service, Kurri Kurri Health Service.)



Source: Hunter New England Local Health District

Community Consultation

27 residents from the Lower Hunter Vally responded to HNECC PHN's After-hours Survey. 63% (17/27) reported it was difficult to access the health provider they needed to see for urgent and after-hours care.

A sample of comments includes:

- *"If I'm not sure whether I should attend a GP or the ED of the local hospital, I call the triage service. I find I am always given really good advice."*
- *"Rural areas can be access poor. The available after-hours gp allow you to make an appointment with a current fee of $125.00 for a home visit which has no rebate of Medicare and no bulk billing even if on a concession card."*
- *"Impossible to see a GP same day"*

Priority 6 - Upper Hunter Valley

The Upper Hunter Valley Cluster is comprised of Upper Hunter Shire, Muswellbrook and Singleton LGAs. These LGAs were ranked 10th, 13th and 16th respectively on the composite index.

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
10	Upper Hunter Shire (A)	3.99	3.91	3.74	4.74
13	Muswellbrook (A)	3.67	4.12	4.41	5.27
16	Singleton (A)	3.19	3.85	4.17	3.84

AH Need

- The Upper Hunter Valley has a total population of 54,025, accounting for 4% of the HNECC PHN population.
- Muswellbrook LGA has a higher relative proportion of children 0-4 years (7.7%) and ASR per 100 population of high psychological distress (14.4). These LGAs otherwise had lower scores on indicators of AH need.

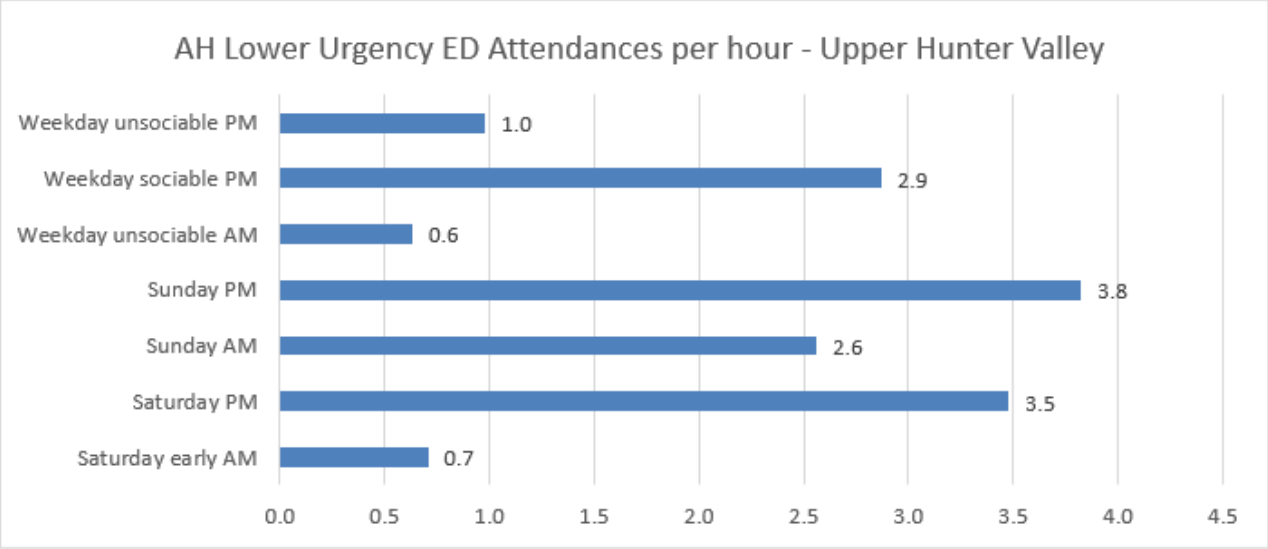
AH Service Availability

- In Muswellbrook, Singleton and Upper Hunter Shire LGAs, GP services are open during the after-hours period for 4:16 hours, 4:41 hours and 2:48 hours per week respectively per 10,000 population (HNECC PHN 13:29). Pharmacy services are open during the after-hours period for 15:33 hours, 16:51 hours and 1:45 hours per week respectively per 10,000 population (HNECC PHN 17:52).
- When practices in the Upper Hunter Valley Cluster are closed 94% (17/18) advise patients to attend the local hospital.
- The HNECC PHN-commissioned Small Towns After-hours Program operates in the small town of Murrurundi in the Upper Hunter Shire LGA. The HNECC PHN-commissioned Aged Care Emergency Service provides coverage to Singleton LGA. There are no commissioned services with coverage of Muswellbrook LGA.

AH Unmet Demand

- The Upper Hunter SA3 (including the Upper Hunter Shire and Musswellbrook LGAs) has the highest rate of AH Category 4/5 ED presentations per 1,000 population (179.4) in the HNECC PHN Region, with 5% of the overall after-hours category 4/5 ED attendances.
- Peak periods of unmet demand in Upper Hunter Valley Health Facilities are Sunday PM (12:00-23:59) and Saturday PM (12:00-23:59) with 3.8 and 3.5 attendances per hour respectively. See figure 11 for more detail.

Figure 9 After-hours Lower Urgency ED attendances per hour - Upper Hunter Valley Health Facilities, 2017/18 - 2018/19 (including Muswellbrook Hospital, Scone Health Service, Singleton Health Service, Murrurundi Health Service, Merriwa Health Service, Denman MPS)



Source: Hunter New England Local Health District

Community Consultation

There were just four respondents to HNECC PHN's After-hours survey from the Uppper Hunter Valley. Comments included:

- *"It takes weeks to see a GP"*
- *"non existent"*
- *"Often the local hospital is staffed by an on call doctor and the nurses either tell you to see your GP in the morning or that you will need to wait in the waiting area for a while, as the on call doctor isn't there and will only come in for something important."*

Priority 7 – The Central Coast

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
17	Central Coast (C) (NSW)	3.05	6.51	6.29	4.63

AH Need

- The Central Coast has a population of 342,047, representing 27% of the HNECC PHN total. It also has the 3rd highest rate of annual population growth (1%).
- The Central Coast LGA is comprised of the Wyong SA3 and the Gosford SA3 with estimated residential populations of 158,638 and 169,053 respectively. Aboriginal and / or Torres Strait Islander people comprise 4.9% of the population in Wyong SA3 and 2.8% of the population in Gosford SA3. Children 0-4 years comprise 6.1% of the population in Wyong SA3 and 5.7% of the population in Gosford SA3. Wyong SA3 has a lower median weekly household income ($1,190) compared with Gosford ($1,330)[5].

[5] Australian Bureau of Statistics – Quick Census Stats 2016. Accessed 6/08/20
https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/10202?opendocument

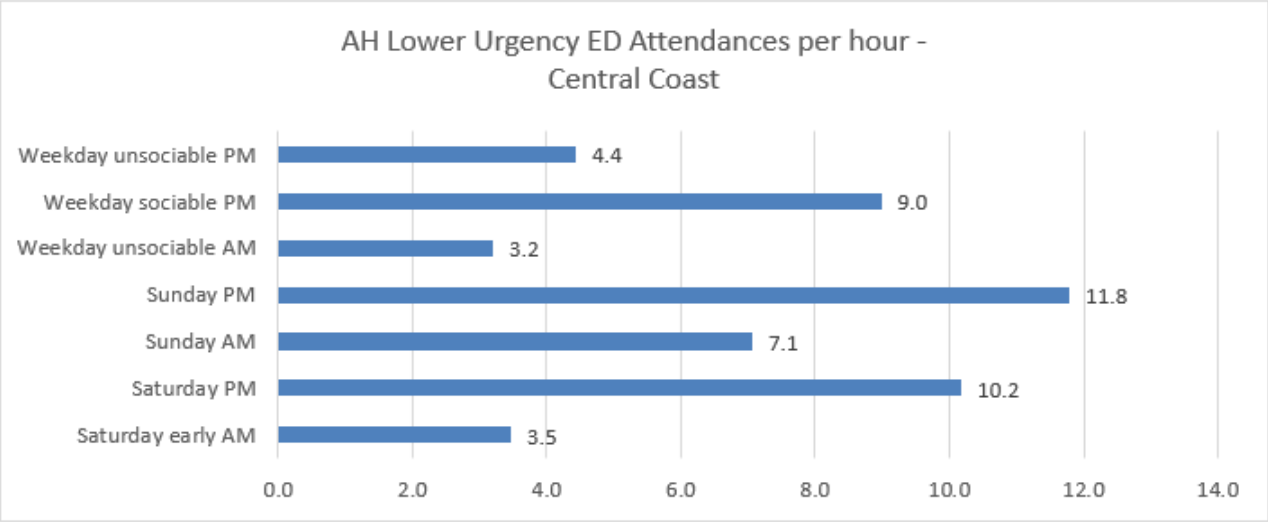
AH Availability

- In the Central Coast LGA, GP services are open during the after-hours period for 12:25 hours per week per 10,000 population (HNECC PHN 13:29) and pharmacy services 18:54 hours per week 10,000 population (4th best availability in the HNECC PHN region) (HNECC PHN 17:52).
- HNECC PHN commissions Central Coast Primary Care to provide three after-hours GP clinics on the Central Coast at Woy Woy (Woy Woy After-hours Medical Service), Erina (Bridges After-hours) and Wyong (Bridges After-hours).
- When practices in the Central Coast are closed, 28% (29/104) have a GP on call arrangements through the practice, 27% (28/104) have formal arrangements with Bridges / Woy Woy After-hours Services, 21% (22/104) have no after-hours arrangement advertised and 10% (10/104) have formal arrangements in place with a medical deputising service (excluding GP Access After-hours).

AH Unmet Demand

- Wyong SA3 has the highest overall number of lower urgency after-hours ED presentations in the HNECC region (13%). Wyong SA3 has 93.6 lower urgency after-hours ED presentations per 1,000 population and Gosford SA3 52.2 (HNECC PHN 94.1).
- Peak period of unmet demand in Central Coast Health Facilities are Sunday PM (12:00-23:59) and Saturday PM (12:00-23:59) with 11.8 and 10.2 attendances per hour respectively. See figure 12 for more detail.

Figure 10 After-hours Lower Urgency ED attendances per hour – Central Coast Health Facilities, 2017/18 - 2018/19 (including Gosford Hospital and Wyong Hospital).



Source: Central Coast Local Health District

Community Consultation

170 Central Coast residents responded to HNECC PHN's AH survey. 58% (99/170) reported it was difficult to find what health services were available and 68% (115/170) reported it was difficult to see the health provider required. There were 94 comments. Key themes included:

- Lack of bulk billing was a deterrant for utilising AH GP services
- Limited ancilliary services available including late night pharmacies and imaging on the weekend. Many commented that this often meant attending ED was the only option, though not their preferred choice.
- The convenience of home doctor services, particularly for young children. However access to these services was increasingly limited.

– It was also noted that the Central Coast has a large commuter population, so for many, weeknights is the only option for seeing a GP.

Priority 8 - Greater Newcastle

The Greater Newcastle Cluster is comprised of Port Stephens, Lake Macquarie and Newcastle LGAs. These LGAs were ranked 9th, 20th and 23rd respectively on the composite index score.

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
9	Port Stephens (A)	4.17	4.51	3.72	4.49
20	Lake Macquarie (C)	2.42	5.11	6.57	4.09
23	Newcastle (C)	1.37	6.42	13.66	4.43

AH Need

– The Greater Newcastle Cluster has a total population of 441,713, representing 35% of the HNECC PHN population.

– Port Stephens LGA has a relatively higher proportion people aged over 65 years (23%) and an estimated 40-50,000 additional transient holiday makers during the summer months. Newcastle LGA has a relatively higher proportion of people experiencing homelessness (0.5%) and the highest proportion of residents from overseas with poor self rated English proficiency, albeit only 1.2% of the population.

AH service availability

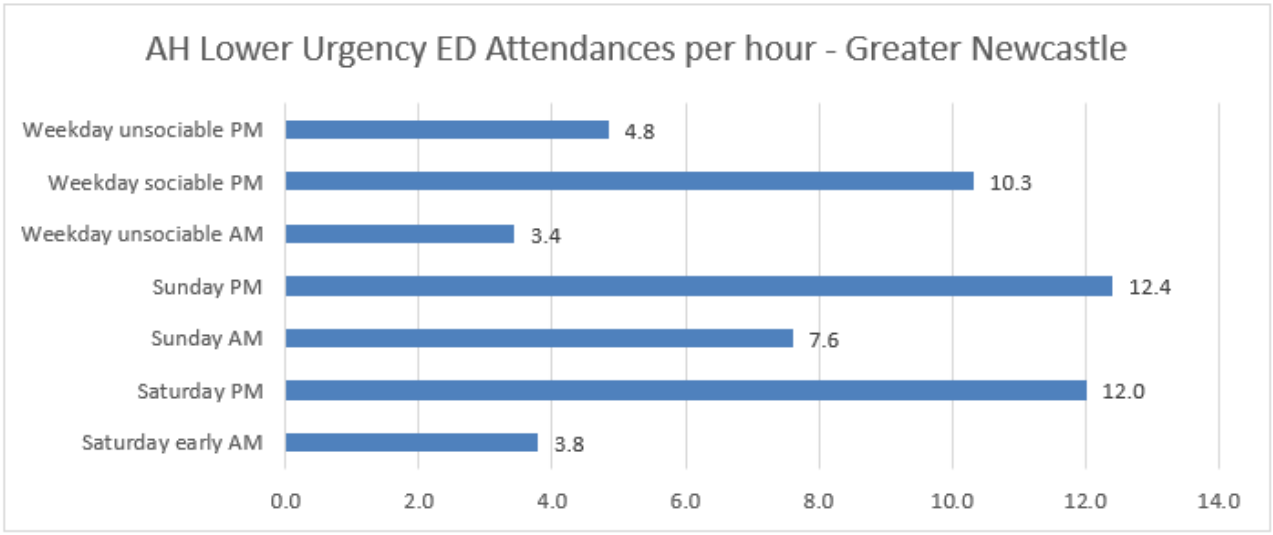
- Lake Macquarie LGA and Newcastle LGA have the highest number of GP service hours during the after-hours period per 10,000 population (14:26 hours and 46:53 hours per week respectively). Port Stephens LGA has a relatively lower GP service availability with 2:16 hours per week (HNECC PHN 13:29).
- When practices in the Greater Newcastle Cluster are closed, 60% (86/143) advise patients to attend the GPAAH service, 17% (25/143) advise of formal arrangements in place with another medical deputising service, 9% (13/143) do not adverstise an after-hours arrangement, <5% of practices advise to attend the local hospital, advertise a GP on call, or are part of an alternative GP cooperative.
- HNECC PHN commissions Hunter Primary Care to provide the GP Access After-hours Service which includes 4 after-hours clinics within the Greater Newcastle Cluster. The clinics are collocated with John Hunter Hospital, Calvary Mater Hospital, Belmont Hospital and Toronto Community Health Centre.
- HNECC PHN also commissions the Aged Care Emergency Service to provide coverage to RACFs in Newcastle, Maitland and Port Stephens LGAs.

AH unmet demand

- Newcastle SA3 accounts for 13% of the lower urgency ED presentations in the HNECC PHN region. Comparable figures for other Greater Newcastle SA3s include Lake Macquarie-East (8%), Lake Macquarie West (5%) and Port Stephens (5%). Newcastle SA3 has 77.2 lower urgency after hours ED presentations per 1000 population, Lake Macquarie – East 80.3, Lake Macquarie - West 72.9 and Port Stephens 76.9 (HNECC PHN 94.1).

– Peak periods of unmet demand in Greater Newcastle Health Facilities are Sunday PM (12:00-23:59) and Saturday PM (12:00-23:59) with 12.4 and 12 attendances per hour respectively. See figure 13 for more detail.

Figure 11 After-hours Lower Urgency ED attendances per hour - Greater Newcastle Health Facilities, 2017/18 - 2018/19 (including John Hunter Hospital, Calvary Mater Hospital, Belmont Hospital, Tomaree Community Health Centre.)



Source: Hunter New England Local Health District

Community Consultation

HNECC PHN's after-hours survey received 91 respondents from the Greater Newcastle Cluster. 60% (55/91) reported it was difficult to see the health provider they needed to see. There were 38 comments provided. Key themes included:

- Positive experiences seeking care with GPAAH,
- Waiting times in emergency departments,
- Concerns regarding home doctor services (poor quality and limited coverage).

1.6 Profiles of After-hours Needs and Access for Vulnerable Cohorts

Aboriginal and Torres Strait Islander People

AH Need

- In 2016, there were 79,405 people who identified as Aboriginal and/or Torres Strait Islander people in the HNECC PHN region, representing 6.4% of the total population. Table 7 shows the total number and proportion of people who identify as Aboriginal and/or Torres Strait Islander by LGA in descending order. Moree Plains LGA has the highest proportion of people identifying as Aboriginal and/or Torres Strait Islander (26.6%) and Newcastle LGA has the lowest proportion (4.1%).

Table 6 Proportion of all residents who identify as Aboriginal and/or Torres Strait Islander by LGA, ERP 2016

LGA	Aboriginal people	Total population	Aboriginal population as proportion of total population (%)
Moree Plains (A)	3,631	13,627	26.6
Gunnedah (A)	1,911	12,491	15.3
Liverpool Plains (A)	1,190	7,847	15.2
Narrabri (A)	2,026	13,367	15.2
Tamworth Regional (A)	7,464	60,990	12.2
Inverell (A)	1,738	16,812	10.3
Muswellbrook (A)	1,633	16,462	9.9
Armidale Regional (A)	2,726	30,313	9.0
Cessnock (C)	4,871	56,720	8.6

Uralla (A)	504	6,147	8.2
Glen Innes Severn (A)	667	8,934	7.5
Mid-Coast (A)	6,834	91,801	7.4
Tenterfield (A) - part a	455	6,261	7.3
Gwydir (A)	382	5,326	7.2
Walcha (A)	224	3,130	7.2
Singleton (A)	1,596	23,576	6.8
Upper Hunter Shire (A)	901	14,344	6.3
Maitland (C)	4,909	79,063	6.2
Dungog (A)	548	9,101	6.0
Port Stephens (A)	4,068	71,115	5.7
Lake Macquarie (C)	9,515	202,332	4.7
Central Coast (C) (NSW)	15,371	336,611	4.6
Newcastle (C)	6,554	160,707	4.1
HNECC PHN	**79,405**	**1,247,455**	**6.4**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published 2020: January 2020

AH service availability

- There are nine Aboriginal Community Controlled Health Organisations (ACCHOs) in the HNECC PHN region. However, none are open during the AH period.
- The AH arrangements of ACCHO clinics across the HNECC PHN region provides an indicator of effectiveness of current pathways to AH services for Aboriginal and/or Torres Strait Islander people. Table 8 shows AH arrangements of ACCHO clinics in the HNECC PHN region. Over two thirds of ACCHO clinics in the HNECC PHN region direct patients to their local hospital in the AH period.

