Review of chronic disease and after-hours health needs and service opportunities in the Mareeba region

Prepared for Northern Queensland Primary Health Network (NQPHN) by KP Health

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Northern Queensland Primary Health Network acknowledges the Traditional Custodians of the lands and seas on which we live and work, and pay our respects to Elders past and present.

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The Northern Queensland Primary Health Network (NQPHN) is one of 31 not for profit primary health care organisations established nationally to commission services to meet regional health care needs. The Australian Government has tasked NQPHN with administering $2 million (exc GST) to the Mareeba community to improve the management of chronic conditions ($1 million) and the delivery of after-hours care ($1 million).

In 2017 NQPHN engaged KP Health to identify opportunities for short-term investment in after-hours care and in chronic conditions management to deliver sustainable improvement in health outcomes for the Mareeba community. To complete this review, we adopted a mixed-methods approach that included triangulating data from a review of the relevant literature and policy documents, service mapping based on available service system and administrative data, and semi-structured interviews with Mareeba residents and clinicians.

Chronic conditions management

The Mareeba community has a growing population, an ageing population and a growing chronic disease burden within the community. A high mental health and alcohol and other drugs disease burden increases primary health service requirements for the Mareeba community.

A high proportion of Mareeba residents experience socio-economic disadvantage compared with the Queensland population as a whole. Mareeba residents are, in general, less able to afford health care than people in Queensland overall.

Mareeba has two private general practices and one Aboriginal Community Controlled Health Organisation. These practices are regarded by consumers as providing high quality services. However, general practice services in Mareeba do not currently meet patient demand. Mareeba residents report substantial waiting times to see a private GP. Further, neither private billing general practice bulk bills pensioners and/or health care card holders as a matter of course. As a result, primary health care delivered through private general practices is inaccessible and unaffordable for some Mareeba residents.

The Mareeba Hospital provides general practice services through a public-private service partnership. There are issues associated with this arrangement. This service attracts substantial patient numbers into the hospital environment whose care needs would be better met in the community and potentially exposes other patients to unnecessary risk. The service arrangement may reduce the growth and adaptation of the private service system to meet the needs of consumers. Public hospital staff and resources support the delivery of these general practice-type services, diverting resources away from caring for patients with more acute health needs.

Stakeholders are overwhelmingly supportive of using the funds made available by Australian Government to increase the availability of bulk billing general practice services in Mareeba. Most Mareeba residents expressed a strong preference for these bulk billing services to be located centrally in the Mareeba town centre rather than at the hospital. This will provide Mareeba residents with greater flexibility and choice of general practice providers and increase the affordability of general practice services, particularly patients on some form of income support.

Recommendations – Chronic conditions

That the Australian Government funding provided to the Mareeba community is used to increase local availability and accessibility of bulk-billed general practice services, particularly for pensioners and health care card holders.

That NQPHN administers a transparent, competitive tender process that encourages general practice market growth in Mareeba.

That, to support a market-based system of delivery of general practice services in Mareeba, the Mareeba Hospital (Cairns HHHS) does not directly compete with private providers in the delivery of general practice services in Mareeba.

That the Australian Government funding provided to the Mareeba community is also used by NQPHN to:
  • administer a local community grants program that supports increased access to mental health, alcohol and other drugs, youth health and men’s health programs and services, including through any newly established bulk billing general practice services; and
  • support the delivery of training and professional development in priority areas, including mental health (including peer training), alcohol and other drugs, chronic conditions and cultural aspects of care.
After-hours services
The Mareeba community receives after-hours primary care services from the Mareeba Hospital (for patients with time critical, serious after-hours care needs) and the Dial-a-Doctor medical deputising service (for patients whose after-hours care needs are time critical but not serious). These services are generally viewed favourably by stakeholders.

Stakeholder identified opportunities to improve after-hours service delivery through increasing consumer awareness of after-hours service options and which option is best suited to their after-hours care needs; and better supporting Aboriginal and Torres Strait Islander peoples in Mareeba to access after-hours care.

Recommendations – After hours
That, where appropriate, triage category 4 and 5 patients are directed to after-hours care delivered by general practice rather than the Mareeba Hospital Emergency Department.

That a social marketing campaign is implemented to promote the use of hospital resources for hospital patients, and to promote the Dial-a-Doctor service. That a trial to support the delivery of after-hours care to Aboriginal and Torres Strait Islander peoples through an on-call Aboriginal Health Worker role is resourced and supported.

Background to this review
Northern Queensland Primary Health Network (NQPHN) has engaged KP Health to conduct an assessment of chronic disease and after-hours primary health care needs in the Mareeba community and to identify opportunities for primary health service improvement.

The Northern Queensland Primary Health Network (NQPHN) is one of 31 not for profit Primary Health Networks (PHNs) established nationally. The objectives of PHNs are to:

- increase the efficiency and effectiveness of medical services for patients, especially 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.

The Commonwealth has set six priority areas for PHN attention:

- Aboriginal and Torres Strait Islander health;
- mental health;
- population health;
- health workforce;
- eHealth; and
- aged care.

This review
The Australian Government subsequently announced the provision of $2 million to the Mareeba community to improve the management of chronic conditions and delivery of after-hours services.

NQPHN engaged KP Health to conduct this review of chronic disease and after-hours services in the Mareeba community. The review identifies opportunities for short-term investment in after-hours care and in chronic conditions management that will deliver sustainable improvement in health outcomes for the Mareeba community.

The review draws on a combination of qualitative and quantitative data analysis and in-depth stakeholder consultation. In November 2017, 174 Mareeba community members participated in individual and group consultations. Although clinicians were not specifically targeted in this consumer consultation, 13 clinicians providing primary and community health services in Mareeba were also consulted as part of the review*.

The mean age of community members consulted was 59.1 years (range 15 to 91 years). A total of 55% of participants were male and 15% identified as Aboriginal and/or Torres Strait Islanders.