Table 7 AH arrangements of ACCHO clinics in the HNECC PHN region

ACCHO AH Arrangement	No.	%
Attend local hospital (GP-VMO staffed)	12	54%
Attend local hospital (not GP-VMO staffed)	3	14%
GP on call (including single or multi-practice roster)	0	0%
Medical deputising service (excluding GP Access AH)	0	0%
Bridges or Woy Woy AH Medical Service	1	5%
GP Access AH	5	23%
Cooperative (excluding Bridges/WWAHMS)	1	5%
None advertised	0	0%
Total	**22**	**100%**

Source: HNECC PHN Chilli Database

AH Unmet Demand

- Table 9 shows the proportion of lower urgency after-hours emergency department presentations by Aboriginal and / or Torres Strait Islander people as a proportion of total after-hours lower urgency emergency department presentations. Moree Plains LGA has the highest proportion of after-hours lower urgency ED presentations by Aboriginal and / or Torres Strait Islander people (48.1% followed by Narrabri LGA (28.5%). Dungog had the lowest proportion (7.5%).

Table 8 After-hours lower urgency emergency department presentations by Aboriginal and / or Torres Strait Islander population as a proportion of the total presentations, by LGA 2017/18 and 2018/19.

LGA	AH Lower Urgency ED Presentations by Aboriginal and / or Torres Strait Islander Population (%)	Aboriginal population as proportion of total population (%)
Moree Plains (A)	48.1	26.6
Narrabri (A)	28.5	15.2
Gunnedah (A)	27.5	15.3
Inverell (A)	22.0	10.3
Tamworth Regional (A)	20.9	12.2
Liverpool Plains (A)	19.2	15.2
Armidale Regional (A)	17.9	9.0
Walcha (A)	17.2	7.2
Muswellbrook (A)	17.1	9.9
Tenterfield (A) - part a	13.6	7.3
Gwydir (A)	13.3	7.2
Singleton (A)	13.1	6.8
Cessnock (C)	12.6	8.6
Glen Innes Severn (A)	12.3	7.5
Mid-Coast (A)	11.3	7.4
Uralla (A)	11.2	8.2
Maitland (C)	10.5	6.2
Port Stephens (A)	8.9	5.7
Central Coast (C) (NSW)	7.6	4.6
Upper Hunter Shire (A)	8.1	6.3
Lake Macquarie (C)	8.0	4.7
Newcastle (C)	7.6	4.1
Dungog (A)	7.5	6.0
HNECC PHN	**12.3**	**6.4**

Source: Hunter New England Local Health District and Central Coast Local Health District

Barriers and Issues for Aboriginal and/or Torres Strait Islander People Accesing After-hours Primary Care Services

HNECC PHN's Aboriginal Health Access Team and a representative from an Aboriginal Medical Service provided feedback regarding barriers / issues for access to after-hours primary care for Aboriginal and / or Torres Strait Islander people:

- As none of the ACCHO Clinics across the region operate after-hours, their clients are often required to either defer treatment or to attend ED (unless they can find and get appointments with local GP practices that offer after-hours consultations, preferably by bulk billing)
- Transport - Living in a rural town or on a Mission (Aboriginal community) which is not near a town centre often means limited public transport options to after-hours primary care services. In comparison, hospitals tend to be on public transport routes, and sometimes calling an Ambulance is the only option.
- Cost - Aboriginal and/or Torres Strait Islander people may access ED after-hours if there are no local bulk billing primary health services accessible during the day (no ACCHO or Bulk Billing GPs). There are very limited bulk billed / affordable secondary services (specialists). In addition, there are very limited bulk billed / affordable allied health services (exercise physio, dieticians, psychology, etc)

- Cultural appropriateness of mainstream after-hours primary care services and emergency deparments can be an issue. Moreover, one-off contacts with either an after-hours service or an ED may not be compatible with the holistic care and continuity of care required for Aboriginal and / or Torres Strait Islander people with complex health and social issues.
- Medical Deputising Services - The quality and delivery of cultural safety training is uncertain and concerns were expressed regarding decisions by private providers to offer or decline services in Aboriginal communities. Additional barriers included potential privacy issues (gossip in the community from a Doctor being at the house) and safety issues (mandatory reporters judging lifestyle or house).

Residential Aged Care

AH Need

- People aged 65 years and over represent 20% of the total HNECC PHN population (NSW 16.1%). As seen in Table 10, the Mid-Coast LGA has the highest proportion of people aged 65 years of age (30%) and Muswellbrook LGA has the lowest proportion of people aged 65 years of age (13%).
- In the HNECC PHN region there were 14,126 RACF places available within 171 services as of June 2018[6]. This accounts for 19.5% of the total places available in NSW. This includes 3,948 RACF places available on the Central Coast, 6,676 places available in the Hunter, 1,968 places in the New England.

Table 9 Number and proportion of people aged 65 years and over by LGA, 2018 ERP

LGA	Number of people aged 65 years and over	% of population aged 65 years and over
Mid-Coast (A)	28,328	30%
Tenterfield (A) - part a	1,769	29%
Walcha (A)	819	26%
Glen Innes Severn (A)	2,286	26%
Gwydir (A)	1,353	25%
Port Stephens (A)	16,956	23%
Liverpool Plains (A)	1,770	22%
Uralla (A)	1,257	21%
Inverell (A)	3,480	21%
Central Coast (C) (NSW)	70,041	20%
Lake Macquarie (C)	41,601	20%
Dungog (A)	1,883	20%
Upper Hunter Shire (A)	2,626	18%
Tamworth Regional (A)	11,456	18%
Gunnedah (A)	2,273	18%
Narrabri (A)	2,323	18%
Armidale Regional (A)	5,146	17%
Cessnock (C)	9,429	16%
Newcastle (C)	24,963	15%
Moree Plains (A)	2,000	15%
Maitland (C)	11,858	14%
Singleton (A)	3,134	13%
Muswellbrook (A)	2,143	13%
HNECC PHN	**248,894**	**20%**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published 2020: January 2020

[6] Australian Institute of Health and Welfare, My Aged Care Region Tool, 2018, https://www.gen-agedcaredata.gov.au/My-aged-care-region, accessed 06/08/20.

AH Service Availability

- During the after-hours period, residents of Aged Care Facilites are reliant on access to primary care via home visits or on call (phone based) support. During the after-hours focus groups and interviews, several GPs reported that the majority of demand for after-hours on-call services through their practice came from Residential Aged Care Facilities.
- HNECC PHN commissioned Aged Care Emergency Service (ACE) provides phone based clinical support to staff in RACFs to manage residents acute non-life threatening conditions within the nursing home, or when hospital transfer is required support high quality handovers to be provided.
- HNECC PHN does not currently commission after-hours services specifically for RACFs on the Central Coast. In the after-hours focus groups, representatives from Aged Care Facilities on the Central Coast reported significant difficulty at times accessing a GP services for simple reasons such as phone orders for medications.

Unmet Demand

- Even for residents whose GP does provide after-hours care, RACF representatives reported difficulty accessing care when the GP is unavailable or on leave, as there is often no alternative arrangement in place. In these situations, facilities without access to the ACE service would need to transfer patients to the ED to access care, albeit for low acuity reasons, for example having a prescription written.
- In the New England Region, in particular, one stakeholder identified that in small towns where the local hospital is often less than 100m away, an Ambulance would still be called to transfer the patient to see a doctor in ED for lower urgency reasons. It was relayed that improved access to after-hours care would prevent patients being transferred unnecessarily to hospital.
- In 2017-18 amongst people aged over 65 years, Upper Hunter SA3 had the highest number of lower urgency ED presentations, in the after hours period per 1,000 (143.5), followed by Moree-Narrabri (99.0) and Tamworth-Gunnedah (89.0), which were well above the HNECC PHN rate (52.5). The lowest number per 1,000 was Great Lakes SA3 (23.9). See table 11 for further details.

Table 10 Lower Urgency presentations in AH period per 1,000 population for people aged 65 years and over in 2017-18 by SA3

SA3	Lower Urgency ED presentations in AH period per 1,000 population (65 years and over)
Upper Hunter	143.5
Moree - Narrabri	99.0
Tamworth - Gunnedah	89.0
Armidale	88.2
Lower Hunter	87.1
Inverell - Tenterfield	72.1
Taree - Gloucester	55.1
Maitland	54.0
Lake Macquarie - East	49.2
Wyong	47.6
Newcastle	43.5
Port Stephens	42.5
Lake Macquarie - West	32.4
Gosford	28.7
Great Lakes	23.9
HNECC PHN	**52.5**

Source: AIHW Use of emergency departments for lower urgency care: 2015–16 to 2017–18

Notes: ED presentations for lower urgency care are presentations by place of residence.

People with Pre-Existing Health Conditions

Another group that was identified in the consultations with special requirements for after-hours primary care included people with pre-existing health conditions. Two priorities from this group were:

- people with mental ill-health
- people with disabilities

A number of stakeholders, including mental health professionals, noted that people with mental ill-health often need support or care outside of traditional hours. While some of these people may have regular GPs, many practices do not offer after-hours services and LHD community-based mental health crisis services are often stretched or not readily accessible. As a result, it was again noted that people with mental health conditions or co-morbidities often present to EDs, a setting that is often busy and frantic, which may be detrimental to the patient's condition.

Similarly, people with disabilities were identified as a group that often has complex physical needs and those living in group homes can have difficulty accessing primary care at all hours of the day. Many group homes do not have registered nurses on staff and transfer to an emergency department can therefore be seen as a 'safe option', both within and outside standard business hours. Similarly, in the absence of alternative options those people with disabilities who live at home or with carers often have to default to emergency department care.

1.7 Community Barriers to Accessing Available After-hours Primary Care Services

Community Awareness of After-hours Primary Care Services

In the region wide community survey conducted by HNECC PHN in 2019, 60% of respondents (207/345) reported it was difficult to determine what health services were available.

Similarly, the consumer representatives that participated in HNECC PHN's after-hours focus groups stated that there was a general lack of awareness about after-hours primary care services and of different service models. They argued that this was not unique to the HNECC PHN region but was a national issue. Indeed, some argued it was difficult for individual PHNs to address this lack of knowledge and that a national strategy was required through, for example, adoption of a single, national phone number that could refer patients to local services.

Compounding this issue in the HNECC PHN region is the restrictions placed on direct marketing activities for any after-hours services holding a deed with the Commonwealth Government in the Approved Medical Deputising Program (see section 2.8 for further program details). These restrictions restrictions apply to all forms of direct marketing activity including: text and SMS messages, emails, online advertising through third party websites, social media, database marketing, fliers, catalogues, promotional letters and events, newspaper and magazine advertisements, television and outdoor advertising. This currently applies to the GP Access After-hours Program, commissioned by HNECC PHN.

Out of Pocket Costs to Access After-Hours Primary Care Services

The consumer representatives who participated in the focus groups and community survey, stated that out of pocket costs are common in after-hours in the primary care setting and there are limited bulk billed services available. This was seen as a significant barrier in accessing after-hours primary care, particularly for financially disadvantaged and vulnerable groups. Community survey respondents from the Central Coast were the most likely to identify cost as a barrier to access. Central Coast respondents also identified the opportunites to improve information available regarding bulk billing vs private billing services.

A key driver to private billing in after-hours care is the limited rebates available under the Medicare Benefits Schedule (MBS), which GP's indicate is insufficient to cover the rising costs of providing care, see section 1.8 for further information.

Of HNECC PHN's current commissioned services, the GPAAH and STAH services are fully bulk-billed, whereas the Central Coast After-hours GP Service has mixed billing across the three clinics. That is, Woy Woy is fully bulk-billed, Kanwal is mixed billings and Erina is private billings only. There are no costs incurred by RACFs to access the ACE program.

Ancillary Services – Pharmacy, Imaging, and Allied Health

Difficulty accessing services such as pharmacy and imaging were frequently reported as a barrier to accessing after-hours primary care – particularly on the Central Coast. Two reasons were identified – these services were either closed when required or were located significant distances away.

Similarly during the after-hours focus groups, representatives from both Local Health Districts reported that many people utilise emergency departments after-hours because they offer a "*one stop shop*" with all the required ancilliary services available. This offers particular value for patients seeking care after-hours due to injuries, which was the most frequent presenting condition after-hours within both Hunter New England and Central Coast Facilities.

Access to Urgent Care Appointments

In the region wide community survey conducted by HNECC PHN, 69% (238/345) of respondents reported it was difficult (sometimes, usually or always) to access the health provider they needed to see for urgent care and after-hours care. The level of difficulty was especially high amongst the Mid-Coast, Tablelands and Mehi Clusters, from which 89% (39/44) of respondents reported difficulty accessing the health provider required.

A key theme identified in the qualitative analysis from this survey was difficulty accessing GPs during business hours for urgent care needs due to long waiting lists of several weeks. Many respondents expressed that in these situations the ED became their only option for urgent care, though not their preferred option. Similarly, during the stakeholder interviews and focus groups, clinicians reported that although time is reserved for urgent care appointments, these were booked up immediately. Representatives from Hunter New England LHD also reported that unmet demand for urgent care appointments in the early afternoon tended to push into the after-hours period.

Local Health District Barriers to Referrals between Acute and Primary Care After-hours

In the after-hours focus groups with representatives from Hunter New England and Central Coast LHDs, referrals from EDs to after-hours primary care services were discussed. Whilst the ability to access and refer patients to after-hours primary care services was highly valued by staff in EDs, some challenges were noted. These included tedious administrative processes associated with making referrals, limitations on conditions / patients able to be managed within 12 minute appointments, and limited additional staffing capacity in times of peak demand.

1.8 Policy, Workforce And Market Factors Influencing Supply of After-hours Primary Care

GP Perspectives on Barriers to Supply of After-hours Care

In the after-hours focus groups and interviews, GPs indicated that many practices, especially those in regional and rural areas, did not provide after-hours care or, where they did, it was often practice-based and only available for patients of that practice. The factors driving the low uptake of after-hours service delivery included:

- the physical inability of small or single doctor practices to provide after-hours care
- the lack of demand in smaller, less populous areas

- the associated lack of financial incentive in the face of insufficient demand
- the personal toll on doctors being on call on top of their busy practice workload during standard hours
- safety concerns in staffing practices late at night, especially for female doctors and patients
- the high cost of locums for rural locations if practices did wish to employ someone to provide after-hours care.

One other issue that was commonly raised in the consultations by GPs was the need for improved handover processes from EDs and local hospitals back to patients' regular GPs so that the GPs are aware of what treatment or medications have been administered.

GP Workforce Shortages

A key driver of the lack of access to after-hours care across the HNECC PHN region, particularly in the regional and rural areas was the shortage of GPs. In HNECC PHN's AH GP survey, respondents identified GP workforce shortages as a primary issue across all regions and various AH arrangements. The GP shortage not only affects the availability of after-hours care but access to primary care during standard hours as manifested by practices not accepting new patients and long waiting times for patients within standard hours (waits of two to three weeks for appointments were cited as not uncommon). Waiting times such as this have been reported by community members as a key reason for seeking care at emergency departments in the after-hours period.

Table 12 depicts the GP total FTE and FTE per 100,000 population by LGA in ascending order. Uralla LGA has the lowest FTE per 100,000 (54.44), followed by Liverpool Plains LGA (77.28) and Narrabri LGA (77.85). The LGA with the highest FTE per 100,000 population was Singleton (164.38).

Moreover, it was noted that the profile of GPs in regional and rural areas is aging and there have been long-standing difficulties in attracting new staff to these areas. Younger clinicians who are prepared to move to regional areas were seen as having expectations of a work-life balance that does not extend to providing after-hours services or being regularly on-call. Similarly, GP representatives from the New England region indicated that after-hours work in their community is exhausting and exacts a considerable personal toll.

A number of GPs stated that the shortage of GPs was compounded by a lack of access to allied health services and support services, including pharmacy, imaging and pathology. That is, even if patients were able to access after-hours GP care, they may not be able to obtain medications or diagnostic services without visiting an emergency department or waiting until the next day.

Table 11 GP Workforce Availability per Local Government Area, 2018

LGAs	GP FTE 2018	ERP Population 2018	FTE per 100,000 population
Uralla (A)	3.3	6,062	54.44
Liverpool Plains (A)	6.1	7,893	77.28
Narrabri (A)	10.3	13,231	77.85
Dungog (A)	7.9	9,346	84.53
Cessnock (C)	50.2	59,101	84.94
Maitland (C)	71.2	83,203	85.57
Gunnedah (A)	11.5	12,661	90.83
Tenterfield (A)	6.2	6,638	93.40
Mid-Coast (A)	91.7	93,288	98.30
Inverell (A)	16.9	16,844	100.33
Central Coast (C) (NSW)	362.7	342,047	106.04
Tamworth Regional (A)	67.7	62,156	108.92
Lake Macquarie (C)	224.9	204,914	109.75
Port Stephens (A)	82.2	72,695	113.08
Moree Plains (A)	15.3	13,350	114.61
Gwydir (A)	6.4	5,349	119.65
Upper Hunter Shire (A)	18.6	14,220	130.80
Glen Innes Severn (A)	11.8	8,908	132.47
Armidale Regional (A)	41.2	30,707	134.17
Muswellbrook (A)	22.9	16,383	139.78
Newcastle (C)	236.5	164,104	144.12
Walcha (A)	4.7	3,132	150.06
Singleton (A)	38.5	23,422	164.38
HNECC PHN	1408.4	1,269,654	110.93

Source: National Health Workforce Dataset, 2018, Estimated Residential Population 2018

Remuneration and the Medical Benefits Schedule (MBS) Rebates

Table 13 outlines the After-hours MBS items as at May 2020. The standard item number utilised by After-hours GP Clinics in HNECC PHN's After-hours Commissioned services is 5020. This attracts a rebate of $50.55.