In line with the NQPHN quadruple aim outcomes, this report describes opportunities to improve the delivery of consumer-driven, safe, sustainable, high-quality chronic care services.

* NOTE: Participation by primary health stakeholders and organisations should not be inferred to represent endorsement of the recommendations in this report. A consultation log is provided at Appendix 2.
Overview of the Mareeba region

This section describes key sociodemographic characteristics of the Mareeba region and Mareeba Local Government Area (LGA). For a more comprehensive analysis of the characteristics of the Mareeba region / LGA, please refer to the Queensland Government Statisticians Office at www.qgso.qld.gov.au. The Mareeba region covers 481.8 km$^2$ (Mareeba Statistical Area Level 2 (SA2)) and is classified as an outer regional area by the Australian Bureau of Statistics Remoteness Area (RA) classification. At the Mareeba LGA level, the total land area spans 53,679.4 km$^2$. Figure 1 shows maps of the Mareeba region at an SA2 level and Mareeba LGA.

The Estimated Resident Population$^2$ of the Mareeba LGA is 22,157 persons, with this population serviced by the Mareeba Hospital. When considering the Mareeba SA2 region, the Estimated Resident Population is 11,334 persons. According to the 2016 Census of Population and Housing, 1,359 persons in the Mareeba region (12.3% of the resident population) were Aboriginal and/or Torres Strait Islander peoples, compared with 4.0% of the Queensland population.

Population growth

Health services planning accounts for rates of growth in population numbers over time.

The Mareeba region has experienced an average annual population growth of 1.6% over the past five years, and an average annual growth rate of 1.9% over the past ten years. This is the same rate of growth as Queensland, which has experienced population growth of 1.6% over five years and 1.9% over ten years. The number of people living in the Mareeba region is predicted to grow (at a rate of 1.3% per year), but at a slower rate than Queensland (at a rate of 1.7% per year)$^3$. In real terms, this means the population of Mareeba is projected to increase from its current size to 14,607 persons by 2036.

1 Data for Mareeba SA2 are based on Australian Bureau of Statistics (ABS), Australian Statistical Geography Standard (ASGS), July 2016.
2 The estimated resident population (ERP) figure is the official population estimate. For sub-state geographies, ERP figures are updated annually using a model which includes administrative data that indicate population change, such as registered births and deaths, dwelling approvals, Medicare enrolments and electoral enrolments.
3 The 2015 edition of the Queensland Government population projections are generated by applying assumptions regarding future trends in the components of population change (fertility, mortality and migration) and the latest planning and development intelligence available.
Population ageing
The age structure of the population is also important to consider in population planning, as different age groups have different health care needs. Chronic diseases and demand for health services are highest in older age groups of the population. The proportion of the Mareeba population aged 65 years and over is 20.5%. This is larger than for Queensland, where 14.7% of the population are aged 65 years and over.

Similarly, the median age is the age of the Mareeba population (the age at which half the population is older and half is younger) is higher in Mareeba (40.7 years) compared with Queensland (37 years). The median age of the Mareeba population is also expected to increase over time, to 46.9 years by 2036 compared with a smaller increase for Queensland as a whole (to 39.9 years by 2036)\textsuperscript{4}.

Other population characteristics relevant to health services planning
Persons with a profound or severe disability need help or assistance with their self-care, mobility and / or communication because of a long-term health condition (six months or more), a disability (lasting six months or more), or old age. There are 598 persons (or 5.4% of the population) in the Mareeba region who need assistance because of a profound or severe disability. This is similar to the Queensland rate of 5.2% of the population who need assistance because of profound or severe disability.

The Mareeba region experiences high rates of socio-economic disadvantage compared with Queensland. This is an important consideration for health services planning. The most disadvantaged members of the community experience higher rates of chronic diseases, have more risk factors for chronic disease (e.g. are more likely to smoke and less likely to have a healthy diet or regular exercise), have greater need for all health services (general practice, community services and hospitals) and have worse health outcomes than those who are least disadvantaged.

• The Mareeba region has an unemployment rate of 8.8%, compared with 6.2% for Queensland.
• The biggest employer in the Mareeba region is agriculture, forestry and fishing, which employs 15.4% of workers. Health care is also a major employer, with 12.0% of employed persons in the Mareeba region working in health care and social assistance. In comparison, health care and social assistance are the biggest employers in Queensland, with 13.0% of Queenslanders employed in this industry.

Income support, provided by the Australian Government Department of Social Services (DSS) is essential to improve the lifetime wellbeing of people and families in Australia. People who receive income support (particularly age pension or disability support pension) are more likely to have chronic disease care needs. In the Mareeba region there are 1,681 recipients of the Age pension, 448 recipients of the Disability support pension and 680 recipients of Newstart allowance.

Literacy is important for health and is an important consideration for health planners (to ensure health services can meet the health literacy needs of service users). Measures that can reflect overall population literacy include education and levels of spoken English in people’s homes\textsuperscript{5}. The percentage of people who have completed Year 11 or 12 at school is lower in the Mareeba region (43%) than Queensland as a whole (59%). Sometimes this is because people leave school to obtain a trade qualification. However, the percentage of people with a non-school qualification is lower in the Mareeba region (51%) than Queensland as a whole (59%). There were 1,427 persons (or 12.9% of the population) in the Mareeba region who speak a language other than English at home, compared with 12% of the Queensland population.

Homelessness is also an important consideration for health planners, as people who have no suitable accommodation have a higher chronic disease burden than the population in general. There are an estimated 127 homeless persons in the Mareeba region.

Transport influences access to health care. People, particularly those with chronic diseases, need transport to access health services regularly. The Census records the number of households that have no motor vehicles, as a proxy indicator for access to transport. According to the Census in 2016, 8.4% of dwellings in the Mareeba region have no motor vehicles, compared with 6.0% of dwellings for Queensland.

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\textsuperscript{4} These median age projections have been calculated by Queensland Treasury using the Queensland Government population projections, 2015 edition.

\textsuperscript{5} Socio-Economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia. SEIFA, which comprises a number of indexes, is generated by ABS from the Census of Population and Housing. The Index of Relative Socio-Economic Disadvantage is a SEIFA measure that ranks geographical areas in terms of their relative socio-economic disadvantage. The index focuses on low-income earners, relatively lower education attainment, high unemployment and dwellings without motor vehicles. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage. This is based on persons by place of usual residence.

\textsuperscript{6} From the 2016 Census of Population and Housing

Hospitalisations refer to hospital episodes of care (an admission and discharge from hospital – counted as one hospital separation). The number of hospital separations to Mareeba Hospital each year continues to rise (Table 1).

<table>
<thead>
<tr>
<th>Admissions category</th>
<th>2013-14</th>
<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childbirth</td>
<td>209</td>
<td>183</td>
<td>156</td>
<td>133</td>
</tr>
<tr>
<td>Medical (emergency)</td>
<td>4,356</td>
<td>4,399</td>
<td>3,848</td>
<td>2,821</td>
</tr>
<tr>
<td>Medical (other)</td>
<td>425</td>
<td>385</td>
<td>360</td>
<td>237</td>
</tr>
<tr>
<td>Specialist mental health</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Surgical (emergency)</td>
<td>40</td>
<td>21</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Surgical (other)</td>
<td>103</td>
<td>78</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Total</td>
<td>5,133</td>
<td>5,066</td>
<td>4,451</td>
<td>3,276</td>
</tr>
</tbody>
</table>

Health service utilisation and disease burden

Self-assessed health status provides an overall measure of a population’s health based on individuals’ personal perceptions of their own health. There is a strong association between self-assessed health and mortality rates in a population. This is important because mortality is considered the most objective measurement of the general health of a population. Mareeba residents record high aged standardised rates of fair or poor self-assessed health (Figure 2).

Figure 2: Self-assessed health status, Northern Queensland, 2011-13
Potentially preventable hospitalisations

A potentially preventable hospitalisation is an admission to hospital that potentially could have been prevented through the provision of appropriate individualised preventative health interventions and early disease management. This is usually delivered in general practice and community-based care settings. Reducing hospitalisations might involve vaccination, early diagnosis and treatment, and/or good ongoing management of risk factors and chronic conditions.

Potentially preventable hospitalisations are reported using three broad categories:

• Chronic conditions. These conditions may be preventable through lifestyle change, but can also be managed effectively through timely care (usually non-hospital) to prevent deterioration and hospitalisation. This category includes conditions such as congestive cardiac failure, diabetes complications, chronic obstructive pulmonary disease (COPD) and angina.

• Acute conditions. These conditions may not be preventable, but theoretically would not result in hospitalisation if timely and adequate care (usually non-hospital) was received. This category includes conditions such as urinary tract infections, cellulitis, dental conditions, ear, nose and throat infections.

• Vaccine preventable conditions. These conditions may be preventable through vaccination. This category includes conditions such as influenza, measles, diphtheria and hepatitis B.

The term potentially preventable hospitalisation does not mean that a patient admitted for that condition did not need to be hospitalised at the time of admission.

Figure 3 shows the Statistical Area 3 (SA3) that concords with Mareeba (light green bars) has high rates of potentially preventable hospitalisations compared with Australia as a whole (dark green bars).

**Figure 3: Age-standardised rates of potentially preventable hospitalisations per 100,000 people, SA3 region, 2015-16**

Cardiac and respiratory diseases (especially diabetes complications, heart failure and COPD) are responsible for most chronic disease-related potentially preventable hospitalisations in Mareeba. Acute hospitalisations are due to cellulitis (many affected patients have diabetes), kidney and urine infections, convulsions / epilepsy, ear / nose / throat infections and dental conditions (Table 2).
Table 2: Potentially preventable hospitalisations (PPH), Mareeba SA3 concordance region, 2015-16

<table>
<thead>
<tr>
<th>Potentially preventable hospitalisation (PPH) condition</th>
<th>PPH per 100,000 people (crude)</th>
<th>Number of PPH</th>
<th>Same day PPH</th>
<th>% PPH same day</th>
<th>Total PPH bed days</th>
<th>Average Length of Stay (ALOS) (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total chronic</td>
<td>2310</td>
<td>942</td>
<td>209</td>
<td>22.2</td>
<td>3271</td>
<td>3.5</td>
</tr>
<tr>
<td>Angina</td>
<td>348</td>
<td>142</td>
<td>48</td>
<td>33.8</td>
<td>234</td>
<td>1.6</td>
</tr>
<tr>
<td>Asthma</td>
<td>226</td>
<td>92</td>
<td>29</td>
<td>31.5</td>
<td>137</td>
<td>1.5</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>61</td>
<td>25</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>419</td>
<td>171</td>
<td>14</td>
<td>8.2</td>
<td>946</td>
<td>5.5</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td>547</td>
<td>223</td>
<td>21</td>
<td>9.4</td>
<td>858</td>
<td>3.8</td>
</tr>
<tr>
<td>Diabetes complications</td>
<td>397</td>
<td>162</td>
<td>32</td>
<td>19.8</td>
<td>654</td>
<td>4</td>
</tr>
<tr>
<td>Hypertension</td>
<td>120</td>
<td>49</td>
<td>13</td>
<td>26.5</td>
<td>105</td>
<td>2.1</td>
</tr>
<tr>
<td>Iron deficiency anaemia</td>
<td>172</td>
<td>70</td>
<td>48</td>
<td>68.6</td>
<td>127</td>
<td>1.8</td>
</tr>
<tr>
<td>Total acute</td>
<td>2602</td>
<td>1061</td>
<td>326</td>
<td>30.7</td>
<td>3033</td>
<td>2.9</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>758</td>
<td>309</td>
<td>66</td>
<td>21.4</td>
<td>1068</td>
<td>3.5</td>
</tr>
<tr>
<td>Convulsions and epilepsy</td>
<td>405</td>
<td>165</td>
<td>55</td>
<td>33.3</td>
<td>281</td>
<td>1.7</td>
</tr>
<tr>
<td>Dental conditions</td>
<td>333</td>
<td>136</td>
<td>93</td>
<td>68.4</td>
<td>184</td>
<td>1.4</td>
</tr>
<tr>
<td>Ear, nose and throat infections</td>
<td>375</td>
<td>153</td>
<td>58</td>
<td>37.9</td>
<td>207</td>
<td>1.4</td>
</tr>
<tr>
<td>Perforated/bleeding ulcer</td>
<td>NP</td>
<td>19</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Pneumonia (not vaccine-preventable)</td>
<td>NP</td>
<td>5</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Kidney and urinary tract infections</td>
<td>591</td>
<td>241</td>
<td>45</td>
<td>18.7</td>
<td>929</td>
<td>3.9</td>
</tr>
<tr>
<td>Total vaccine-preventable</td>
<td>177</td>
<td>72</td>
<td>8</td>
<td>11.1</td>
<td>2515</td>
<td>34.9</td>
</tr>
<tr>
<td>Pneumonia and influenza (vaccine-preventable)</td>
<td>142</td>
<td>58</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Total acute and vaccine-preventable</td>
<td>2773</td>
<td>1131</td>
<td>333</td>
<td>29.4</td>
<td>5528</td>
<td>4.9</td>
</tr>
<tr>
<td>Total PPH</td>
<td>5071</td>
<td>2068</td>
<td>542</td>
<td>26.2</td>
<td>8772</td>
<td>4.2</td>
</tr>
</tbody>
</table>
Population mortality
The leading causes of death in Queensland are cancer (30% of all deaths), cardiovascular diseases (29%), respiratory conditions (8%) and injuries (7%). The number of cancer deaths exceeded those due to cardiovascular disease for the first time in 2013, reflecting the substantial gains that have been achieved in preventing and treating cardiovascular diseases over past decades.