During the stakeholder consultation (both focus groups and the AH GP survey), it was identified that MBS rebates for after-hours primary care did not adequately cover the costs of delivering care. Survey respondents also commented that current financial support provided by the government are insufficient to maintain viability of after-hours services. Clinicians also reported that prior to the introduction of MBS telehealth rebates during the COVID-19 pandemic, provision of on-call after-hours phone services were either based on good-will of GPs or at significant cost to the patient. Insufficient remuneration from the MBS during the after-hours period likley contributes to lower rates bulk billing and higher private fees for the community.

Under the recent telehealth MBS items introduced, GPs may now claim telehealth items for standard appointments of less than 20 minutes. However, the patient must have an existing relationship with the practice. That means that the medical practitioner performing the service is from a practice where the patient has had a face to face appointment in the past 12 months, or has formal arrangements in place with a practice where the patient has had at least one face to face service in the past 12 months. This may create challenges for vulnerable populations such as those experiencing homelessness, children and transient visitors if they require access to a GP Telehealth appointment during the after-hours period.

Table 12 After-hours MBS Rebates

After-hours MBS Rebates, as at May 2020				
Attendance Period	**Applicable Time**			**Items**
	Monday to Friday	**Saturday**	**Sunday and/or public holiday**	
Urgent after-hours attendance	Between 7am - 8am and 6pm - 11pm	Between 7am - 8am and 12 noon - 11pm	Between 7am - 11pm	585, 588, 591, 594
Urgent after-hours in unsociable hours	Between 11pm - 7am	Between 11pm - 7am	Between 11pm - 7am	599, 600
Non-urgent After-hours In consulting rooms	Before 8am or after 8pm	Before 8am or after 1pm	24 hours	5000, 5020, 5040, 5060 5200, 5203, 5207, 5208
Non-urgent after-hours at a place other than consulting rooms, hospital or Residential Aged Care Facility	Before 8am or after 6pm	Before 8am or after 12 noon	24 hours	5003, 5023,5043, 5063 (VR) 5220, 5223, 5227, 5228 (non-VR)
Non-urgent after-hours in a Residential Aged Care Facility	Before 8am or after 6pm	Before 8am or after 12 noon	24 hours	5010, 5028, 5049, 5067 (VR) 5260, 5263, 5265, 5267 (non-VR)
Temporary Covid-19 GP Telehealth appointment	24 hours	24 hours	24 hours	91800 / 91809

Source: Australian Government Department of Health, Medicare Benefits Schedule Online, 2020

After-Hours Practice Incentive Program

The After-hours Practice Incentive Program (PIP) provides financial incentives for accredited General Practices that provide their patients access to after-hours care. HNECC PHN is not funded to replicate or duplicate services provided by the After-hours Practice Incentive Program.

The after-hours PIP payments are categorised into 5 levels of payment (see table 14), depending on the hours of coverage – social hours (6pm to 11pm weeknights), and unsociable hours (11pm to 8am weeknights), from 12 noon Saturdays and all day Sundays and Public Holidays.

In the HNECC PHN region, the highest number of After-hours PIP claims occurs for level 2 (101 practices), followed by level 5 (92 practices). The lowest number of After-hours PIP claims occurs for level 3 (8 practices).

Table 13 Number of General Practices receiving the After-hours PIP payment for the quarter, HNECC PHN, May 2018.

Payment level	After-hours period	Care provider	AH PIP Practices
Level 1: Participation	Complete after-hours period: -outside of 8am-6pm weekdays -outside of 8am-12noon Saturday, and -all day Sundays and Public Holidays	The Practice does not need to provide any after-hours care itself. Rather it has formal arrangements in place with other providers including Medical Deputising Services (MDS), to ensure access for practice patients.	68
Level 2: Sociable After-hours Cooperative Coverage	Sociable after-hours period: -6pm through to 11pm weeknights	The Practice participates in a cooperative arrangement that provides after-hours care to practice patients, including minimum hourly participation requirements.	101
	Unsociable after-hours period: -11pm through to 8am weeknights, -outside of 8am-12noon Saturday, and -all day Sundays and Public Holidays	Formal arrangements in place with other providers, including MDS, to ensure access for practice patients	
Level 3: Sociable After-hours Practice Coverage	Sociable after-hours period: -6pm through to 11pm weeknights	The Practice must provide after-hours care to practice patients directly through the practice.	8
	Unsociable after-hours period: -11pm through to 8am weeknights, -outside of 8am-12noon Saturday, and -all day Sundays and Public Holidays	Practices must ensure formal arrangements are in place with other providers, including MDS, to ensure practice patients have access to care.	
Level 4: Complete After-hours Cooperative Coverage	Complete after-hours period: -outside of 8am-6pm weekdays -outside of 8am-12noon Saturday, and -all day Sundays and Public Holidays	The Practice participates in a cooperative arrangement that provides all after-hours care to practice patients, including minimum hourly participation requirements.	29
Level 5: Complete After-hours Coverage	Complete after-hours period: -outside of 8am-6pm weekdays -outside of 8am-12noon Saturday, and -all day Sundays and Public Holidays	Practices must provide all after-hours care to practice patients.	92

For Levels 3-5: In rural and remote areas (RRMA classification 3 to 7), providing GP care through local arrangements outside of the practice, such as local hospital arrangements, is acceptable as long as practice patients have access to a practice GP.

It was identified during the stakeholder consultations that the difference in remuneration provided by hospital facilities rather than MBS billing was a key factor in providing after-hours services through local hospital arrangements rather than in a primary care setting. Therefore, current structure of the After Hours PIP further supports delivery of after-hours services within the local hospital setting in rural areas.

Approved Medical Deputising Service Program

Medical Deputising services do not receive funding through the Commonwealth Government's Approved Medical Deputising Service (AMDS) Program. Rather, an AMDS is eligible to employ non-vocationally registered doctors who are normally restricted from accessing the MBS. Therefore, they gain access to an

expanded medical workforce that may provide after hours primary care services and who qualify for access to the MBS.

Marketing Restrictions

In order to minimise overservicing by Medical Deputising Services beyond actual demand, the Commonwealth Government has implemented significant restrictions on any direct marketing by services that hold a deed under the AMDS program. This includes marketing MDS consultations as a convenient and / or cost-effective alternative to general practices and applies to: text and SMS messages, emails, online advertising through third party websites, social media, database marketing, fliers and other types of marketing.

GP Cooperatives that do not hold a deed with the Commonwealth Government under the AMDS program are not subject to the above marketing restrictions.

2. Considerations for Future Planning

2.1 Intervention Domains for the HNECC PHN region

An approach to categorising intervention domains into system, service and community has been utilised which originated from North Western Melbourne PHN's After Hours Gap Analysis and Recommendations report produced by Impact Co.[7].

The three intervention domains are defined as follows:

- *Service* – enhancement of existing services or creation of new services that directly address issues relating to service availability within the area.
- *System* – interventions aimed at integrating or increasing partnerships between providers to streamline the patient's journey of care. Such interventions may apply to some or all of the health providers and consumers in the region.
- *Community* – interventions designed to build awareness and knowledge of members of a certain community to support improved access and capability to navigate the system. This may also include interventions that address key health indicators of after-hours need as previously described.

The table below depicts intervention domain considerations by LGA. Intervention domains are recommended according to the LGAs relative score on each of the AH sub-indices (AH need, AH service availability and AH unmet demand.)

Table 14 Intervention domain considerations according to location and sub-indices ranking

Rank on each sub-index	PRIORITY
1-11	HIGH
12-23	LOW

-

LGA	AH Sub-indices			Intervention domain indicated
	AH Need	AH Service Availability	Unmet Demand	
Walcha (A)	LOW	HIGH	LOW	Service
Gwydir (A)	LOW	HIGH	LOW	Service
Glen Innes Severn (A)	LOW	HIGH	HIGH	Community and Service
Gunnedah (A)	LOW	HIGH	HIGH	Community and Service
Inverell (A)	HIGH	HIGH	LOW	Service and System
Uralla (A)	LOW	HIGH	LOW	Service
Moree Plains (A)	HIGH	HIGH	LOW	Service and System
Mid-Coast (A)	HIGH	HIGH	HIGH	System, Community and Service
Port Stephens (A)	HIGH	HIGH	HIGH	System, Community and Service
Upper Hunter Shire (A)	LOW	HIGH	HIGH	Community and Service
Armidale Regional (A)	HIGH	LOW	HIGH	System and Community

[7] North Western Melbourne PHN After-hours Primary Health Care: Gap Analysis and Recommendations (2018) Impact Co (Available at: https://nwmphn.org.au/wp-content/uploads/2019/03/181219-NWMPHN-After-Hours-Gap-Analysis-Final-Report-FINAL.pdf)

Cessnock (C)	HIGH	LOW	LOW	Community
Muswellbrook (A)	LOW	LOW	HIGH	System and Community
Dungog (A)	LOW	HIGH	LOW	Service
Maitland (C)	HIGH	LOW	HIGH	System and Community
Singleton (A)	LOW	LOW	LOW	Targeted intervention may be warranted for specific population groups
Central Coast (C)	HIGH	LOW	HIGH	System and Community
Tamworth Regional (A)	HIGH	LOW	HIGH	System and Community
Narrabri (A)	LOW	LOW	LOW	Targeted intervention may be warranted for specific population groups
Lake Macquarie (C)	HIGH	LOW	LOW	Community
Liverpool Plains (A)	LOW	LOW	LOW	Targeted intervention may be warranted for specific population groups
Tenterfield (A) - part a	LOW	LOW	LOW	Targeted intervention may be warranted for specific population groups
Newcastle (C)	HIGH	LOW	HIGH	System and Community

Authors of the North West Melbourne PHN needs assessment offer the following rational for the indicated intervention domains:

Intervention domain	Rationale
Service	There is limited after-hours service availability , therefore a direct service response is indicated, informed by qualitative data regarding specific needs in the area.
Community	There is sufficient primary care capacity in the service system to meet the after-hours needs. However, consumers with high AH needs may benefit from targeted interventions to increasing their understanding of how to find appropriate services.
Community and Service	High utilisation of acute services for lower urgency care may be occurring due to limited availability of after-hours primary care services. There is indication for increasing service options available and community awareness of service options available, to support consumers to seek the appropriate care when required.
Service and System	There is low after-hours service availability and low utilisation of acute services for lower urgency care, despite high needs amongst the community. This indicates need for better communication and connection within the service system in addition to a service response.
System and Community	The community utilises acute services for lower urgency care despite sufficient primary care service capacity available. This is likely due to a lack of community awareness and / or integration between existing services.
System, Community and Service	Residents have high AH needs and are likely to present to acute services for lower urgency care due to limited after-hours primary care service availability. Therefore, there is indication for a multi-faceted intervention encompassing system, community and service responses.

Targeted intervention may be warranted for specific groups	There is sufficient service capacity in the after-hours period, low unmet demand and relatively low after-hours needs. Support to improve AH access for vulnerable population groups may be required, however this would require further evidence before a response is undertaken.

2.2 Literature Review and Jurisdictional Scan of After-hours Primary Care Service Models

Briefing – Prepared By Robyn Considine, Consan Consulting - August 2020

Key Messages

- There is evidence for nine different models of after-hours care in the literature in Australia and in comparable countries.
- The level of evidence for these models in the peer-reviewed literature was not strong with reliance on observational, quasi-experimental designs and qualitative methods
- Models including extended hours access, out-of-hours-care (OOHC) for residential aged care and GP Access reported cost savings when being compared to ED presentations and avoidable hospitalisations
- Most of these models were in operation in comparable PHNs in Australia, although often in with models tailored to local need and context
- Common factors associated with the models identified in the literature review and in the jurisdictional scan included need to ensure that care was coordinated between the patients GP and the after-hours services, and a skilled workforce.
- The key factors which determined decisions about models identified by PHNs in the jurisdictional scan, related to workforce and in particular availability, willingness and acceptability of GPs as well as acceptability of the community
- The increased use of telehealth during he global pandemic with increased community acceptability has the potential to results in increased use of telehealth in the after-hours period.

Literature Review

Aims of the literature review

The literature examined research questions related to:

- different models of care for after-hours primary-care services, and their effectiveness and efficiency
- different models of care and how they meet the needs of particular vulnerable population groups relevant to those in the HNECC PHN region
- factors associated with the implementation and sustainability of after-hours care models including for vulnerable population groups
- methods for assessing effectiveness and efficiency for different models

Literature Review Methods

A comprehensive literature search of peer-reviewed and grey literature was undertaken using keywords including after-hours care, out of hours, outside of office hours, primary healthcare, general practice, and family practice. These keywords were applied to different medical databases and also a search of the database 'OpenGrey'.

Papers and reports were included if they reported on after-hours primary care in a healthcare system considered similar to Australia and included a measure of effectiveness or efficiency of care at the patient, provider or system level. Papers and reports were excluded if they did not include a measure of effectiveness of efficiency for a model of after-hours primary care. Fifty-four articles (five reviews, 44 peer-reviewed primary data studies, and five reports) met inclusion criteria and are included in the review.

It is noted that the majority of peer-reviewed studies used observational designs with a small number using a quasi-experimental design and some also used qualitative methods. There were no studies identified which used prospective randomised controlled trials.

Different Models of Care

There were nine models of care for the after-hours period identified in the literature as described in table 20:

Table 15 Types of models of care identified in the literature

Model type	Descriptor
GP Cooperatives	Where GPs from different practices form a non-profit making organization to provide care to each other's patients after-hours, more commonly implemented in the Netherlands
Medical Deputising Services	Commercial companies that employ doctors to provide urgent, after-hours primary health care to patients at home and in aged care facilities, on behalf of the patient's regular GP most commonly implemented in Australia
Telephone advice and triage lines	Where callers phone a centralised number and speak to a nurse who provides triage, with allocation of a GP appointment based on need, implemented primarily in the United Kingdom, United States Australia.
Extended hours access	Where GPs within a practice look after their own patients outside of usual practice hours
OOHC for residential aged care	Different models of care for residents which aim to prevent avoidable hospitalisations, using nurse and GP triage to determine level of care
GP Access	A mixed model utilising phone triage service to determine the most appropriate care required, dedicated GP clinics, transport services to assist those requiring a face-to-face consultation but without the means to access it, and limited home and RACF visits implemented in Australia
Nurse practitioners	A service offered in the UK providing home visits to patients with urgent health care needs within a county on the same basis as a GP
Self-triage	A smartphone app trialed in the Netherlands to access GP-cooperatives, with further advice dependent on symptoms
Walk in clinic	One service located next to a hospital in a regional area of Australia, with care provided by a registered nurse and a GP.

Reported Effectiveness and efficiency

Indicators of effectiveness were number of patient consultations or bookings as a measure of access, avoidable hospitalisations and patient experience. Provider experience and impact on workload was used as an effectiveness measure in medical deputising studies. Patient safety outcomes were only examined in GP-co-operative models.

Efficiency indicators included cost per consultation or cost of care and cost savings compared to ED presentations. These varied across models with extended-hours access, OOHC for residential aged care and GP access reporting cost savings when being compared to ED presentations and avoidable hospitalisations.

Models for vulnerable population groups

There was little evidence to determine the effectiveness and efficiency of models of care for Aboriginal and Torres Strait Islander people or people from culturally and linguistically diverse background. Medical

deputising, triage models and virtual after-hours services including those in RACFs demonstrated effectiveness for older people using indicators such as number of bookings, avoidable ED presentations and positive experiences for GPs providing the services in a study in RACFs. There was evidence that models such as GP cooperatives resulted in reduction in paediatric ED visits for children.

Reported factors associated with the implementation and sustainability

Barriers common across different models of care included concerns about fragmentation of care, staff turnover and appropriateness of referrals. Positive patient experience was identified as an enabling factor across models. Where there was clear communication processes, responsiveness to requests, and adequate skills of team members this was an enabling factor but was also perceived as a barrier in some models where there was problems in these areas.

Jurisdictional Scan

Aims of the jurisdictional scan

The jurisdictional scan aimed to identify and describe the nature and scope of commissioned after-hours and urgent primary health care services in PHNs across Australia and the factors which are associated with the models of care.

Jurisdictional scan methods

The four PHNs that participated in the jurisdictional scan were matched to the Hunter New England Central Coast Primary Health Network against geographic, socio-demographic and workforce criteria to support comparison of models of care and context. Informed by the literature review, the jurisdictional scan included an audit of the documents describing after-hours models of care on each of the selected PHNs website and an interview with a nominated after-hours staff member from each PHN.

Different models of care being implemented

Most of the models of care identified in the literature review were evident in the selected PHNs except for GP Access and the use of the self-triage app. Many of the models in operation in the selected PHNs were a combination of those identified in the literature and were tailored to local needs. The needs assessment processes used by PHNs were key in determining local community need and in understanding the service context thus allowing the development of tailored models. These needs assessment processes also informed the acceptability of these models as they were implemented.

Most PHNs provided models which offered direct services to communities in the after-hours period. However one PHN commissioned services that reduced the demand for after-hours care and ED presentations by focusing on contributors to demand such as better management of chronic disease and falls prevention.

Factors associated with decisions about service models

Workforce, and in particular availability of GPs was a key driver of the selected models of after-hours care. Availability of GPs was determined by number of GPs in a given area and their willingness to provide care in the after-hours period. GP cooperatives were more likely in larger regional and rural areas because they required a critical mass of GPs to provide coverage on the roster. The more rural and remote areas were more likely to use medical deputising services and telephone advice and triage lines, mostly due to lack of GPs to provide coverage in the after-hours period.

The **acceptability** for local GPs was crucial when considering models of care that did not involve them in the provision of care. Models were more likely to be viewed as acceptable when there were guarantees that the local GPs would be provided a summary of their patient's consultation after accessing the after-hours service.

Community acceptability for the after-hours model of care was also a key factor in considering the type of model. Communities were more likely to find the models acceptable if they had been involved in the development stage, and if the model met their needs in an ongoing way.

Acceptability may also be a barrier to making changes to the models of care with attempts to modify models based on changing needs or on cost often being thwarted by communities and by GPs. This occurred when the community valued the model of care highly and were concerned about loss of the service. This is a significant barrier to effective commissioning which requires constant review of models of care in the context of need and efficiency.

Localised **innovation**, driven by local need and context was evident in the development of local models. These were commonly supported by technology which enhanced the capacity to deliver after-hours services in a cost-effective manner. The global pandemic has also driven innovation with increased use of telehealth enabling better access to after-hours care especially in rural communities. This has been supported by increased community acceptability of telehealth during the pandemic. Harnessing innovative models and evaluating their impact will provide new knowledge on how to provide effective, efficient and acceptable models in regional, rural and remote communities.