Causes of death vary according to patient age:
• Premature deaths are defined as those that occur in a person aged less than 75 years. The leading causes of premature deaths in Queensland are cancers (43% of the total), cardiovascular diseases (19%) and injuries (13%). Premature death rates are much higher in Aboriginal and Torres Strait Islander peoples.
• Potentially avoidable deaths are defined nationally, as deaths occurring in persons aged 0–74 years from conditions that are potentially preventable in the context of the current health system, through individualised care or through treatment in an existing primary or hospital care setting. In 2012, 52% of all premature deaths in Queensland were avoidable.

• In children aged 1 to 14 years in Queensland, the leading causes of death are brain cancers, traffic accidents, drowning and intentional self-harm.
• In people aged 15 to 29 years, the leading cause of death is suicide, followed by traffic accidents and alcohol / other drug-related death.

Lifestyle also influences cause of death. An estimated 40% of deaths are attributed to lifestyle risk factors, including obesity, smoking, physical inactivity and poor nutrition.

People who live in the Cairns and Hinterland Hospital and Health Services (HHS) region have higher death rates than Queensland as a whole, with Aboriginal and Torres Strait Islander peoples in the region having higher death rates than non-Indigenous people (Figure 4)\(^\text{10}\).

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\(^8\) Queensland Health. The Health of Queenslanders, 2016.
\(^9\) Ibid
\(^10\) Ibid
Figure 5: Cancer, cardiovascular disease and injury deaths: rates and trends by HHS, Queensland 2010-2012
Preventive health
The Mareeba community has poor indicators of preventive health. In 2015-16, for adults in the Mareeba local government area:

- 62% of adults are overweight or obese*;
- 47% have insufficient daily fruit intake for health benefit*;
- 91% have insufficient daily vegetable intake for health benefit*;
- 46% have insufficient physical activity (compared with 39% for Queensland as a whole);
- 18% are daily smokers (compared with 12% for Queensland as a whole);
- 25% of people drink alcohol at levels that cause lifetime risk of health problems (compared with 21% for Queensland as a whole); and
- 33% binge drink to risky levels at least once a month*.

Obesity, insufficient physical activity and poor diet contribute to chronic diseases, particularly cardiovascular disease, cancers of the breast, prostate and colon, diabetes and osteoarthritis.

Smoking substantially causes lung cancer, breast cancer and cardiovascular disease and excess alcohol intake is a major contributor to liver damage and increased risk of trauma.

These factors contribute to Mareeba’s high rates of potentially preventable hospitalisations and to deaths in the Mareeba community.

Mental health
Good mental health is fundamental to the wellbeing of individuals, their families and the Mareeba community. An estimated 14% of people have mental and behavioural problems that last at least six months. This has a significant impact on daily life - 1 in 3 people with a mental health problem report having time away from work or study in the previous 12 months. Three-quarters of people with mental and behavioural problems take medication for the problem with anti-depressants, tablets for anxiety and sleeping tablets used most commonly.

According to 2011-13 data, an estimated 2,041 people in the Mareeba / Kuranda SA2 region are living with chronic mental health problems (Figure 6).

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* Percentage similar to Queensland as a whole; Adult Risk Factor Prevalence, Queensland 2016. Available at: https://www.health.qld.gov.au/research-reports/population-health/preventive-health-surveys/results/qld#headline


Approximately 12.1% of the population of Mareeba reports high to very high levels of psychological distress (Figure 7).
Health services in the Mareeba region

Hospital services

Mareeba Hospital is one of Queensland’s 276 hospitals. The hospital is a 52-bed Level 3 general hospital with twenty doctors (ten senior, ten junior) that serves a population of some 20,000 people in the Mareeba area, including outreach services in Chillagoe, Dimbulah and the Lotus Glen Correctional Centre. Mareeba Hospital hosts specialist outreach services provided by Cairns Hospital.

The first Mareeba Hospital was established in 1894. The current facility was opened in 1980; recent and planned redevelopment works include the refurbishment of all bathrooms throughout the Hospital and upgrade of air-conditioning to the facility. The hospital is close to the Cairns Hospital (70km), however some more highly specialised services are located at the Townsville Hospital (475km) or the Royal Brisbane and Women’s Hospital (2,040km).