Effectiveness and efficiency of models

Only one PHN had undertaken an evaluation of their after-hours program with most reliant on activity as the key outcome indicator. Activity was also compared with cost to assess efficiency if this was required. None of the four PHNs explicitly collected patient or provider experience measures and only one PHN had a measure related to quality. PHNs were also considering the resources required to manage the commissioned services with significant variation reported in the amount of time required by PHN staff to manage and support contracts.

The lack of evaluation and consistency in measuring and reporting outcomes provides an opportunity for collaboration across PHNs and across models of care.

2.3 Service Domain Considerations

This section summarises the considerations for future service planning discussed during stakeholder consultations.

Overarching themes regarding considerations for future service planning included:

- No one service model or strategy is viable for such a large and diverse region
- There was general agreement that there is no 'simple fix' to improve access to after-hours care – many of the systemic barriers will conspire against possible service models, especially workforce shortages in in the regional, remote and rural parts of the region.
- Irrespective of the type of after-hours care model, it was seen as vital that service providers have a sound understanding of the social and geographical characteristics of local communities and the local service network. In the consultations, examples were cited of telephone-based services demonstrating a lack of knowledge of the geography and availability of services, especially in rural and remote areas.
- There was consensus from stakeholders that after-hours services need to connect with the patients' existing GPs and service network to promote continuity of care and this includes protocols for transfer of care back to patients' regular GPs.
- The GPs that were consulted, along with many other stakeholders, asserted that GP involvement in after-hours primary care services will only be viable if there is a sufficient financial return.

In the AH GP survey, respondents (n=59) were asked to identify the top 6 most important features for after-hours primary care service delivery. The most important features identified by GP respondents included:

1. Written handover to regular GP within 24 hours (identified by 85% of respondents)
2. Phone triaging (73%)
3. Access to face to face appointments (68%)
4. Delivery by local clinicians (68%)
5. Delivery by vocationally registered GPs (63%)
6. Access to telehealth (58%)

The least important after-hours service features according to GP respondents:

1. Web-based booking system (only identified by 5% of respondents)
2. Other features (5%)
3. Adjunct pathology service (20%)

Telehealth Services

The consultations considered the possible use of telehealth in improving access to after-hours care, especially in light of the rapid uptake of telehealth services in response to the COVID-19 pandemic. The general consensus was that telehealth has an important ongoing role to play in after-hours care and was seen as beneficial for vulnerable populations, including Aboriginal and/ or Torres Strait Islander communities, young people, and those living remotely, because it enables access to medical care without leaving home. Indeed, stakeholders concluded that telehealth would increasingly become a standard part of after-hours care, and healthcare in general.

Key results from a COVID-19 Impact Survey conducted by HNECC PHN in 2020, which received 300 responses (including 204 General Practices) support this feedback. Findings were follows:

- >95% of respondents and 100% of practices reported currently using some form of telehealth
- Approximately half of practices reported using telehealth for 50-100% of their scheduled appointments
- 97% of respondents were in favour of continuation to the temporary MBS telehealth items.
- Uptake amongst Aboriginal Medical Services in the HNECC PHN region has been high with 100% utilising telehealth and 78% utilising it for more than 50% of their consultations.

In response to the COVID-19 pandemic the GPAAH and Central Coast After-hours Clinics have adopted telehealth into the service model. The primary reason for delivery of appointments via telehealth in both services was that the patient was presenting with respiratory symptoms. Prior to the COVID-19 pandemic the ACE after-hours and STAH programs were already delivered via telehealth and have continued to do so during this period.

Critically, stakeholders emphasised that telehealth could not replace all face-to-face consultations, such as when physical examinations are required. As such they advocated for telehealth to form part of an integrated set of services, not as a separate or add-on element. That is, there was little support for a service which was delivered exclusively via telehealth without access to face-to-face care if required. Indeed, a number of stakeholders were extremely critical of 'pop-up' telehealth providers that were seen to be motivated by commercial gains and did not have the clinical governance systems to assure patient quality and safety. An example of how telehealth could be integrated into a service model was proposed for a collaborative GP model. A telehealth consultation could be but one of the 'destinations' from the telephone triage process, as has occurred during the pandemic crisis. Additional benefits for integration of telehealth with pharmacy services were identified with the rollout of e-prescribing.

Other issues that were raised about the wider adoption of telehealth in after-hours care provision, or healthcare more broadly, were

- poor bandwidth, particularly in rural and remote communities
- low levels of digital literacy and/or limited access to devices for some community members, especially eldery people and those experiencing financial disadvantage
- consumer and cultural preferences for face-to-face consultations amongst some groups

GP Cooperative led After-hours Clinics

GPs consulted from regional centres including Armidale and Tamworth, indicated some in principle interest in examining the feasibility of a collaborative GP model, involving other local practices. Inclusion of a telephone-based service with nursing staff and evidence-based algorithms could provide a triage to on-call GPs in such a service.
Some key factors the GPs identified in considering the viability of such an arrangement would be:

- whether sufficient practices would participate so that there are enough GPs involved that are willing to share on-call rosters
- whether there was sufficient financial return for each of the GPs/practices
- the mechanisms by which patients be handed back to their general practice.

Phone Based Triage to Support On-Call GPs

Possible options for supporting on call GPs with phone based triaging was considered by stakeholders. This is been done by a large practice on the mid-North Coast which has contracted the GPAAH to provide its nurse triage as an entry point to after-hours services provided by GPs employed in the practice.

A key stakeholder from the service stated that the introduction of the phone-based triage has reduced the number of 'frivolous' calls that had previously gone to the on-call GP and therefore contributed to the efficiency of the service in that community. Interestingly, access to the service is open to the broader community and not just to patients of the practice. PIP funds are directed to funding the practice's GPAAH telephone triage service.

After-hours Services for Residents of Aged Care Facilities

Two potential models were discussed during the consultations for improving access to after-hours care and reducing unnecessary presentations to emergency departments for residents of aged care facilities.

Firstly, the ACE service, an HNECC PHN-commissioned program, was seen to have a number of intrinsic strengths:

- it is premised on a workforce development strategy that aims to improve the clinical skills of staff in RACFs to manage the primary care needs of their residents in the after-hours period
- it incorporates an algorithm and telephone-based support to RACF staff
- it has documented escalation protocols.

Indeed, during the focus group consultations, some management representatives of aged care facilities expressed interest in the service and have initiated subsequent discussions in exploring the potential for it to be adopted at their centre. There was also interest in adapting and localising the ACE resources and manual for use in other parts of the HNECC PHN region.

A second model, which is not strictly an after-hours model, involved a large practice establishing weekly clinics at local aged care facilities, where residents could make appointments with the rostered GP. Introduction of the clinics was seem to have reduced the need for after-hours consultations and, possibly, hospital transfers, while also enhancing the skills of the local workforce.

The stakeholders also saw the potential for increased use of telehealth consultations for residents of aged care facilities, following the recent surge in the use of telehealth prompted by the COVID pandemic. As noted in the general comments about telehealth provision above, such a model would need to be integrated with existing service arrangements, such as a GP collaborative, rather than operating independently as a stand-alone service.

After-hours Mental Health Services

Given the relatively high use of telehealth services by mental health professionals even prior to COVID, the potential use of telehealth services for people with mental health issues was seen as a potential model for further exploration, noting that clients are often just in need of initial support and reassurance from a mental health professional until they care reach care in the in-hours period. That is, it was suggested that people could be referred to a telehealth consultation with a mental health professional after-hours as a way of avoiding presentations to emergency departments. While this model has some appeal in principle, a number of issues were raised:

- what the mechanism would be for the referral to the telehealth consultation
- how the telehealth consultation would fit into clients' existing service network, including GPs and community mental health services.

In addition, stakeholders expressed concern that a centralised telehealth mental health crisis service would suffer from a problem that is commonly plagued other centralised telephone-based services – delays in being able to get phone calls answered. In that context, a number of focus groups questioned whether such a service would add much value to the well-known Lifeline service which was seen to provide high quality telephone-based mental health service across the state.

Stakeholder Perspectives On Other Service Models

Healthdirect Nurse Helpline and After-hours GP Helpline

Healthdirect is a helpline operating across a number of jurisdictions in Australia, including NSW. The helpline is staffed by registered nurses who provide advice on whether to access a GP, manage the condition at home or attend an emergency department. While some stakeholders saw Healthdirect as providing an important
after-hours service, a number of concerns were raised:

- as a centralised service, Healthdirect was seen as not having the necessary understanding of the circumstances and service networks in local communities, particularly rural communities
- for example, patients were known to be regularly advised by the service to immediately visit their local GP in the absence of knowledge of the availability of GPs, distances involved and whether in fact AH
  services were even available
- the algorithms used by the service were seen by some as highly risk averse and patients were not uncommonly referred to ED when not warranted by their individual needs.

Commercial Home Visiting Doctor Services

The doctor to door model was, in general, poorly regarded by stakeholders in our consultations. Concerns were expressed about the lack of clinical governance and variable quality of care provided. GPs commented that the doctors staffing these services were usually non-vocationally registered, not from the local area and were seen to be high referrers to emergency departments. Furthermore these services were seen to function as stand-alone entities with little connection to patients' GPs and the local service network.

2.4 System Integration Domain Considerations

Opportunities to improve system integration of after-hours services was a key topic of discussion during focus groups with representatives from Hunter New England and Central Coast Local Health Districts.

Suggested areas for improvement included:

- Strengthening and steamlining referral processes between acute care and primary care services:

  Opportunities to improve this process included decreasing administrative burden required for emergency department triage nurses to refer patients from acute services to primary care services during times of peak demand and greater flexibility in the length of appointments and surge capacity in after-hours commissioned services. Furthermore, a GP in Taree indicated that a robust yet streamlined referral process from acute to primary care would be a key enabler to establishing an after-hours clinic in that region.

- Improving communication between Emergency Departments and After-hours GP services regarding patients who are 'frequent presenters'.
- Building capacity of primary care clinicians to provide a wider range of urgent care services, e.g. procedural skills including suturing and casting.
-

2.5 Community Domain Considerations

Community Awareness Campaign

Stakeholders consultations with community members, providers, and Local Health District representatives identified strong support for a community awareness campaign with clear and simple messaging regarding where to access appropriate care after-hours and how to determine what is available. Recommendations provided by the community was having a single phone number and source of information, to reduce the current confusion and mixed messaging that exists. Despite the National Healthdirect Nurse Helpline offering such a service nationally, consultation with HNECC PHN's Community Advisory Committees showed limited awareness within the community.

Preventative Health Strategies

Another consideration raised during the stakeholder consultations was the role of targeted preventative health care intiatives to address poorer health outcomes in lower socioeconomic groups and vulnerable population groups (such as Aboriginal and Torres Strait Islanders, people with intellectual disabilities and people experiencing mental ill health). It was recommended that strategies could improve the overall health outcomes of these population groups and have lower term improvements of usage and unmet demand for after-hours services.

3. Priorities for Future Planning

This chapter details a prioritisation report completed by Nous Group Consulting on behalf of HNECC PHN.

3.1 Introduction To The Prioritisation Workshops

The Hunter New England and Central Coast Primary Health Network (HNECCPHN) engaged Nous Group (Nous) to facilitate prioritisation workshops as part of the Needs Assessment for After Hours (AH) programs.

The prioritisation workshops were the final stage of the Needs Assessment process, and built on the three previous stages of work, including: a quantitative analysis and the creation of index scores, a literature review and jurisdictional scan, and stakeholder consultation.

The two workshops were held with members of the Central Coast and Hunter New England regions respectively. A list of attendees can be found in Appendix 1.

The purpose of this chapter is to summarise the insights and key discussion points in both workshops, including the priorities for AH programs and their implementation considerations.

3.2 Key Points Of Discussion

This section summarises the key issues discussed within the two workshops.

Hunter New England Workshop

Participants suggested that more information and increased specificity is required regarding the needs of patients, or the 'what'. This includes additional information on the severity of cases presenting each ED site, the demographics of people who are presenting at each, etc. The patient population within HNE is very diverse and varies by geography.

Important gaps in the provision of AH care were identified

- *Workforce limitations:* Participants in both the Central Coast and Hunter region workshops identified that there is an insufficient supply of GPs. There is also an insufficient level of workforce capability to address difficult behaviours, such as those associated with disabled people, and other vulnerable populations
- *District service information has not been collated*: Participants identified that the Healthdirect algorithm does not cover all GP clinics, diagnostics, and AH services across the HNECCPHN, nor does it allow for referrals and bookings. An algorithm using comprehensively collated district information would enable one provider to triage AH calls effectively, providing a streamlined patient experience.

Models of care were discussed and recommended

Participants identified and discussed the below models of care, and components of models of care. These were later prioritised using a Feasibility/Impact matrix.

- **Phone triage**: A triage service was noted to potentially incentivise other GPs/ GP practices to offer AH care, by removing the need to organise their own triage service.
- **Primary virtual care:** This model would provide care to any location in the region. It would be video-enabled and integrated with a phone triage service. This model contains the most elements that are entirely 'new' and would therefore draw higher costs and reduce the model's feasibility.
- **ACE-type model for vulnerable groups**: Like the Aged Care Emergency Service (ACE), this model would provide phone-based clinical support to staff in enrolled services, but would be targeted at other vulnerable groups, such as people with a disability, people with poor mental health and Indigenous populations.
- **On call and/or rostered urgent care**: An urgent care model was also discussed, with options for staff to be either on call or rostered. On call was noted to have slightly less impact than rostered care. Elements of this model could work like the STAH program but in a standardised way, providing broader geographic coverage and leveraging a larger cohort of doctors than present. This could also be triaged to GPAAH.
- **AH pharmacy, imaging, and pathology**: Other AH would be enabled via additional funding, or the co-location of facilities.

Central Coast Workshop

Important gaps in the provision of AH care were identified

- *Vulnerable populations could better utilise AH services*:
    - The relatively low use of AH services among Indigenous populations was attributed to patients feeling uncertain about the AH experience, including who they would see. This

concern results in patients either waiting until the next day or presenting at the ED, as both alternatives provide more certainty.

    - Participants noted that elderly, culturally and linguistically diverse (CALD) and disabled populations required additional consideration, though this was not explored in the workshop.

- *Mental health programs are underway and may impact AH delivery*: Participants noted that mental health programs are currently being considered by NSW Health. This work is in progress but when implemented, it may impact the work of the PHN.
- *Access to pharmaceuticals and other services can be increased*: The Bridges AH Clinic was noted to have limited pharmaceutical stock. The price differential between samples and full dosages was identified as minimal. Participants emphasised that additional AH pharmacies across the region and/or increasing the stock available at AH facilities would be greatly beneficial for patients, particularly parents of young children.
- *Increased awareness and understanding of AH programs would be beneficial for optimal use of the services*: Training staff in aged care centres when to call relevant services was recommended. It was noted that the ambulance is often unnecessarily called to minimise the perceived risk of error.
- *Workforce limitations*: Participants highlighted the need to improve the attractiveness of General Practice work in the region, particularly, AH work. The general insufficient supply of GPs in the region continues to be an issue and contributes to the lack of AH GPs. It was also noted that the Bridges AH Clinic in Erina has limited security, which is a deterrent for GPs.

Models of care were discussed and recommended

The below models of care were discussed as options for development tin the Central Coast region. They are not mutually exclusive, and some exist as components. These were later prioritised using a Feasibility/Impact matrix.

- Call centre with a GP and nurse: The model would include a telehealth service to assess and triage patients. This model could be outsourced to other GPs for use of the triaging capabilities. This would cover the entirety of the HNECCPHN region, and therefore require access to all available bookings at GP practices. Digital prescriptions from AH pharmacies would also be enabled.
- Call centre with a nurse only: This model would assess and triage patients like the model above, without a GP rostered.
- Aged Care Response: The expansion of current models into the Central Coast Region and addition of different models were discussed. The ACE model includes phone-only access to care outside of the Central Coast1 and would be beneficial if expanded into the region. Additional services where a nurse visits the sites if required could be enabled. The video capability of the Belmont model was noted as beneficial. Stronger linkages with other GPs and geriatrics was also noted to be beneficial.
- Current walk in clinic: Participants noted that this model is more feasible but less impactful than urgent care centres, due to the smaller scope of services provided. Participants noted that the Erina clinic is somewhat isolated, and not linked to other services. The potential to relocate the service to Gosford Hospital for a co-located urgent care clinic was highlighted.
- GP-led urgent care centres: This model would be co-located to allow for diagnostics and be run by GPs. While the model was discussed in the workshop, it was not prioritised. The model would require testing and depend on the locations available and funding model.

- **Virtual care**: This was noted to be limited in feasibility, but very important for future service delivery. Virtual care could cover the entire HNECCPHN region.

3.3 Prioritisation And Synergies

Potential Synergies Identified Between the Current AH Programs

During the workshop, participants identified that that some components could be shared between different models for efficiency. These included:

- **Call centre:** A call centre triaging patient enquiries could be used across the ACE, GPAAH and STAH models. While a single provider could cover the entire HNECCPHN region, multiple providers may be preferred, for reasons summarised below.

	Potential benefits	Potential disadvantages
Single provider	• Removes the redundancy in FTE and infrastructure • Gives a single entity full transparency of the region's data, potentially allowing for better coordination of services	• Placing all control of AH triaging into one provider increases risk and the likelihood that quality-related issues will impact a greater number of patients • The ability to alter an approach will be increasingly difficult if 'locked in' to one provider
Multiple (2 or 3) providers	• Risk is dispersed across multiple providers • Providers can potentially gain greater understanding of the nuanced needs of regions	• Potentially more expensive, due to duplication in resources and infrastructure

- **Nurse assessment and GP assessment:** A nurse or GP assessment via teleconference or video could also be used in across the ACE, GPAAH and STAH models, as well as ACE-type models for other vulnerable groups. While nurse assessment alone may be slightly more cost effective, GP assessment may provide more holistic care. A combination of both is likely to be a cost-effective approach.

  While teleconference is well established, video models could also be effective. However, barriers such as privacy concerns, available bandwidth (particularly in regional areas), patient comfort with technology, and internet reliability must also be considered when using video, and therefore should not be heavily relied upon.

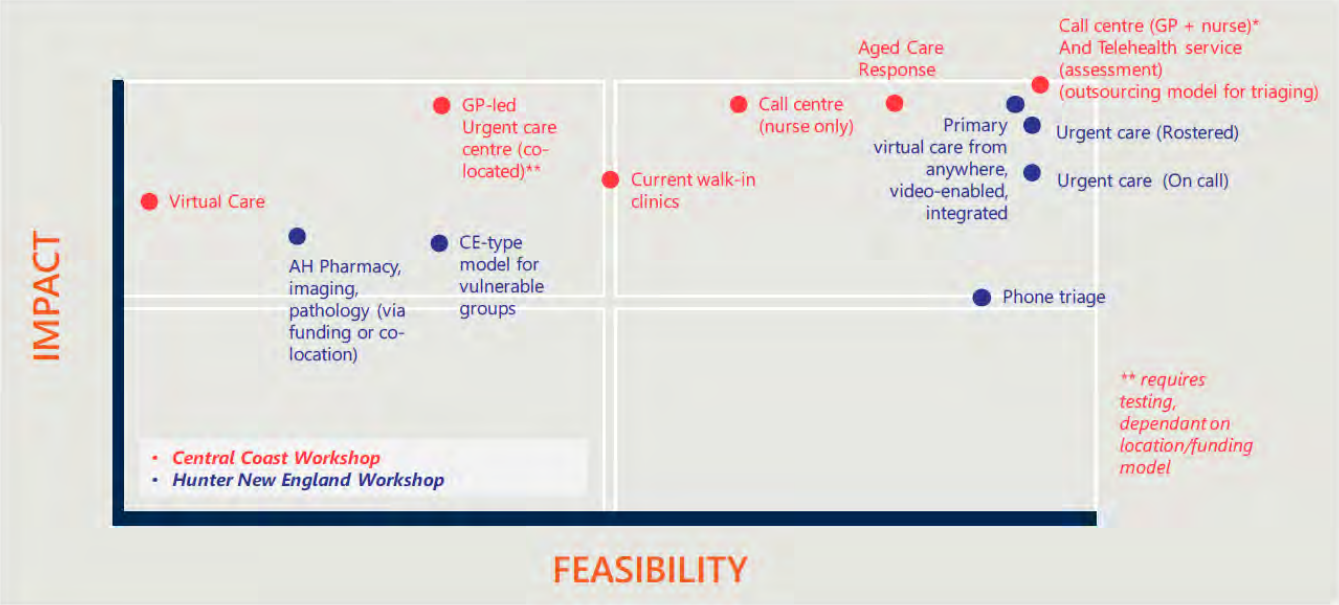
- **Virtual care:** A model which involves teleconference and video assessment, along with remote monitoring devices could also be used across the ACE, GPAAH and STAH models, as well as any ACE-type models for other vulnerable groups. The model could also embed call centres and be integrated with NSW Ambulance services.

Similar programs were prioritised by both the Central Coast and Hunter region workshop groups

The following programs were prioritised as high impact and high feasibility during the workshop:

- Call Centre – GP and Nurse (including telehealth) CC
- Primary virtual care from anywhere, video enabled HNE
- Urgent care (rostered) HNE
- Urgent care (on-call) HNE
- Call centre - Nurse only CC
- Aged Care Response CC

The entire matrix for each workshop is displayed below.



3.4 Implementation Considerations

These suggested models of care, and components, require additional information to be designed to meet the needs of different geographic regions and different populations, including to which synergies are appropriate. Additional areas of research include:

- The reasons patients are presenting at each ED. This will inform the emphasis on types of services in that geographic region, as well as the appropriate sites to use.
- The reasons particular population groups are presenting at each ED. This will inform the emphasis on the types of services prioritised.
- Whether additional funding is available from other sources (other than After Hours program). This will inform the scope of change.

Other areas of consideration for implementation include:

- Increasing **awareness** of the AH services among the general population, GPs, other care providers (such as aged care). It was identified that not all patients are aware of what is available.
- Increasing the **capability** of some providers to identify which situations are appropriate to use AH care, such as through training. It was identified that the ambulance is the default option in some aged care centres.

Appendix 1: Consultation Participants

Individual Interviews

- Ms Anne Curtis, Business & Practice Manager from the Forster Tuncurry Medical Centre
- Dr Dawn Choi, GP in Newcastle, working for Providence Belmont and GPAAH
- Dr David Lockart, GP in Tamworth at Barton lane Practice, Medical Educator with GP Synergy and HNECC PHN New England Rural Clinical Council Member
- Dr Elly Warren, GP in the Central Coast, Yerin Aboriginal Medical Services, and HNECC PHN Central Coast Clinical Council Member
- Dr Fiona van Leeuwen, GP in Newcastle at Hamilton Doctors, and Chair of the HNECC PHN Hunter Clinical Council
- Dr Maree Puxty, GP in West Armidale at West Armidale Medical Centre, Hospital VMO at Armidale Hospital and Armidale Private Hospital, Adjunct Associate Professor at the University of New England, and Chair of the HNECC PHN New England Rural Clinical Council
- Dr Phil Rayson, GP at Wingham Family Health Clinic (interview completed by HNECC PHN staff)
- Dr Ziad Basyouny, GP at Centre Medical – Taree (interview completed by HNECC PHN staff)

Clinicians Focus Group, 30th June, 6-8pm

- Dr Abe Matthew – GP at Singleton Heights Medical Practice and Singleton Hospital, HNECC PHN Hunter Metro Clinical Council Member
- Dr Cheryl McIntyre - GP at Inverell Medical Centre, VMO at Inverell Hospital
- Dr Miriam Grotowski - GP at Smith Street Practice, University of Newcastle Senior Lecturer, Chair of North West Health Professionals
- Dr Natalie Cordowiner – GP at Your Family Doctors and Bridges After-Hours Clinics, HNECC PHN Central Coast Clinical Council Member
- Dr Paul Innes – GP at Branxton Medical Centre and GPAAH
- Dr Peter Hopkins – GP in the GPAAH clinics, Current Board Member of Hunter Primary Care
- Edwina Sharrock – Midwife and CEO of Birthbeat, HNECC PHN New England Rural Clinical Council Member
- Jackie Cobbold – Mental Health Nurse Practitioner at University of Newcastle, HNECC PHN Central Coast Clinical Council Member

Hunter New England LHD Focus Group, 1st July, 2-4pm

- Aimee Smith - Aboriginal Performance Management
- Clare Daley – Manager, Allied Health Services (and Disability Action Plan lead)
- Dr Mark Lee - Senior Staff Specialist in Emergency and Paediatrics & Director of Emergency at Lake Macquarie Private Hospital
- Dr Mark Miller - ED Physician, Maitland
- Dr Paul Craven - Executive Director, Children, Young People and Families
- Dr Peter Findlayson – Director, Medical Services
- Dr Scott Flannagan - Emergency Dept Physician, Maitland and Cessnock
- Jane Gray - Executive Director, Partnerships, Innovation and Research
- Jen Fishpool (on behalf of Jodi Nieass) – Manning Hospital
- Johnathan Holt - Acting General Manager, Mental Health
- Karen Harrison – Manager, Integrated Care
- Karen Kelly - Executive Director, Greater Metropolitan Health Services
- Nicole Feenan - Acting Service Manager, Critical Care Services John Hunter Hospital
- Nicole Taylor - Manager, Activity and Performance Unit
- Roslyn Barker - CNC Aged Care Emergency Service

- Susan Heyman - Exec Director Rural and Regional Health Services
- Tony Gilbertson – Manager, Health Service Tenterfield

Barwon Health Alliance (BHA) Focus Group, 1st July, 6-8pm

- Dr Nick Boyd – GP, Committee Member of BHA
- Dr Grahame Deane – GP, Committee Member of BHA, HNECC PHN Board Member
- Dr Louise Fisher – GP, Treasurer of BHA
- Dr Kerry Moroney – GP, Vice Chair of BHA
- Kate Perrett - Small Towns After Hours Program Manager at HealthWISE (current AH service provider)

Community and providers Focus Group, 8th July, 10-12pm

- Melinda Dempsey (3 staff from a residential aged care facility on the call) - Director of Nursing at Peninsular Village (Residential Aged Care Facility)
- Keith Drinkwater - Primary Care Executive at Hunter Primary Care (current AH service provider of GPAAH and ACE programs)
- Geoff Forrester - HNECC PHN Community Advisory Committee Member
- Zona Gabriel – Central Coast Primary Care, Programs Manager
- Keli McDonald - HNECC Community Advisory Committee Member
- Kate Perrett - Small Towns After Hours Program Manager at HealthWISE (current AH service provider)
- David Series - HNECC PHN Community Advisory Committee Member

Central Coast LHD Focus Group, 14th July, 2-4pm

- Farran Akins – Manager, Patient Flow and Capacity
- Alan Davidson –Change Manager, Clinical Operations
- Oliver Higgins – Mental Health Manager Population, Data and Outcome Measures
- Gillian Isaac – Director, Community Chronic & Complex Care
- Dr Peter Lewis – Director, Public Health
- Kate Lyons - Executive Director, Operations
- Lani McGrath - Mental Health Manager, Community Development and Partnerships
- Kym Scanlon – Manager, Health Planning
- Rachel Sheather-Reid –Central Coast Mental Health Translational Research Manager
- Maya Smitran – Director, Healthcare Improvement
- Fiona Wilkinson – Director, Quality Strategy & Innovation
- Dr Kate Porges – District Director Emergency Services

HNECC PHN Observers: Mitchell Cootes (Team Leader - Primary Care Commissioning), Catherine Eggett (Commissioning Coordinator- After-Hours Primary Care), Amanda Martin (Acting Executive Manager for Commissioning), Catherine Turner (Executive Manager)

Central Coast Prioritisation Workshop, 2nd September, 1-4pm

- Amanda Martin HNECC PHN
- Catherine Eggett HNECC PHN
- Catherine Turner HNECC PHN
- Fiona Wilkinson CC LHD
- Karen Douglas General Practitioner
- Katherine Todd CC LHD
- Mitchell Cootes HNECC PHN
- Richard Nankervis HNECC PHN

Hunter New England Prioritisation Workshop, 2nd September, 9am-12pm

- Amanda Martin HNECC PHN
- Catherine Eggett HNECC PHN
- Catherine Turner HNECC PHN
- David Lockart General Practitioner
- Jane Gray HNE LHD
- Karen Kelly HNE LHD
- Mitchell Cootes HNECC PHN
- Richard Nankervis HNECC PHN
- Susan Heyman HNE LHD

Appendix 2: Quantitative AH Needs Assessment

Prepared by HNECC PHN's Health Intelligence and Performance Team, August 2020

Introduction

This report presents the results of quantitative data analysis conducted on After Hours (AH) needs in the Hunter New England Central Coast Primary Health Network (HNECCPHN). We would like to acknowledge that the indexing approach originated from the Composite Index Score created for the purpose of North Western Melbourne PHN's After Hours Gap Analysis and Recommendations Report produced by Impact Co.[8]. It involves the development of an index score to better understand and quantify the AH primary health care needs of residents of the HNECC PHN region.

The Composite Index Score quantifies the relative need for AH primary care services across the catchment, allowing LGAs to be ranked in order from most to least need as well as the proportion of need. Three sub-indices were combined to calculate a Composite Index Score to rank all LGAs in the HNECC PHN region. The sub-indices are: AH Health Need Index, Unmet AH Demand Index and Service Availability Index. The highest Composite Index Scores reflect the areas with the greatest need and poorest service availability.

The key results of the quantitative analysis are shown below. Note that the the Composite Index Score for each LGA is expressed as a percentage rather than a raw score (as derived from the calculation) for easier comprehension. A high Composite Index Score indicates high need combined with high unmet demand and low service availability. The LGAs with the highest need, unmet demand and low service availability are Walcha, followed by Gwydir then Glen Innes Severn.

Table 16: Index Results by LGA

Composite Index Rank	LGA	COMPOSITE INDEX	AH Need index	AH Service Availability Index	AH Unmet Demand Index
1	Walcha (A)	12.17	2.75	1.00	3.60
2	Gwydir (A)	10.89	3.41	1.00	2.27
3	Glen Innes Severn (A)	5.42	3.49	2.53	4.45
4	Gunnedah (A)	5.32	3.95	2.79	4.67
5	Inverell (A)	5.28	4.25	2.82	4.40
6	Uralla (A)	4.86	3.23	2.28	3.19
7	Moree Plains (A)	4.79	4.78	3.23	4.20
8	Mid-Coast (A)	4.44	4.65	3.81	5.16
9	Port Stephens (A)	4.17	4.51	3.72	4.49
10	Upper Hunter Shire (A)	3.99	3.91	3.74	4.74
11	Armidale Regional (A)	3.89	5.76	5.56	6.79
12	Cessnock (C)	3.68	5.19	4.51	4.43
13	Muswellbrook (A)	3.67	4.12	4.41	5.27
14	Dungog (A)	3.64	3.56	3.53	3.90
15	Maitland (C)	3.51	5.01	4.80	4.77
16	Singleton (A)	3.19	3.85	4.17	3.84
17	Central Coast (C) (NSW)	3.05	6.51	6.29	4.63
18	Tamworth Regional (A)	3.03	4.88	6.11	5.84
19	Narrabri (A)	2.69	3.77	5.04	4.08
20	Lake Macquarie (C)	2.42	5.11	6.57	4.09

[8] North Western Melbourne PHN After-hours Primary Health Care: Gap Analysis and Recommendations (2018) Impact Co (Available at: https://nwmphn.org.au/wp-content/uploads/2019/03/181219-NWMPHN-After-Hours-Gap-Analysis-Final-Report-FINAL.pdf)

21	Liverpool Plains (A)	2.33	3.35	5.11	3.55
22	Tenterfield (A) - part a	2.19	3.54	5.32	3.22
23	Newcastle (C)	1.37	6.42	13.66	4.43

Note that the the Composite Index Score for each LGA is expressed as a percentage rather than a raw score (as derived from the calculation) for easier comprehension.

The remainder of the report is structured as follows:

Chapter 1 – Drivers of demand for AH services

Chapter 2 - Unmet demand for AH services

Chapter 3 – Availability of AH services

Chapter 4 – A Composite Index Score for AH need

1. Drivers of demand for AH services

This section discusses key demographic drivers of demand for AH services which are used to develop the AH Health Need Index. These drivers are informed by the literature[9] and include:

- Population size and annual growth
- Child population (0-4 years)
- Older person's population (>65 years)
- Population with fair/poor self-assessed health status
- Socioeconomic disadvantage
- Population experiencing mental illness
- Homeless population
- Aboriginal and/or Torres Strait Islander population
- Culturally and Linguistically Diverse population
- Population with multiple chronic conditions.

HNECC PHN Region Population

The HNECC region is a large and diverse geographic area. It incorporates 23 Local Government Areas (LGAs), which are a mix of metropolitan, regional and remote areas. HNECC is the second largest PHN in New South Wales, covering 133,812 km^2. It reaches from just north of Sydney, across the north west of NSW, to the Queensland border. The HNECC region is serviced by Hunter New England LHD and Central Coast LHD.

In 2018, the Estimated Residential Population (ERP) of the HNECC region was 1,269,222. Table 22 shows the population of each LGA in descending order.

Table 17: ERP by LGA, HNECC PHN, 2018

LGA	ERP 2018	%
Central Coast (C)	342,047	26.9%
Lake Macquarie (C)	204,914	16.1%
Newcastle (C)	164,104	12.9%
Mid-Coast (A)	93,288	7.4%
Maitland (C)	83,203	6.6%
Port Stephens (A)	72,695	5.7%
Tamworth Regional (A)	62,156	4.9%

[9] North Western Melbourne PHN After-hours Primary Health Care: Gap Analysis and Recommendations (2018) Impact Co (Available at: https://nwmphn.org.au/wp-content/uploads/2019/03/181219-NWMPHN-After-Hours-Gap-Analysis-Final-Report-FINAL.pdf)

LGA	ERP 2018	%
Cessnock (C)	59,101	4.7%
Armidale Regional (A)	30,707	2.4%
Singleton (A)	23,422	1.8%
Inverell (A)	16,844	1.3%
Muswellbrook (A)	16,383	1.3%
Upper Hunter Shire (A)	14,220	1.1%
Moree Plains (A)	13,350	1.1%
Narrabri (A)	13,231	1.0%
Gunnedah (A)	12,661	1.0%
Dungog (A)	9,346	0.7%
Glen Innes Severn (A)	8,908	0.7%
Liverpool Plains (A)	7,893	0.6%
Tenterfield (A) - part a	6,206	0.5%
Uralla (A)	6,062	0.5%
Gwydir (A)	5,349	0.4%
Walcha (A)	3,132	0.2%
HNECC PHN	**1,269,222**	**100.0%**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

Child Population

Children aged 0-4 years old represent 6.2% of the total HNECC PHN population (NSW 6.3%). Table 23 shows the proportion of children aged 0-4 years old by LGA, in descending order. Moree Plains LGA has the highest proportion of children aged 0-4 years of age (8.0%) and Tenterfield has the lowest proportion of children aged 0-4 years of age (4.5%).

Table 18: Number and proportion of children aged 0-4 years old by LGA, 2018 ERP

LGA	Number of 0-4-year olds	% of population aged 0-4 years old
Moree Plains (A)	1,065	8.0
Muswellbrook (A)	1,267	7.7
Gunnedah (A)	942	7.4
Maitland (C)	6,119	7.4
Narrabri (A)	970	7.3
Cessnock (C)	4,206	7.1
Singleton (A)	1,622	6.9
Tamworth Regional (A)	4,103	6.6
Gwydir (A)	350	6.5
Inverell (A)	1,071	6.4
Lake Macquarie (C)	12,916	6.3
Central Coast (C) (NSW)	20,887	6.1
Liverpool Plains (A)	477	6.0
Upper Hunter Shire (A)	845	5.9
Newcastle (C)	9,641	5.9
Armidale Regional (A)	1,802	5.9
Walcha (A)	180	5.7
Dungog (A)	525	5.6
Port Stephens (A)	4,001	5.5
Glen Innes Severn (A)	450	5.1
Uralla (A)	303	5.0

LGA	Number of 0-4-year olds	% of population aged 0-4 years old
Mid-Coast (A)	4,365	4.7
Tenterfield (A) - part a	280	4.5
HNECC PHN	**78,442**	**6.2**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

Population of People Aged 65 Years and Over

People aged 65 years and over represent 20% of the total HNECC PHN population (NSW 16.1%). Table 24 shows the proportion of people aged 65 years and over by LGA, in descending order. Mid-Coast LGA has the highest proportion of people aged 65 years of age (30%) and Muswellbrook LGA has the lowest proportion of people aged 65 years of age (13%).