The Maternity unit offers a midwifery group practice and 24 hour obstetric cover. There is a group of midwives who work together to ensure that women and families receive consistent care throughout pregnancy, labour, birth and during the early weeks after the baby is born. The Mareeba Maternity Service also offers a Newborn and Family Drop in Service, Mums and Bubs Group, Childbirth Education Classes and Lactation Consultant Advice.

The Older Persons Evaluation, Rehabilitation and Assessment (OPERA) unit provides a geriatric service for at risk older patients admitted to the Mareeba Hospital subacute unit.

Mareeba Hospital is an accredited teaching hospital of James Cook University (medical and nursing) and accredited with the Australian College of Rural and Remote Medicine for training of provisional Fellows. Mareeba Hospital provides videoconferencing services through linkage with specialists from Cairns Hospital.

The service profile of the Mareeba Hospital is provided at Table 3.

Table 3: Service profile of Mareeba Hospital

<table>
<thead>
<tr>
<th>Category</th>
<th>Services</th>
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</thead>
<tbody>
<tr>
<td>Hospital services</td>
<td>Accident and Emergency ATODS (Alcohol, tobacco and other drugs service)</td>
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<tr>
<td></td>
<td>ECG/CTG</td>
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<td></td>
<td>Gynaecology</td>
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<td></td>
<td>Indigenous health</td>
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<td></td>
<td>Maternity</td>
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<td></td>
<td>Medical</td>
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<td>Mental health</td>
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<td></td>
<td>Obstetrics</td>
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<td></td>
<td>OPERA</td>
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<td></td>
<td>Oral health</td>
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<td></td>
<td>Palliative care</td>
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<td></td>
<td>Pathology</td>
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<td></td>
<td>Pharmacy</td>
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<td></td>
<td>Radiology</td>
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<td></td>
<td>Surgical</td>
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<td></td>
<td>Theatre</td>
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<td>Clinics</td>
<td>Dental</td>
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<td></td>
<td>Dressings</td>
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<td></td>
<td>Ear, Nose Throat (ENT)</td>
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<tr>
<td></td>
<td>Gynaecology</td>
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<td></td>
<td>High-risk foot (for diabetics)</td>
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<td></td>
<td>Immunisation</td>
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<td></td>
<td>Memory</td>
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<td></td>
<td>Pre-admission</td>
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<td></td>
<td>Skin</td>
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<td></td>
<td>Surgical</td>
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<td></td>
<td>Well women’s</td>
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<td>Allied health services</td>
<td>Dietetics and nutrition</td>
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<td></td>
<td>HACC (Home and Community Care)</td>
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<td></td>
<td>Occupational therapy</td>
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<td>Physiotherapy</td>
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<td>Social work</td>
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<td></td>
<td>Speech therapy</td>
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<tr>
<td>Outreach services</td>
<td>Alcohol, tobacco and other drug service</td>
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<td></td>
<td>Indigenous community nutritionian</td>
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<td></td>
<td>Medical services - Dimbulah and Chillagoe</td>
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<tr>
<td></td>
<td>Occupational therapy</td>
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<tr>
<td></td>
<td>Oral health services - Chillagoe</td>
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<td></td>
<td>Physiotherapy</td>
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<td></td>
<td>Social work</td>
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<tr>
<td>FNQ ACAT and Memory Service</td>
<td>Frail aged</td>
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<tr>
<td>- Tablelands</td>
<td>People with disabilities</td>
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<tr>
<td></td>
<td>Aged care assessments</td>
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<tr>
<td></td>
<td>Memory Clinic</td>
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<tr>
<td>Visiting specialist services</td>
<td>FROGS - Gynecology</td>
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<tr>
<td></td>
<td>General Surgical</td>
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<td></td>
<td>Geriatrician</td>
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<td></td>
<td>Internal medicine</td>
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<td></td>
<td>Ophthalmology</td>
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<td></td>
<td>Paediatrics</td>
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<td></td>
<td>Psychiatry</td>
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<tr>
<td>Community health</td>
<td>Aged care assessment</td>
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<tr>
<td></td>
<td>Alcohol, tobacco and other drugs service</td>
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<tr>
<td></td>
<td>Child health</td>
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<tr>
<td></td>
<td>Health promotion / prevention</td>
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<tr>
<td></td>
<td>Immunisation</td>
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<tr>
<td></td>
<td>Men’s health</td>
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<td></td>
<td>Parent craft</td>
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<tr>
<td></td>
<td>School health</td>
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<tr>
<td></td>
<td>Women’s health</td>
</tr>
</tbody>
</table>

Community services

General practice

There are three general practices in the Mareeba region that are listed in the national health services directory\textsuperscript{15}.

- Amaroo Medical Centre – six FTE GPs and five nurses
- Mulungu Aboriginal Corporation Primary Healthcare Service – three FTE GPs and one nurse
- Mareeba Medical Clinic – four FTE GPs and one nurse

Limited extended-hours general practice services are provided by Amaroo Medical Centre (Monday and Thursday evening) and Mareeba Medical Clinic (Tuesday evening). The balance of after-hours services is provided by the Emergency Department at Mareeba Hospital, and the Dial-a-Doctor after hours service.

The Mareeba region is not in an area of recognised GP workforce shortage according to official data (shaded in blue) for Northern Queensland (Figure 8)\textsuperscript{16}. However, stakeholders consulted for this review assert Mareeba is an area of GP workforce shortage.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure8.png}
\caption{Areas of general practitioner workforce shortage, Northern Queensland, 2017}
\end{figure}

\textsuperscript{15} NQPHN CRM. Accessed 3 November 2017
\textsuperscript{16} HealthDirect Australia. GP workforce shortage.
Allied health

Allied health services are provided by a mix of public and private sector providers (Table 4).

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audiology</td>
<td>Australian Hearing Services</td>
</tr>
<tr>
<td>Chiropractic</td>
<td>Chiropractic Works Mareeba</td>
</tr>
<tr>
<td></td>
<td>Far Northern Chiropractic</td>
</tr>
<tr>
<td></td>
<td>Dr Kerry Hawkes</td>
</tr>
<tr>
<td></td>
<td>Care Chiropractic</td>
</tr>
<tr>
<td>Dental</td>
<td>My Mareeba Dentist</td>
</tr>
<tr>
<td></td>
<td>Mareeba Dental Centre</td>
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<tr>
<td></td>
<td>Gentle Dentist Mareeba</td>
</tr>
<tr>
<td></td>
<td>Distinctive Dental</td>
</tr>
<tr>
<td></td>
<td>Mareeba Hospital Dental Clinic</td>
</tr>
<tr>
<td>Diabetes Educator</td>
<td>Holistic Health Services (visiting)</td>
</tr>
<tr>
<td>Dietitian</td>
<td>Dorothy Dietitian (visiting)</td>
</tr>
<tr>
<td></td>
<td>Health Management</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>Mareeba Hospital</td>
</tr>
<tr>
<td>Optometry</td>
<td>Tableland Optical</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Mareeba Discount Drug Store</td>
</tr>
<tr>
<td></td>
<td>Priceline Pharmacy Mareeba</td>
</tr>
<tr>
<td></td>
<td>Mareeba Hospital Pharmacy</td>
</tr>
<tr>
<td>After hours pharmacy (for PBS prescriptions)</td>
<td>Mareeba Discount Drug Store (Weekdays to 7pm and Saturdays to 4pm)</td>
</tr>
<tr>
<td></td>
<td>Priceline Pharmacy Mareeba (Weekend 8.30 to 12.30)</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>Tableland Physiotherapy</td>
</tr>
<tr>
<td></td>
<td>Mareeba Physiotherapy Centre</td>
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<tr>
<td></td>
<td>Cairns Total Physio</td>
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<td></td>
<td>Performance Physio Mareeba</td>
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<tr>
<td></td>
<td>Sarah Jackson Physio</td>
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<tr>
<td></td>
<td>Blue Care Tablelands</td>
</tr>
<tr>
<td></td>
<td>Community Care</td>
</tr>
<tr>
<td>Podiatry</td>
<td>Amaroo Medical</td>
</tr>
<tr>
<td></td>
<td>Jeffrey Dowdle Podiatry</td>
</tr>
<tr>
<td></td>
<td>David Britt Podiatry (visiting)</td>
</tr>
<tr>
<td></td>
<td>Finn Podiatry (visiting)</td>
</tr>
<tr>
<td>Psychology</td>
<td>Northern Life Psychology</td>
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<tr>
<td></td>
<td>Sharpe Psychology</td>
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<tr>
<td></td>
<td>Pat Woodcock Psychology</td>
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<tr>
<td></td>
<td>Talking Therapies</td>
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<td></td>
<td>Mindfulness Australia</td>
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<tr>
<td></td>
<td>ACT Psychology</td>
</tr>
<tr>
<td>Social work</td>
<td>Mareeba Hospital Social Work</td>
</tr>
</tbody>
</table>

Aged care

Aged care services provide care for Australians aged 65 years or over who require assistance. Aged care services are an important resource for delivering health and social care to older people with chronic disease and disability. In the Mareeba region there are four aged care services and 80 aged care services operational places (as at 30 June 2016).
Improving care for chronic conditions and reducing preventable hospitalisations in Mareeba

Chronic medical conditions are responsible for over 80 per cent of the overall burden of disease and injury in Australia. Chronic diseases, particularly diabetes, cardiovascular disease and cancer, contribute to higher rates of premature death in rural communities and very high rates amongst Aboriginal and Torres Strait islander peoples.

Available data demonstrate the Mareeba community has a large and growing chronic disease burden. The Mareeba community has a:

- Growing population with low socio-economic status, high unemployment, low incomes, high Indigenous population and a high median age of the population;
- High cancer, cardiovascular disease, respiratory disease and injury mortality rate;
- High mental health disease burden;
- High rates of potentially preventable hospitalisations; and
- High use of the hospital emergency department to manage general practice-type health complaints.

Evidence-based strategies to improve care for chronic conditions and reduce preventable hospitalisations

People with chronic conditions experience worse health outcomes and are more likely to need hospitalisation when there is:

- Poorer access to primary health care;
- Higher costs of primary health care for the consumer;
- Lower ratios of GPs to population;
- Increasing socioeconomic disadvantage; and
- Greater remoteness.

The prevention and management of chronic conditions requires a multidisciplinary and coordinated approach, in which general practice plays a key role in care delivery. Chronic conditions such as asthma, diabetes, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), hypertension and angina can be largely managed in general practice, reducing rates of condition-specific hospitalisations.

The general practice management of chronic conditions can be improved through team-based approaches to delivering care. These approaches form part of the chronic care model (CCM) which according to Wagner et al consists of 6 core elements: self management support, delivery system design, decision support, clinical information system, health care organisation and community resources.

Other policy and program-specific interventions have been identified in the literature that may improve chronic conditions management. However, these programs only improve outcomes when the patient has affordable, accessible primary health care (Table 5).