Table 19: Number and proportion of people aged 65 years and over by LGA, 2018 ERP

LGA	Number of people aged 65 years and over	% of population aged 65 years and over
Mid-Coast (A)	28,328	30%
Tenterfield (A) - part a	1,769	29%
Walcha (A)	819	26%
Glen Innes Severn (A)	2,286	26%
Gwydir (A)	1,353	25%
Port Stephens (A)	16,956	23%
Liverpool Plains (A)	1,770	22%
Uralla (A)	1,257	21%
Inverell (A)	3,480	21%
Central Coast (C) (NSW)	70,041	20%
Lake Macquarie (C)	41,601	20%
Dungog (A)	1,883	20%
Upper Hunter Shire (A)	2,626	18%
Tamworth Regional (A)	11,456	18%
Gunnedah (A)	2,273	18%
Narrabri (A)	2,323	18%
Armidale Regional (A)	5,146	17%
Cessnock (C)	9,429	16%
Newcastle (C)	24,963	15%
Moree Plains (A)	2,000	15%
Maitland (C)	11,858	14%
Singleton (A)	3,134	13%
Muswellbrook (A)	2,143	13%
HNECC PHN	**248,894**	**20%**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published 2020: January 2020

Aboriginal and Torres Strait Islander Population

In 2016, there were 79,405 people who identified as Aboriginal and/or Torres Strait Islander people in the HNECC PHN region, representing 6.4% of the total population (NSW 3.4%).

Table 25 shows the total number and proportion of people who identify as Aboriginal and/or Torres Strait Islander by LGA in descending order. Moree Plains LGA has the highest proportion of people identifying as Aboriginal and/or Torres Strait Islander (26.6%) and Newcastle LGA has the lowest proportion (4.1%).

Table 20: Proportion of all residents who identify as Aboriginal and/or Torres Strait Islander by LGA, ERP 2016

LGA	Aboriginal people	Total population	Aboriginal population as proportion of total population (%)
Moree Plains (A)	3,631	13,627	26.6
Gunnedah (A)	1,911	12,491	15.3
Liverpool Plains (A)	1,190	7,847	15.2
Narrabri (A)	2,026	13,367	15.2
Tamworth Regional (A)	7,464	60,990	12.2
Inverell (A)	1,738	16,812	10.3
Muswellbrook (A)	1,633	16,462	9.9
Armidale Regional (A)	2,726	30,313	9.0
Cessnock (C)	4,871	56,720	8.6
Uralla (A)	504	6,147	8.2
Glen Innes Severn (A)	667	8,934	7.5
Mid-Coast (A)	6,834	91,801	7.4
Tenterfield (A) - part a	455	6,261	7.3
Gwydir (A)	382	5,326	7.2
Walcha (A)	224	3,130	7.2
Singleton (A)	1,596	23,576	6.8
Upper Hunter Shire (A)	901	14,344	6.3
Maitland (C)	4,909	79,063	6.2
Dungog (A)	548	9,101	6.0
Port Stephens (A)	4,068	71,115	5.7
Lake Macquarie (C)	9,515	202,332	4.7
Central Coast (C) (NSW)	15,371	336,611	4.6
Newcastle (C)	6,554	160,707	4.1
HNECC PHN	**79,405**	**1,247,455**	**6.4**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published 2020: January 2020

Projected Population Growth

NSW Planning projects that between 2021 and 2041, the population of the HNECC PHN region will have increased to 1,485,960, representing annual population growth of 0.7% (NSW 1.5%).

Table 26 shows the rate of total projected population growth from 2021 to 2041 by LGA, in descending order. Cessnock LGA has the fastest rate of annual population growth (1.7%) and Moree Plains LGA will experience the highest rate of population decline (1.2% decline).

Table 21 Projected population growth between 2021 and 2041 by HNECC PHN LGAs

LGA	Annual population change from 2021 to 2041
Cessnock (C)	1.7%
Maitland (C)	1.2%
Central Coast (C) (NSW)	1.0%
Armidale Regional (A)	0.8%
Newcastle (C)	0.8%
Port Stephens (A)	0.6%
Lake Macquarie (C)	0.5%
Tamworth Regional (A)	0.5%
Muswellbrook (A)	0.4%
Mid-Coast (A)	0.3%
Dungog (A)	0.1%

LGA	Annual population change from 2021 to 2041
Inverell (A)	0.0%
Gunnedah (A)	0.0%
Singleton (A)	-0.1%
Narrabri (A)	-0.3%
Gwydir (A)	-0.4%
Upper Hunter Shire (A)	-0.5%
Uralla (A)	-0.5%
Liverpool Plains (A)	-0.6%
Walcha (A)	-0.7%
Tenterfield (A)	-0.8%
Glen Innes Severn (A)	-1.1%
Moree Plains (A)	-1.2%
HNECC PHN	**0.7%**

Source: NSW Planning, ASGS 2019 LGA projections

Socioeconomic Disadvantage

Socioeconomic disadvantage is measured using indicators of income, education levels, employment, and housing conditions. The Index of Relative Socioeconomic Disadvantage (IRSD) is a general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area.

The SEIFA IRSD for HNECC PHN is 976 (NSW 1,002). The SEIFA IRSD for HNECC PHN LGAs in ascending order is shown in Table 27, based on an Australian score of 1,000. A low score indicates relative greater disadvantage and high scores indicate relative lack of disadvantage. Inverell LGA has the highest level of disadvantage and Lake Macquarie and Newcastle LGAs have the equally lowest levels of disadvantage in the region.

Table 22 IRSD by LGA, 2016

LGA	IRSD
Inverell (A)	909
Tenterfield (A) - part a	910
Liverpool Plains (A)	914
Glen Innes Severn (A)	915
Moree Plains (A)	920
Cessnock (C)	926
Mid-Coast (A)	928
Muswellbrook (A)	930
Gwydir (A)	942
Gunnedah (A)	950
Narrabri (A)	960
Tamworth Regional (A)	962
Upper Hunter Shire (A)	976
Port Stephens (A)	979
Armidale Regional (A)	980
Walcha (A)	981
Maitland (C)	985
Central Coast (C) (NSW)	988
Dungog (A)	989
Singleton (A)	990

LGA	IRSD
Uralla (A)	992
Newcastle (C)	995
Lake Macquarie (C)	995
HNECC PHN	**976**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

Cultural Diversity

5.2% of people living in the HNECC PHN were born in predominantly non-English speaking countries (NSW 21.0%) and 0.5% of those born overseas report poor proficiency in English (NSW 3.8%). Table 28 shows the proportion of people born in predominantly non-English speaking countries by LGA in descending order. Newcastle LGA had the highest proportion of people born in predominantly non-English speaking countries (9.2%) and Liverpool Plains LGA had the lowest proportion of people born in predominantly non-English speaking countries.

Table 23: Proportion of people born in predominantly non-English speaking countries by LGA, 2016 URP

LGA	Proportion of 2016 URP born in predominantly non-English speaking countries (%)
Newcastle (C)	9.2
Armidale Regional (A)	7.8
Central Coast (C) (NSW)	6.2
Lake Macquarie (C)	4.7
Port Stephens (A)	4.2
Muswellbrook (A)	4.0
Tamworth Regional (A)	3.9
Maitland (C)	3.8
Mid-Coast (A)	3.6
Inverell (A)	3.1
Upper Hunter Shire (A)	3.1
Singleton (A)	3.1
Moree Plains (A)	3.1
Tenterfield (A) - part a	3.0
Glen Innes Severn (A)	2.8
Cessnock (C)	2.5
Gunnedah (A)	2.2
Walcha (A)	2.2
Uralla (A)	2.1
Narrabri (A)	2.1
Gwydir (A)	1.5
Dungog (A)	1.4
Liverpool Plains (A)	1.4
HNECC PHN	**5.2**

Source: Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

Table 29 shows the proportion of people born overseas reporting poor proficiency in English by LGA in descending order. Newcastle LGA had the highest proportion of people born overseas reporting poor proficiency in English (1.2%) and Dungog, Liverpool Plains and Walcha LGA had the equally lowest proportion of people born overseas reporting poor proficiency in English (0.0%).

Table 24: Proportion of people born overseas reporting poor proficiency in English by LGA, 2016 URP

LGA	Proportion of URP 2016 born overseas reporting poor proficiency in English (%)
Newcastle (C)	1.2
Armidale Regional (A)	0.8
Tamworth Regional (A)	0.6
Central Coast (C) (NSW)	0.5
Upper Hunter Shire (A)	0.5
Lake Macquarie (C)	0.3
Inverell (A)	0.3
Maitland (C)	0.3
Moree Plains (A)	0.3
Singleton (A)	0.2
Glen Innes Severn (A)	0.2
Gunnedah (A)	0.2
Tenterfield (A) - part a	0.2
Port Stephens (A)	0.2
Muswellbrook (A)	0.2
Narrabri (A)	0.2
Mid-Coast (A)	0.2
Cessnock (C)	0.1
Gwydir (A)	0.1
Uralla (A)	0.1
Dungog (A)	0.0
Liverpool Plains (A)	0.0
Walcha (A)	0.0
HNECC PHN	**0.5**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published January 2020

People Experiencing Homelessness

In 2016, there were an estimated 3,751 people experiencing homelessness in the HNECC PHN region, representing 0.3% of the population (NSW 0.5%). Table 30 shows the proportion of people experiencing homelessness by LGA in descending order. Moree Plains LGA had the highest proportion (1.0%) and Walcha LGA had the lowest proportion (0.0%).

Table 25: Proportion of people experiencing homelessness by LGA, 2016

LGA	Homeless population as a % of total population
Moree Plains (A)	1.0
Armidale Regional (A)	0.8
Newcastle (C)	0.5
Upper Hunter Shire (A)	0.5
Glen Innes Severn (A)	0.3
Tamworth Regional (A)	0.3
Central Coast (C) (NSW)	0.3
Dungog (A)	0.3
Muswellbrook (A)	0.3
Narrabri (A)	0.2
Inverell (A)	0.2

LGA	Homeless population as a % of total population
Gwydir (A)	0.2
Tenterfield (A) - part a	0.2
Mid-Coast (A)	0.2
Liverpool Plains (A)	0.2
Uralla (A)	0.2
Lake Macquarie (C)	0.2
Port Stephens (A)	0.2
Cessnock (C)	0.2
Singleton (A)	0.2
Maitland (C)	0.1
Gunnedah (A)	0.1
Walcha (A)	0.0
HNECC PHN	**0.3**

Source: ABS Census of Population and Housing: Estimating homelessness, 2016 (2018)

People Experiencing High Psychological Distress

There were an estimated 128,194 people aged 18 years and over who reported high or very high psychological distress in the HNECC PHN region in 2017-18. The age-standardised rate (ASR) per 100 of people aged 18 years and over with high or very high psychological distress based on the Kessler 10 (K10) scale for the HNECC PHN region was 13.6, which was higher than the NSW rate (12.4).

Table 31 shows the ASR per 100 of people aged 18 years and over with high or very high psychological distress by LGA in descending order. Cessnock LGA has the highest ASR per 100 of adults with high or very high psychological distress (16.0) and Walcha LGA had the lowest ASR (9.8).

Table 26 ASR per 100 of people aged 18 years and over with high or very high psychological distress by LGA, 2017-18

LGA	Number of adults with high or very high psychological distress, ASR per 100
Cessnock (C)	16.0
Glen Innes Severn (A)	14.8
Muswellbrook (A)	14.4
Tenterfield (A) - part a	14.0
Mid-Coast (A)	14.0
Maitland (C)	13.8
Central Coast (C) (NSW)	13.7
Lake Macquarie (C)	13.5
Port Stephens (A)	13.4
Inverell (A)	13.3
Newcastle (C)	13.2
Liverpool Plains (A)	13.0
Moree Plains (A)	12.9
Singleton (A)	12.7
Armidale Regional (A)	12.5
Gunnedah (A)	12.1
Tamworth Regional (A)	11.8
Dungog (A)	11.8
Gwydir (A)	11.7

LGA	Number of adults with high or very high psychological distress, ASR per 100
Narrabri (A)	11.6
Upper Hunter Shire (A)	11.3
Uralla (A)	11.2
Walcha (A)	9.8
HNECC PHN	**13.6**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published January 2020

Self-Reported Health

There were 162,449 people in the HNECC PHN who rated their health as poor or fair in 2017-18. The ASR per 100 of people in the HNECC PHN region who rated their health as poor or fair was 15.1, which was higher than the NSW ASR per 100 (14.1). Table 32 shows the ASR per 100 of people aged 15 years and over with fair or poor self-assessed health by LGA in descending order. Inverell LGA had the highest ASR per 100 (18.8) and Lake Macquarie had the lowest ASR (13.5).

Table 27: ASR per 100 of people aged 15 years and over with fair or poor self-assessed health by LGA, 2017-18

LGA	Estimated number of people aged 15 years and over with fair or poor self-assessed health ASR per 100
Inverell (A)	18.8
Glen Innes Severn (A)	18.5
Cessnock (C)	18.5
Moree Plains (A)	18.0
Muswellbrook (A)	17.7
Mid-Coast (A)	17.4
Tenterfield (A) - part a	17.2
Uralla (A)	17.1
Dungog (A)	17.0
Gwydir (A)	15.8
Liverpool Plains (A)	15.8
Tamworth Regional (A)	15.8
Maitland (C)	15.8
Gunnedah (A)	15.8
Armidale Regional (A)	15.5
Upper Hunter Shire (A)	15.5
Port Stephens (A)	15.5
Narrabri (A)	15.5
Singleton (A)	14.2
Newcastle (C)	14.2
Central Coast (C) (NSW)	14.2
Walcha (A)	14.0
Lake Macquarie (C)	13.5
HNECC PHN	**15.1**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

Multiple Chronic Conditions

The ASR per 100 of people aged 18 years and over who had mental and behavioural problems and heart, stroke and vascular disease in 2014-15 for the HNECC PHN was 1.6, which was higher than the NSW rate of 1.4.

Table 33 shows the ASR per 100 of people aged 18 years and over who had mental and behavioural problems and heart, stroke and vascular disease by LGA in descending order. Mid-Coast LGA had the highest ASR per 100 (2.2) and Upper Hunter Shire had the lowest ASR (1.1).

Table 28: ASR per 100 of people aged 18 years and over who had mental and behavioural problems and heart, stroke and vascular disease by LGA in descending order, 2014-16

LGA	Estimated number of people aged 18 years and over who had mental and behavioural problems and heart, stroke and vascular disease ASR per 100
Mid-Coast (A)	2.2
Cessnock (C)	2.0
Glen Innes Severn (A)	1.9
Tenterfield (A) - part a	1.9
Inverell (A)	1.7
Gwydir (A)	1.7
Liverpool Plains (A)	1.6
Moree Plains (A)	1.6
Port Stephens (A)	1.6
Newcastle (C)	1.6
Maitland (C)	1.6
Lake Macquarie (C)	1.5
Central Coast (C) (NSW)	1.5
Gunnedah (A)	1.4
Uralla (A)	1.4
Tamworth Regional (A)	1.4
Dungog (A)	1.4
Narrabri (A)	1.4
Armidale Regional (A)	1.4
Walcha (A)	1.3
Muswellbrook (A)	1.3
Singleton (A)	1.3
Upper Hunter Shire (A)	1.1
HNECC PHN	**1.6**

Source: PHIDU, Social Health Atlas of Australia "Data by Primary Health Network (incl. Local Government Areas)" Published Jan 2020

2. Unmet demand for AH services

This section covers the drivers of unmet demand for AH services which are used to develop the AH Unmet Demand Index. Measuring unmet AH primary care demand in the region involves analysing the rates per population of non-urgent Emergency Department (ED) attendances in the AH period and ambulance calls triaged as non-urgent and referred to healthdirect.

Non-Urgent ED Attendances in the AH Period

Non-urgent ED presentations are defined by the AIHW as presentations for lower urgency care at formal public hospital EDs where the patient:

- had an emergency presentation type of visit
- had a triage category of 4 (semi-urgent) or 5 (non-urgent)

- did not arrive by ambulance, or police or correctional vehicle, and
- was not admitted to the hospital, not referred to another hospital, or did not die.

Non-urgent ED presentations are a good indicator of unmet demand for AH services. In a 2019 HNECC PHN survey of 391 patients, it was identified that if a viable AH primary care service was not available when required, presenting to ED was the most likely alternative (58% respondents). It must be noted however, that availability is one of several reasons identified in the literature as to why people are attending ED for non-urgent care. Other factors include perceived seriousness, perceived capacity of primary care and advantages of accessing care at ED (such as quality and convenience)[10].

There were 118,318 category 4/5 ED presentations in the AH period in 2017-18 in the HNECC PHN region. Table 34 shows the proportion of category 4/5 ED presentations in the AH period by SA3 in descending order. Wyong SA3 had the highest proportion of category 4/5 ED presentations in the AH period (13%) followed by Tamworth-Gunnedah (12%) and Great Lakes had the lowest proportion (1%).

Table 29: Proportion of category 4/5 ED presentations in the AH period by SA3, 2017-18

SA3	Number of Category 4/5 ED presentations in AH period	% of Category 4/5 ED presentations in AH period
Wyong	15,369	13%
Tamworth - Gunnedah	14,102	12%
Newcastle	13,207	11%
Lower Hunter	12,614	11%
Lake Macquarie - East	9,902	8%
Gosford	9,144	8%
Maitland	7,041	6%
Lake Macquarie - West	5,670	5%
Port Stephens	5,653	5%
Taree - Gloucester	5,596	5%
Upper Hunter	5,510	5%
Armidale	4,572	4%
Moree - Narrabri	4,251	4%
Inverell - Tenterfield	4,248	4%
Great Lakes	1,439	1%
HNECC PHN	**118,318**	**100%**

Source: AIHW, Use of emergency departments for lower urgency care: 2015–16 to 2017–18
Notes: ED presentations for lower urgency care are presentations by place of residence.

Across the HNECC PHN, the number of category 4/5 ED presentations in the AH period per 1,000 population in 2017-18 was 94.1, which is higher than the NSW rate (68.9).

Table 35 shows the number of category 4/5 ED presentations in the AH period per 1,000 population by SA3 for HNECC PHN in descending order. Upper Hunter SA3 has the highest number of category 4/5 ED presentations in the AH period per 1,000 population (179.4), followed by Tamworth-Gunnedah (170.4) and Moree Narrabri (162.0) and Great Lakes has the lowest (44.8).

[10] North Western Melbourne PHN After-hours Primary Health Care: Gap Analysis and Recommendations (2018) Impact Co (Available at: https://nwmphn.org.au/wp-content/uploads/2019/03/181219-NWMPHN-After-Hours-Gap-Analysis-Final-Report-FINAL.pdf)

Table 30: Number of category 4/5 ED presentations in the AH period per 1,000 population by SA3, 2017-18

SA3	Category 4/5 ED presentations in AH period per 1,000 population
Upper Hunter	179.4
Tamworth - Gunnedah	170.4
Moree - Narrabri	162.0
Lower Hunter	139.4
Armidale	119.4
Inverell - Tenterfield	109.3
Taree - Gloucester	101.7
Wyong	93.6
Maitland	90.6
Lake Macquarie - East	80.3
Newcastle	77.2
Port Stephens	76.9
Lake Macquarie - West	72.9
Gosford	52.2
Great Lakes	44.8
HNECC PHN	**94.1**

Source: AIHW Use of emergency departments for lower urgency care: 2015–16 to 2017–18
Notes: ED presentations for lower urgency care are presentations by place of residence.

Non-urgent ED presentations in the AH period by broad age group was also examined. The number of category 4/5 ED presentations in the AH period per 1,000 population of people aged under 15 years in 2017-18 was 142.0 and for people aged 65 years and over was 52.5.

Table 36 shows the number of category 4/5 ED presentations in the AH period per 1,000 population for people aged under 15 years in 2017-18 by SA3 in descending order. Upper Hunter SA3 had the highest number per 1,000 (244.3), followed by Tamworth-Gunnedah (243.4) and Moree-Narrabri (241.4), which were well above the HNECC PHN rate (142.0). The lowest number per 1,000 was Gosford SA3 (72.2).

Table 31: Category 4/5 presentations in AH period per 1,000 population for children aged under 15 years in 2017-18 by SA3

SA3	Category 4/5 ED presentations in AH period per 1,000 population (under 15 years)
Upper Hunter	244.3
Tamworth - Gunnedah	243.4
Moree - Narrabri	241.4
Lower Hunter	211.8
Armidale	175.8
Taree - Gloucester	155.3
Inverell - Tenterfield	153.6
Maitland	140.6
Port Stephens	128.4
Wyong	128.0
Lake Macquarie - West	120.4
Newcastle	119.0
Lake Macquarie - East	117.2
Great Lakes	72.3

Gosford	72.2
HNECC PHN	**142.0**

Source: AIHW Use of emergency departments for lower urgency care: 2015–16 to 2017–18
Notes: ED presentations for lower urgency care are presentations by place of residence.

Table 37 shows the number of category 4/5 ED presentations in the AH period per 1,000 population for people aged 65 years and over in 2017-18 by SA3 in descending order. Upper Hunter SA3 had the highest number per 1,000 (143.5), followed by Moree-Narrabri (99.0) and Tamworth-Gunnedah (89.0) which were well above the HNECC PHN rate (52.5). The lowest number per 1,000 was Great Lakes SA3 (23.9).

Table 32: Category 4/5 presentations in AH period per 1,000 population for people aged 65 years and over in 2017-18 by SA3

SA3	Category 4/5 ED presentations in AH period per 1,000 population (65 years and over)
Upper Hunter	143.5
Moree - Narrabri	99.0
Tamworth - Gunnedah	89.0
Armidale	88.2
Lower Hunter	87.1
Inverell - Tenterfield	72.1
Taree - Gloucester	55.1
Maitland	54.0
Lake Macquarie - East	49.2
Wyong	47.6
Newcastle	43.5
Port Stephens	42.5
Lake Macquarie - West	32.4
Gosford	28.7
Great Lakes	23.9
HNECC PHN	**52.5**

Source: AIHW Use of emergency departments for lower urgency care: 2015–16 to 2017–18
Notes: ED presentations for lower urgency care are presentations by place of residence.

Non-Urgent Calls to Ambulance NSW Transferred to Healthdirect

All 000 calls to Ambulance NSW are triaged to determine whether an Ambulance response is required and the urgency at which it is required. After hours calls to NSW Ambulance triaged as non-urgent and not requiring an Ambulance response are a good indicator of unmet demand for AH primary care services. When this occurs, the caller is transferred by NSW Ambulance to the healthdirect Nurse Helpline. Healthdirect will then provide secondary triage and (if required) refer the patient for appropriate management by an alternative service provider such as a GP or nurse. These calls are recorded by healthdirect as having an 'original disposition of 000'.

There were 5,699 healthdirect Helpline calls in the AH period with an original disposition of 000 in 2018 in the HNECC PHN region. Table 38 shows the proportion of healthdirect Helpline calls in the AH period with an original disposition of 000 by LGA in descending order. Central Coast LGA had the highest proportion of AH calls with an original disposition of 000 (31.9%) followed by Lake Macquarie (15.2%) and Newcastle (13.7%). The lowest was Gwydir and Liverpool Plains LGAs with no calls.

Table 33: Proportion of healthdirect Helpline calls AH with original disposition of 000 in 2018, by LGA

LGA	Healthdirect Helpline calls AH with original disposition of 000	% of Healthdirect Helpline calls AH with original disposition of 000
Central Coast (C)	1,818	31.9%
Lake Macquarie (C)	866	15.2%
Newcastle (C)	783	13.7%
Mid-Coast (A)	550	9.7%
Maitland (C)	411	7.2%
Port Stephens (A)	356	6.2%
Tamworth Regional (A)	245	4.3%
Armidale Regional (A)	224	3.9%
Cessnock (C)	152	2.7%
Inverell (A)	60	1.1%
Muswellbrook (A)	42	0.7%
Singleton (A)	37	0.6%
Glen Innes Severn (A)	33	0.6%
Gunnedah (A)	24	0.4%
Upper Hunter Shire (A)	24	0.4%
Moree Plains (A)	19	0.3%
Dungog (A)	16	0.3%
Narrabri (A)	16	0.3%
Tenterfield (A) – part a	10	0.2%
Uralla (A)	NP	NP
Walcha (A)	NP	NP
Liverpool Plains (A)	0	0.0%
Gwydir (A)	0	0.0%
HNECC PHN	**5,699**	**100%**

Source: Healthdirect Health Map – Helpline Call Data

Note: NP = Not Publishable

Table 39 shows the number of AH healthdirect Helpline calls with an original disposition of 000 per 1,000 population in 2018 by LGA in descending order. Armidale Regional LGA had the highest number per 1,000 (7.3), followed by Mid-Coast (5.9) and Central Coast (5.3). The lowest number per 1,000 was Gwydir and Liverpool Plains LGAs (0).

Table 34: AH Healthdirect Helpline calls with original disposition of 000 per 1000 population, in 2018, by LGA

LGA	AH Healthdirect Helpline calls with original disposition of 000 per 1,000 population
Armidale Regional (A)	7.3
Mid-Coast (A)	5.9
Central Coast (C)	5.3
Maitland (C)	4.9
Port Stephens (A)	4.9
Newcastle (C)	4.8
Lake Macquarie (C)	4.2
Tamworth Regional (A)	3.9
Glen Innes Severn (A)	3.7
Inverell (A)	3.6
Cessnock (C)	2.6
Muswellbrook (A)	2.6
Walcha (A)	NP
Gunnedah (A)	1.9
Dungog (A)	1.7
Upper Hunter Shire (A)	1.7
Tenterfield (A) – part a	1.6
Singleton (A)	1.6
Moree Plains (A)	1.4
Narrabri (A)	1.2
Uralla (A)	NP
Liverpool Plains (A)	0.0
Gwydir (A)	0.0

Source: Healthdirect Health Map – Helpline Call Data

Note: NP = Not Publishable

3. Availability of AH primary care services

This section covers the range of AH primary care services available in the HNECC PHN region which are used to develop the AH Service Availability Index.

Range of AH Services

In the HNECC PHN region, AH primary care services are provided by the following:

- General Practices, pharmacy, mental health, radiology, imaging and other allied health services
- PHN commissioned services including:
    - GP Access AH (GPAAH), which is a bulk billed, comprehensive AH primary care service that has been integrated with Belmont Hospital, John Hunter Hospital, Calvary Mater Hospital, Maitland Hospital and Westlakes Community Centre (Toronto)
    - Aged Care Emergency Service (ACE), which is a nurse led program using evidence-based algorithms to manage common health problems within the RACF facilities and a telephone consultation service for RACF staff to access clinical guidance in the AH period

- Central Coast AH Service comprising three GP led clinics including Erina Bridges AH GP Clinic (located at Erina Community Health Centre), Kanwal Bridges AH GP Clinic (located on Wyong Hospital Campus) and Woy Woy AH Medical Service (located at Woy Woy Hospital)
- Small Towns AH service, which The Small Towns AH (STAH) program, which provides a telephone link between a registered nurse in a rural and remote hospital and a GP VMO from a district size town for triage Category 3-5, when the GP rostered to be on-call at the hospital is unavailable. The STAH program includes the following towns: Boggabri, Barraba, Bingara, Manilla, Wee Waa, Warialda, Quirindi, Walcha, Emmaville and Murrurundi.

- Medical Deputising Services
- Healthdirect

GP Practices Open During the AH Period

There were 127 GP Practices in the HNECC PHN region open during the AH period in 2019-20. This equates to 1 GP Practice open in the AH period per 10,000 population in the region. Table 40 shows the number of GP practices open during the AH period per 10,000 population by LGA in descending order. Narrabri LGA has the highest rate (2.3) followed by Tenterfield LGA (1.6).

In the following LGAs there are no GP practices open in the AH period: Glen Innes Severn, Gunnedah, Gwydir, Moree Plains, Uralla and Walcha.

Table 35: Number of GP Practices open during the AH period per 10,000 population by LGA, 2020

LGA	No. of GP AH Services per 10,000 population
Narrabri (A)	2.3
Tenterfield (A) - part a	1.6
Cessnock (C)	1.4
Liverpool Plains (A)	1.3
Central Coast (C) (NSW)	1.2
Newcastle (C)	1.2
Dungog (A)	1.1
Armidale Regional (A)	1.0
Lake Macquarie (C)	1.0
Mid-Coast (A)	1.0
Maitland (C)	1.0
Tamworth Regional (A)	0.8
Upper Hunter Shire (A)	0.7
Muswellbrook (A)	0.6
Inverell (A)	0.6
Port Stephens (A)	0.6
Singleton (A)	0.4
Glen Innes Severn (A)	0.0
Gunnedah (A)	0.0
Gwydir (A)	0.0
Moree Plains (A)	0.0
Uralla (A)	0.0
Walcha (A)	0.0
HNECC PHN	**1.0**

Note: This table includes HNECC PHN funded AH services including GPAAH, Bridges AH Clinics and WWAHMS.
Source: ChilliDB and GP practice websites.

The AH arrangements of GP practices in the HNECC PHN region also demonstrates the effectiveness of current pathways to AH services. Table 41 shows GP AH arrangements in the HNECC PHN region. Almost 70% of GPs direct patients to either a GP on call, MDS or PHN commissioned AH service in the AH period. The remainder direct patients to attend their local hospital (GP-VMO staffed hospital 12%, non GP-VMO staffed hospital 5%) or do not advertise an AH arrangement for patients (13%).

Table 36: AH arrangements of GP practices in the HNECC PHN region

GP AH Arrangement	No.	%
Attend local hospital (GP-VMO staffed)	50	12%
Attend local hospital (not GP-VMO staffed)	21	5%
GP on call (including single or multi-practice roster)	71	17%
Medical deputising service (excluding GP Access After Hours)	43	11%
Bridges or Woy Woy After Hours Medical Service	28	7%
GP Access After Hours	123	30%
Cooperative (excluding Bridges/WWAHMS)	16	4%
None advertised	54	13%
Total	**406**	**100%**

Source: ChilliDB and GP practice websites.

Note: The data in table 41 was not used in the calculation of the Service Availability Index.

Table 42 shows the number of GP AH service hours available per week per 10,000 population by LGA in the HNECC PHN region, in descending order. The average number of GP AH service hours available per week per 10,000 population across the entire HNECC PHN region is 13.5 hours.

Note that service hours are calculated by summing the total service hours offered in the AH period per week for all GP services in the LGA and does not account for the number of patients which can be treated in those hours i.e. the analysis does not account for service size/capacity.

Further, the analysis does not account for urgency of patients treated during this time, i.e. pre-booked appointments for management of chronic conditions versus walk-ins or urgent care appointments.

Newcastle LGA has the highest number of GP AH service hours available per week per 10,000 population (46:53 hours). Only two LGAs are above the HNECC PHN region average (13:29) including Newcastle and Lake Macquarie (14:26) LGAs.

Table 37: Number of AH GP service hours available per week per 10,000 population by LGA

LGA	No. of GP AH service hours per week per 10,000 population
Newcastle (C)	46:53
Lake Macquarie (C)	14:26
Central Coast (C) (NSW)	12:25
Maitland (C)	9:18
Tamworth Regional (A)	8:17
Tenterfield (A) - part a	8:03
Dungog (A)	5:21
Singleton (A)	4:41
Muswellbrook (A)	4:16
Cessnock (C)	3:12
Upper Hunter Shire (A)	2:48
Port Stephens (A)	2:16
Narrabri (A)	2:16
Mid-Coast (A)	1:39

LGA	No. of GP AH service hours per week per 10,000 population
Armidale Regional (A)	1:37
Liverpool Plains (A)	0:38
Inverell (A)	0:35
Glen Innes Severn (A)	0:00
Gunnedah (A)	0:00
Gwydir (A)	0:00
Moree Plains (A)	0:00
Uralla (A)	0:00
Walcha (A)	0:00
HNECC PHN	**13:29**

Pharmacies Open During The AH Period

There are 225 pharmacies open during the AH period in the HNECC PHN region. This equates to 1.77 pharmacies open in the AH period per 10,000 population in the region.

Table 43 shows the number of pharmacies open during the AH period per 10,000 population by LGA in descending order. Liverpool Plains LGA has the highest number of pharmacies open during the AH period per 10,000 population (2.53), followed by Newcastle LGA (2.38) and Upper Hunter Shire LGA (2.11). Residents of the following LGAs do not have access to a pharmacy in the AH period: Dungog, Gwydir, Tenterfield, Uralla and Walcha.

Table 38: Number of Pharmacies open during the AH period per 10,000 population, by LGA

LGA	No. of AH Pharmacy Services per 10,000 population
Liverpool Plains (A)	2.53
Newcastle (C)	2.38
Upper Hunter Shire (A)	2.11
Mid-Coast (A)	2.04
Armidale Regional (A)	1.95
Central Coast (C) (NSW)	1.90
Port Stephens (A)	1.79
Inverell (A)	1.78
Tamworth Regional (A)	1.77
Gunnedah (A)	1.58
Cessnock (C)	1.52
Lake Macquarie (C)	1.51
Narrabri (A)	1.51
Moree Plains (A)	1.50
Maitland (C)	1.44
Singleton (A)	1.28
Muswellbrook (A)	1.22
Glen Innes Severn (A)	1.12
Dungog (A)	0.00
Gwydir (A)	0.00
Tenterfield (A) - part a	0.00
Uralla (A)	0.00
Walcha (A)	0.00
HNECC PHN	**1.77**

Source: National Health Services Directory

Table 44 shows the number of pharmacy AH service hours available per week per 10,000 population by LGA in the HNECC PHN region, in descending order. The average number of pharmacy AH service hours available per week per 10,000 population across the entire HNECC PHN region is 17:52 hours. Note that service hours are calculated by summing the total service hours offered in the AH period per week for all pharmacies in the LGA and does not account for the number of customers which can be served in those hours i.e. the analysis does not account for pharmacy size/capacity.

Newcastle LGA has the highest number of pharmacy AH service hours available per week per 10,000 population (33:12 hours). Only four LGAs are above the HNECC PHN region average (17:52) including Newcastle, Tamworth Regional (25:30), Lake Macquarie (20:04) and Central Coast (18:54) LGAs.

Table 39: Number of AH Pharmacies service hours per week per 10,000 population, by LGA

LGA	No. of Pharmacy AH service hours per week per 10,000 population
Newcastle (C)	33:12
Tamworth Regional (A)	25:30
Lake Macquarie (C)	20:04
Central Coast (C) (NSW)	18:54
Singleton (A)	16:51
Muswellbrook (A)	15:33
Cessnock (C)	13:42
Moree Plains (A)	13:28
Port Stephens (A)	13:16
Armidale Regional (A)	12:22
Maitland (C)	10:52
Mid-Coast (A)	10:46
Gunnedah (A)	7:30
Glen Innes Severn (A)	2:48
Liverpool Plains (A)	1:54
Upper Hunter Shire (A)	1:45
Inverell (A)	0:53
Narrabri (A)	0:45
Dungog (A)	0:00
Gwydir (A)	0:00
Tenterfield (A) - part a	0:00
Uralla (A)	0:00
Walcha (A)	0:00
HNECC PHN	**17:52**

Efforts were made to include data on numbers of and opening hours of radiology, imaging and psychology services. However, data were not included due to concerns about completeness of NHSD and internal PHN data held on these services.

Aboriginal and / or Torres Strait Islander AH Services

There are nine Aboriginal Community Controlled Health Organisations (ACCHOs) in the HNECC PHN region. The services and their geographical coverage are shown below in Table 45.

Table 40 Aboriginal Community Controlled Health Organisations in HNECC PHN geographical coverage

ACCHO	LGA Covered
Armajun Aboriginal Health Service	– Armidale Regional (A) – Glen Innes Severn (A) – Inverell (A) – Tenterfield (A)
Awabakal Cardiff	– Newcastle (C) – Maitland (C) – Port Stephens (A) – Lake Macquarie (C)
Biripi Aboriginal Corporation Medical Centre	– Mid-Coast (A)
Yerin Aboriginal Medical Service	– Central Coast (C)
Pius X Aboriginal Corporation	– Moree Plains (A)
Tamworth Aboriginal Medical Service	– Tamworth Regional (A)
Tobwabba Aboriginal Medical Service	– Mid-Coast (A)
Ungooroo Aboriginal Corporation	– Singleton (A) – Muswellbrook
Walhallow Aboriginal Corporation Clinical Services	– Liverpool Plains (A) – Tamworth Regional (A)

Source: ChilliDB and ACCHO websites

Table 46 shows the total number of clinics delivered by ACCHOs per LGA and the number of ACCHO AH service hours per week. Some ACCHOs deliver a range of clinics both within individual LGAs and across multiple LGAs. However, none are open during the AH period and were not included in the AH Service Availability Index.