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17 Described earlier in this report
21 Ibid
22 Ibid
### Table 5: Initiatives to improve chronic conditions management

<table>
<thead>
<tr>
<th>Policy/Program</th>
<th>Target population</th>
<th>Key features of the program or policy</th>
<th>Evaluation findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Chronic Care Program</td>
<td>General population with chronic disease (and their carers)</td>
<td>Patient-centred approach to service delivery Build patient self-management capacity Focus on timely access to care Promote health service integration for patient continuity of care Develop systems to promote long-term management of care.</td>
<td>As a proportion of all NSW admissions, data showed: Heart failure admissions were significantly lower for October, November and December in 2004 than for the same months in 2003. COPD admissions were significantly lower in November and December 2004 than for the same months in 2003, though in May and October there were significant differences in the opposite direction.</td>
</tr>
<tr>
<td>NSW Community Acute Post-Acute Care (CAPAC) Service35</td>
<td>General population with selected acute and chronic conditions</td>
<td>Multidisciplinary clinical care to people in the community to manage their condition at home and prevent deterioration Clinical care to patients who have had an operation and can be discharged early to recover at home rather than in hospital. It is generally only for the short term (5-14 days). “Hospital in the Home” Initiative.</td>
<td>Approximately 45 000 patients per annum were treated through the CAPAC program at half the cost of inpatient treatment. For some medical conditions, length of stay was reduced for an average of 2 days. In a metropolitan Sydney hospital with an established CAPAC program, 30% of cellulitis presentations to the ED were seen by the CAPAC service, avoiding admissions to hospital which equated to 741 bed days saved. For acute complex respiratory conditions, admissions reduced from 4 per annum to less than 1 per annum. Length of stay reduced from 6.9 days to 4.2 days.</td>
</tr>
<tr>
<td>Victoria: Hospital Admission Risk Program Chronic Disease Management (HARP CDM)</td>
<td>People with chronic heart disease, chronic respiratory disease, diabetes, complex psychosocial needs and older people with complex needs</td>
<td>HARP was implemented through a series of competitively funded community and hospital based projects and comprises a range of prevention initiatives that have the potential to affect hospital emergency demand. These include: Comprehensive assessment and individualised care planning Comprehensive transition and discharge planning Secondary preventive care Ongoing monitoring and review Specialist medical and GP management Self-management advice Other specialist and allied services where needed. After-hours support Multidisciplinary team care Carer involvement</td>
<td>Overall HARP has resulted in: 35% fewer ED attendances 52% fewer ED admissions 41% fewer days in hospital The reduced need for hospital services was equivalent to approximately one ED attendance, 2 ED admissions, and 6 days spent in hospital each year for every HARP patient. HARP patients with multimorbiditý experienced: 49% fewer ED attendances 61% fewer ED fewer emergency admissions 57% fewer days in hospital. There was no difference in the pattern of ongoing hospital use (presentations, admissions and number of nights spent in hospital) for both HARP and non-HARP patients with CHF.</td>
</tr>
</tbody>
</table>
Primary care services for chronic conditions in Mareeba

People want more local general practice services

Mareeba community members who participated in this consultation and who access local general practice services overwhelmingly reported that the quality of care they receive from their general practices is high. Participants described general practice services that are comprehensive, team based and focussed on patient goals and wishes.

However, some community members report that they do not have affordable, accessible primary health care available locally.

- In some cases, people were unable to find a local GP because the practice had ‘closed their books’.
- Others reported that general practice costs and wait times are both significant barriers to receiving primary health care in Mareeba.

Private Mareeba GPs do not uniformly bulk bill pension and health care card holders (or any other patient group). As a result, the out of pocket costs associated with visiting the doctor are a deterrent to some Mareeba residents going to the GP.

Long waiting times to get an appointment with a GP can also be problematic for some Mareeba residents (two to three weeks on average according to some community members).

A lack of affordable, accessible general practice care for some Mareeba community members results in:

- some Mareeba residents with chronic diseases reporting they try to avoid or minimise going to the GP because of the cost;
- other Mareeba residents reporting they travel to Cairns to see a bulk billing GP;
- a group of Mareeba residents not having a GP at all – they go to the hospital for their primary care because the hospital does not charge them for their services.

Allied health services in Mareeba generally affordable and accessible

In contrast, Mareeba residents reported allied health services were generally accessible and affordable. Most people who were consulted reported they could see an allied health professional at low or no cost, and usually with waiting times that were not considered to be excessive. However, more specialised areas of allied health practice, particularly child psychology and child speech pathology services, were reported to be less accessible than more commonly used services (such as diabetes educators, dietitians, podiatrists and optometrists).

General practice services are delivered through the Mareeba Hospital

General practice in Australia is essentially a private sector enterprise.

In Mareeba there is currently a private general practice provider delivering general practice services at the Mareeba Hospital. This service is supported by public hospital staff and resources. This arrangement is anticipated to continue until June 2018

There are quality and service system issues associated with the current arrangement:

- As the hospital has shared reception and emergency department waiting areas, general practice-type and acute hospital-type patients co-mingle. This exposes patients with potentially serious acute health problems (e.g. immunosuppression) to increased risk (e.g. multiple patients with infectious diseases).
- Public hospital staff and resources support the delivery of these general practice-type services. These resources are diverted away from caring for patients with more acute health needs.
- This arrangement is problematic as public sector provision of general practice services undermines growth and adaptation of the private service system to meet the needs of consumers.

24 Although outside the scope of this review, many Mareeba residents expressed fear or uncertainty regarding closure or ‘downgrading’ of the Mareeba Hospital. Residents were concerned the Queensland Government intended to either close the hospital or reduce the delivery of services there. As a result, some Mareeba residents reported they use the hospital for GP care because they believe if they don’t support the hospital by using it for GP services it will be ‘downgraded’ or closed. In contrast, consultations with some Mareeba Hospital employees indicated the hospital is not ‘under threat’ and there are no intentions to close the hospital. They reported that fiscal constraints of government meant some services had been reduced, however this was viewed as no different to any other hospital in Queensland or Australia-wide, and that efficiencies are being sought in all public hospitals. Importantly, hospital stakeholders reported that the misuse of the hospital by the community for GP-type presentations wastes valuable hospital resources that could be used to care for patients who are acutely unwell. If these presentations could instead occur in general practice, hospital resources could be freed up.
This can be observed in Mareeba, where there are currently no bulk-billing general practices operating within the private market. In contrast, the Cairns community (less than one hour from Mareeba) has multiple bulk-billing general practices that can be accessed.

The Mareeba community is potentially very attractive to new general practices, as the community has:

- a growing population;
- an ageing population;
- a large number of patients with general practice-type presentations to the Mareeba Hospital who could alternatively be treated in private general practice; and
- little local competition, with only two established mainstream general practices.