Table 41 ACCHO service availability and AH service hours per week, by LGA

LGA	No. of ACCHO clinic services	No. AH service hours per week
Mid-Coast (A)	3	0:00
Moree Plains (A)	3	0:00
Inverell (A)	2	0:00
Newcastle (C)	2	0:00
Tamworth Regional (A)	2	0:00
Armidale Regional (A)	1	0:00
Central Coast (C) (NSW)	1	0:00
Glen Innes Severn (A)	1	0:00
Lake Macquarie	1	0:00
Liverpool Plains (A)	1	0:00
Maitland (C)	1	0:00
Muswellbrook (A)	1	0:00
Port Stephens (A)	1	0:00
Singleton (A)	1	0:00
Tenterfield (A)	1	0:00
Cessnock (C)	0	0:00
Dungog (A)	0	0:00

LGA	No. of ACCHO clinic services	No. AH service hours per week
Gunnedah (A)	0	0:00
Gwydir (A)	0	0:00
Narrabri (A)	0	0:00
Tenterfield (A) - part a	0	0:00
Upper Hunter Shire (A)	0	0:00
Uralla (A)	0	0:00
Walcha (A)	0	0:00
HNECC PHN	**22**	**0:00**

The AH arrangements of ACCHO clinics across the HNECC PHN region provides an indicator of effectiveness of current pathways to AH services for Aboriginal and/or Torres Strait Islander people. Table 47 shows AH arrangements of ACCHO clinics in the HNECC PHN region. Over two thirds of ACCHO clinics in the HNECC PHN region direct patients to their local hospital in the AH period.

Table 42 AH arrangements of ACCHO clinics in the HNECC PHN region

ACCHO AH Arrangement	No.	%
Attend local hospital (GP-VMO staffed)	12	54%
Attend local hospital (not GP-VMO staffed)	3	14%
GP on call (including single or multi-practice roster)	0	0%
Medical deputising service (excluding GP Access AH)	0	0%
Bridges or Woy Woy AH Medical Service	1	5%
GP Access AH	5	23%
Cooperative (excluding Bridges/WWAHMS)	1	5%
None advertised	0	0%
Total	**22**	**100%**

Note: The data in table 47 was not used in the calculation of the Service Availability Index.
Source: ChilliDB and ACCHO websites.

Medical Deputising Services

There are four Medical Deputising Services providing services within the HNECC PHN region. The services and their geographical coverage are shown below in Table 48.

Table 43: Medical Deputising Services in HNECC PHN and geographical coverage

MDS Name	LGAs covered by MDS
13 CURE	– Could not be confirmed.
13 Sick National Home Doctor Service	– Armidale Regional (A) – Central Coast LGA – Cessnock (partial) – Dungog (partial) – Glen Innes Severn (partial) – Gunnedah (partial) – Inverell (partial) – Lake Macquarie LGA – Liverpool Plains (partial) – Maitland LGA – Mid-Coast (partial) – Moree Plains (partial) – Muswellbrook (partial) – Narrabri (partial) – Newcastle LGA – Port Stephens – Singleton (partial) – Tamworth LGA – Tenterfield (partial) – Upper Hunter Shire (partial) – Uralla (partial)
Dial a Home Doctor	– Armidale Regional LGA – Cessnock LGA – Newcastle LGA – Lake Macquarie LGA
Mobile Medic & Newcastle AH Surgery	– Newcastle LGA – Lake Macquarie LGA

Source: National Association for Medical Deputising website http://www.namds.com/accredited-members-services-of-namds/ accessed on 23 May 2020), MDS websites accessed on 27 May 2020.

Table 49 shows the number of MDS per LGA, service hours per week, number of MDS AH services per 10,000 population and number of MDS AH service hours per week per 10,000 population. The table is ranked according to number of MDS AH service hours per week per 10,000 population in descending order.

Table 44: MDS AH service availability and service hours per week per 10,000 population by LGA

LGA	No. AH MDS Services	MDS AH Service Hours per week	No. of AH Services per 10,000 population	No. of MDS AH service hours per week per 10,000 population
Armidale Regional (A)	2	212	0.7	69.0
Newcastle (C)	3	318	0.2	19.4
Tamworth Regional (A)	1	106	0.2	17.1
Lake Macquarie (C)	3	318	0.1	15.5
Port Stephens (A)	1	106	0.1	14.6
Maitland (C)	1	106	0.1	12.7
Central Coast (C) (NSW)	1	106	0.0	3.1
Cessnock (C)	0	0	0.0	0.0
Dungog (A)	0	0	0.0	0.0
Glen Innes Severn (A)	0	0	0.0	0.0
Gunnedah (A)	0	0	0.0	0.0
Gwydir (A)	0	0	0.0	0.0
Inverell (A)	0	0	0.0	0.0
Liverpool Plains (A)	0	0	0.0	0.0
Mid-Coast (A)	0	0	0.0	0.0
Moree Plains (A)	0	0	0.0	0.0
Muswellbrook (A)	0	0	0.0	0.0
Narrabri (A)	0	0	0.0	0.0
Singleton (A)	0	0	0.0	0.0
Tenterfield (A) - part a	0	0	0.0	0.0
Upper Hunter Shire (A)	0	0	0.0	0.0
Uralla (A)	0	0	0.0	0.0
Walcha (A)	0	0	0.0	0.0

Note: If an MDS service only provided partial coverage to an LGA, it was excluded from the table.

Healthdirect GP AH Helpline

Phone calls to the GP AH Helpline are assessed by a registered nurse. Based on the caller's symptoms, a phone call or a video call from a GP may be offered. If this occurs, the GP makes contact within 15 minutes or 1 hour depending on the urgency of the health issue and the post code of the caller. A care advice summary can be sent to the caller by SMS or email following the GP contact.

For residents calling from the SA3s of Gosford, Wyong, Lake Macquarie – East, Lake Macquarie - West, Maitland and Newcastle, the GP AH Helpline is available:

- Monday to Friday, 11pm - 7:30am
- Saturday, from 6pm
- Sunday and Public Holidays, all day

For residents calling from other SA3s in the HNECC PHN region, the AH GP Helpline is available:

- Monday to Friday, 6pm - 7:30am
- Saturday, from midday
- Sunday and Public Holidays, all day

Table 50 shows the number of GP AH Helpline calls per 1,000 population by LGA in descending order. The average for the region is 5.1, with Armidale Regional LGA (9.6) having the highest rate followed by Maitland (8.3) and Mid-Coast and Tamworth Regional (8.0) LGAs. While not used in the Service Availability Index calculation, these data

may suggest that high rates are associated with high rates of community awareness of the GP AH Helpline and/or few alternative AH options and vice versa.

Table 45: Number of GP AH Helpline calls per 1,000 population by LGA, 2018

LGA	GP AH Helpline calls per 1,000 population
Armidale Regional	9.6
Maitland	8.3
Mid-Coast	8.0
Tamworth Regional	8.0
Port Stephens	7.1
Narrabri	6.8
Muswellbrook	6.2
Cessnock	6.0
Singleton	5.7
Central Coast	5.3
Dungog	4.6
Tenterfield	3.9
Gunnedah	3.4
Liverpool Plains	3.3
Lake Macquarie	3.3
Glen Innes Severn	3.1
Upper Hunter Shire	3.1
Walcha	NP
Inverell	2.2
Uralla	2.1
Newcastle	1.7
Moree Plains	NP
Gwydir	0.0
HNECC PHN	**5.1**

Source: After Hours GP Helpline Calls 2018, healthdirect Healthmap

Note: NP = Not Publishable

4. Composite Index Score

A composite index score was developed, based on the approach taken by North West Melbourne PHN, to better understand and quantify the AH primary health care needs of residents of the HNECC PHN region. The Composite Index Score quantifies the relative need for AH primary care services across the catchment, allowing LGAs to be ranked in order from most to least need as well as the proportion of need.

Three sub-indices were combined to calculate a Composite Index Score to rank allLGAs in the HNECC PHN region. The highest scores reflect the areas with the greatest need
and poorest service availability.

The Composite Index Score is comprised of three sub-indices:

1. AH Need Index
2. Unmet AH Demand Index
3. AH Service Availability Index

AH Needs Index

The AH Needs Index is based on 14 demographic drivers of need for AH primary care identified in the earlier section. The demographic drivers selected are shown below, along with the indicator and source. The drivers which are known to have a higher influence on demand for AH care are noted with an Asterix and were given an additional weighting of 0.5 in the modelling.

Table 46: Demographic drivers of AH Needs used in the AH Needs Index

Driver	Indicator (by LGA)	Source
Population size	Estimated resident population (ERP) 2018	PHIDU, 2020
0-4-year-old population*	Proportion of ERP 2018 aged 0-4 years	PHIDU, 2020
65+ year old population*	Proportion of 2018 ERP aged 65 years and over	PHIDU, 2020
Annual population growth	• Annual population growth to 2041 • Annual population growth for 0-4 year olds to 2041 • Annual population growth for people aged 65 years and over to 2041	2019 Population Projections, NSW Planning
Homeless population	Homeless population by place of enumeration, 2016	Census of Population and Housing, Australian Bureau of Statistics, 2018
Aboriginal and Torres Strait Islander population	Aboriginal population as proportion of total population 2016 URP	PHIDU, 2020
Culturally and Linguistically Diverse Population	• Proportion of 2016 URP born in predominantly non-English speaking countries • Proportion of 2016 URP born overseas reporting poor English proficiency	PHIDU, 2020
Socioeconomic disadvantage*	SEIFA Index of Relative Socio-economic Disadvantage 2016	PHIDU, 2020
Population experiencing mental illness*	Age Standardised Rate[11] (ASR) People aged 18 years or over with high or very high psychological distress based on K10 scale, 2017-18	PHIDU, 2020
Population with fair/poor self-assessed health status*	ASR People aged 15 years and over with fair or poor self-assessed health, 2017-18	PHIDU, 2020
Population with multiple chronic diseases	ASR People aged 18 years and over who had mental and behavioural problems and heart, stroke and vascular disease, 2014-15	PHIDU, 2019

[11] Age-standardisation allows fairer comparisons to be made between areas by accounting for variation in the age of populations within each area. This adjustment is important because the rates of many health conditions and health service use vary with age.

The indicators in Table 51 exist in various formats such as proportions, indexes and absolute numbers. Each indicator was standardised to enable it to be compared and added to produce a single index score. Indicators were standardised by dividing each LGA-specific indicator value by the sum of all 23 LGA-specific indicator values. Standardisation produces a score for each indicator for each LGA between 0 and 1 that can then be added across all standardised indicators.

Calculating the final AH Need Index Score involved summing the 14 standardised AH need scores for the 23 LGAs and dividing by the number of indicators. Table 52 shows AH Need Index Scores for all LGAs in the HNECC PHN region in descending order. A higher index score means a higher population need for AH services in the LGA.

Table 47: AH Need Index Scores

LGA	AH Need Index
Central Coast (C) (NSW)	6.51
Newcastle (C)	6.42
Armidale Regional (A)	5.76
Cessnock (C)	5.19
Lake Macquarie (C)	5.11
Maitland (C)	5.01
Tamworth Regional (A)	4.88
Moree Plains (A)	4.78
Mid-Coast (A)	4.65
Port Stephens (A)	4.51
Inverell (A)	4.25
Muswellbrook (A)	4.12
Gunnedah (A)	3.95
Upper Hunter Shire (A)	3.91
Singleton (A)	3.85
Narrabri (A)	3.77
Dungog (A)	3.56
Tenterfield (A) - part a	3.54
Glen Innes Severn (A)	3.49
Gwydir (A)	3.41
Liverpool Plains (A)	3.35
Uralla (A)	3.23
Walcha (A)	2.75

Note: Index values are presented as a percentage for easier comprehension.

Unmet Demand Index

The Unmet Demand Index is based on indicators which demonstrate demand for primary care in the AH period, which is met by acute care services, not primary care services. The Unmet Demand Index uses the indicators shown in Table 53. Non-urgent ED attendances are denoted with an Asterix and were given an additional weighting of 0.5 in the modelling to account for their strong influence on unmet demand for AH primary care.

Table 48: Indicators for Unmet Demand used in the Unmet Demand Index

Unmet Demand Measures	Indicator	Source
Non-urgent ED attendances*	Rate per 1,000 population for all category 4/5 ED attendances during the AH period by SA3	AIHW, 2017-18
Non-urgent ambulance calls	Rate per 1,000 population for non-urgent ambulance calls referred to healthdirect by LGA	healthdirect

The same approach was used to standardise each indicator and produce a single index score. Indicators were standardised by dividing each LGA-specific indicator value by the sum of all 23 LGA-specific indicator values. Standardisation produces a score for each indicator for each LGA between 0 and 1 that can then be added across all standardised indicators. Note that data available at SA3 level only was mapped to its constituent LGA.

Calculating the final AH Unmet Demand Index Score involved summing the two standardised AH Unmet Demand Index scores for the 23 LGAs and dividing by the number of indicators. Table 54 shows AH Unmet Demand Index Scores for all LGAs in the HNECC PHN region in descending order. A higher index score means a high population rate of unmet demand for AH services in the LGA.

Table 49: Unmet Demand Index Scores

LGA	AH Unmet Demand Index
Armidale Regional (A)	6.79
Tamworth Regional (A)	5.84
Muswellbrook (A)	5.27
Mid-Coast (A)	5.16
Maitland (C)	4.77
Upper Hunter Shire (A)	4.74
Gunnedah (A)	4.67
Central Coast (C) (NSW)	4.63
Port Stephens (A)	4.49
Glen Innes Severn (A)	4.45
Newcastle (C)	4.43
Cessnock (C)	4.43
Inverell (A)	4.40
Moree Plains (A)	4.20
Lake Macquarie (C)	4.09
Narrabri (A)	4.08
Dungog (A)	3.90
Singleton (A)	3.84
Walcha (A)	3.60
Liverpool Plains (A)	3.55
Tenterfield (A) - part a	3.22
Uralla (A)	3.19
Gwydir (A)	2.27

Note: Index values are presented as a percentage for easier comprehension.

Service Availability Index

A total of five service availability indicators were selected for inclusion into the index analysis, incorporating the number of service locations open in the AH period; and the number of weekly service hours available in the AH period for each LGA. They are included in Table 55. General Practice and Pharmacy service availability are denoted with an asterix and were given an additional weighting of 0.5 in the modelling to account for their strong influence on after-hours service availability.

Table 50: Indicators for service availability used in the Service Availability Index

AH Service	Indicator (by LGA)	Source
General Practice *	Number of GP practices open in the AH period	National Health Services Directory and PHN data
	Total GP service hours in the AH period per week	National Health Services Directory and PHN data
Pharmacies *	Number of Pharmacies open in the AH period	National Health Services Directory
	Total Pharmacy service hours in the AH period per week	National Health Services Directory
Medical Deputising Service	Number of Medical Deputising Services	Medical Deputising Service websites

The following services were not included within the service availability index:

- The Aged Care Emergency Service because its access is restricted to residents of aged care facilities who are enrolled within the ACE program.
- The Small Towns After-Hours Program because it is managed as an intermittent on-call roster, with services delivered from within the acute care setting .

The approach described previously was used to standardise each indicator and produce a single index score. Indicators were standardised by dividing each LGA-specific indicator value by the sum of all 23 LGA-specific indicator values. Standardisation produces a score for each indicator for each LGA between 0 and 1 that can then be added across all standardised indicators.

Calculating the final Service Availability Index Score involved summing the six standardised AH Service Availability Index scores for the 23 LGAs and dividing by the number of indicators. Table 56 shows AH Service Availability Index Scores for all LGAs in the HNECC PHN region in descending order. A higher index score means a higher population rate of AH service availability in the LGA.

Table 51: Service Availability Index Scores

LGA	Service availability index
Newcastle (C)	13.66
Lake Macquarie (C)	6.57
Central Coast (C) (NSW)	6.29
Tamworth Regional (A)	6.11
Armidale Regional (A)	5.56
Tenterfield (A) - part a	5.32
Liverpool Plains (A)	5.11
Narrabri (A)	5.04
Maitland (C)	4.80
Cessnock (C)	4.51
Muswellbrook (A)	4.41
Singleton (A)	4.17
Mid-Coast (A)	3.81
Upper Hunter Shire (A)	3.74
Port Stephens (A)	3.72
Dungog (A)	3.53
Moree Plains (A)	3.23
Inverell (A)	2.82
Gunnedah (A)	2.79
Glen Innes Severn (A)	2.53
Uralla (A)	2.28
Gwydir (A)	1.00
Walcha (A)	1.00

Note: Index values are presented as a percentage for easier comprehension.

Calculating The Composite Index Score

The Composite Index Score is derived using the below equation:

$$Composite\ Index\ Score = \frac{AH\ Need\ Index + Unmet\ Demand\ Index}{Service\ Availability\ Index}$$

The results of the Composite Index Score are shown in Table 57. A high Composite Index Score indicates high need combined with high unmet demand and low service availability. The LGA with the highest need, unmet demand and low service availability is Walcha LGA, followed by Gwydir LGA then Glen Innes Severn LGA.

Table 52: Composite Index Scores

Rank	LGA	COMPOSITE INDEX
1	Walcha (A)	12.17
2	Gwydir (A)	10.89
3	Glen Innes Severn (A)	5.42
4	Gunnedah (A)	5.32
5	Inverell (A)	5.28
6	Uralla (A)	4.86
7	Moree Plains (A)	4.79
8	Mid-Coast (A)	4.44
9	Port Stephens (A)	4.17
10	Upper Hunter Shire (A)	3.99
11	Armidale Regional (A)	3.89
12	Cessnock (C)	3.68
13	Muswellbrook (A)	3.67
14	Dungog (A)	3.64
15	Maitland (C)	3.51
16	Singleton (A)	3.19
17	Central Coast (C) (NSW)	3.05
18	Tamworth Regional (A)	3.03
19	Narrabri (A)	2.69
20	Lake Macquarie (C)	2.42
21	Liverpool Plains (A)	2.33
22	Tenterfield (A) - part a	2.19
23	Newcastle (C)	1.37

Note: Index values are presented as a percentage for easier comprehension.

PRIMARY HEALTH NETWORK

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