Ideally, public sector provision of general practice services occurs only where there is demonstrated market failure. This is not the case in Mareeba, where the market has not been tested to see if additional general practices can be attracted to the Mareeba community.

Some Mareeba residents raised specific issues regarding the current general practice service arrangement at the Mareeba Hospital. Issues that were raised include:

- A perceived lack of transparency in how the private provider was appointed;
- A perception that the appointment process did not enable new general practice providers the opportunity to enter the Mareeba market;
- Concerns that patients of the two other general practices in Mareeba were being encouraged to transfer their care to the company providing the hospital-based service;
- Concerns that when the clinic is transferred to the provider’s main premises after June 2018 that the service will become less accessible due to transport issues for some patients.

This creates tension within the Mareeba community. Some Mareeba residents that were consulted want a bulk-billing general practice to operate at the Mareeba Hospital. A larger group of community members who were consulted preferred accessible general practice services to be located in the central business area of Mareeba. Mareeba residents were generally unsupportive of general practice services being located further out of town as a lack of public and private transport limits access for some community members.

**Recommendations**

That the Australian Government funding provided to the Mareeba community is used to increase local availability and accessibility of bulk-billed general practice services, particularly for pensioners and health care card holders.

That NQPHN administers a transparent, competitive tender process that encourages general practice market growth in Mareeba.

That, to support a market-based system of delivery of general practice services in Mareeba, the Mareeba Hospital (Cairns HHHS) does not directly compete with private providers in the delivery of general practice services in Mareeba.

More health and wellbeing programs are needed in priority areas

Mareeba community members highlighted the need for additional programs and services in the priority areas of mental health, alcohol and other drugs, youth health and men’s health.

People who were consulted reported very high quality mental health services were available clinically but there is a lack of peer-based mental health supports for Mareeba residents. This consultation identified Mareeba residents (both Aboriginal and non-Indigenous) who expressed a willingness and desire to provide peer support in mental health, but that there is no or limited access to peer-based training and professional development, and limited availability of oversight and support for peer-based workers by specialist mental health professionals.

Mareeba residents reported a high alcohol and other drugs disease burden within the community. Residents perceive this is worsening over time. There is currently no designated alcohol and other drugs health worker position funded at Mulungu Health Service. Again, the consultation identified Mareeba community members who would like to receive alcohol and other drugs health worker training. These people but were unaware of how to access this training, or whether a funded position exists for employment at the end of training.
A range of youth health needs were identified by Mareeba residents. These include:

- Child psychology and speech therapy care needs;
- Addiction programs and services for youth;
- Dental care for young people with shorter waiting times;
- Reproductive health care for young girls (including greater access to free depot contraception to reduce unwanted teenage pregnancy);
- Social and emotional wellbeing programs and activities for young people, focussing on culture, arts and sports.

Men’s health is reported to be a priority, both within the Aboriginal and Torres Strait Islander community and in the non-Indigenous community in Mareeba. Mareeba residents described unmet demand for more health promotion, social and emotional wellbeing, risk factor management and chronic disease programs for Mareeba men. Mulungu Health Service have developed a comprehensive men’s health strategy to respond to the health and wellbeing needs of their male clients. This strategy is currently unfunded.

Recommendations

That the Australian Government funding provided to the Mareeba community is used by NQPHN to administer a local community grants program that supports increased access to mental health, alcohol and other drugs, youth health and men’s health programs and services, including through any newly established bulk billing general practice services.

Local health providers require access to more training and professional development

Training and professional development needs already described above include:

- Peer-based mental health training; and
- Alcohol and other drugs workforce development.

In addition, Mareeba residents and local providers identified a range of other training and professional development opportunities that could benefit the community.

- Cultural competence training across all programs and services was identified. This includes responding to the cultural care needs of Aboriginal and Torres Strait Islander peoples in Mareeba who access mainstream services, and the high proportion of European community members in Mareeba.
- Professional development for practice nurses (e.g. fitness industry certification to lead group rehabilitation for COPD / heart failure).
- Training for practice nurses in the management of chronic conditions (COPD, diabetes, heart failure, asthma).
- Professional development for practice administrative staff to deliver clinic support services (e.g. set-up for minor procedures).
- General practice provider support in chronic disease management systems and Medicare.

Recommendations

That the Australian Government funding provided to the Mareeba community is used by NQPHN to support the delivery of training and professional development in priority areas, including mental health (including peer training), alcohol and other drugs, chronic conditions and cultural aspects of care.
Improving after-hours care in Mareeba

The Australian Government Department of Health (DoH) identifies the provision of after-hours services as an area of key importance for improvement in the health system.

In Australia, the after-hours period is defined as:

- Sociable after-hours period – 6 pm to 11 pm weeknights
- Unsociable after-hours period – 11 pm to 8 am weekdays, before 8 am and after 12 noon Saturdays, all day Sundays and Public Holidays.

After-hours primary care is intended for urgent primary care treatment that cannot wait until regular hours, not for 24/7 access for non-urgent cases. The Mareeba community has access to emergency department (ED) services for patients with time-critical care needs. Some people in Mareeba use the ED for 24/7 access to primary care that is not urgent i.e. the person should have waited until regular hours for their care.

The non-emergency use of the ED is a problem. The main function of an emergency department, or ED, is to treat patients who are suffering from an acute serious illness or injury that would lead to severe complications if not treated quickly.

The non-emergency use of the ED is a problem for many reasons:

- It contributes to delays in emergency care for the patients whose care needs really are an emergency;
- It causes overcrowding in the ED, which means staff are unable to treat all patients in an adequate manner, causing inadequate patient care which leads to poorer patient outcomes.
- It is a waste of acute hospital resources. When acute hospital resources (staff time, supplies, medications) are spent on treating people with minor care needs it means these resources are not available for those people who really do need hospital care.
- ED staff do not know how to deliver primary health care.

When a primary care provider sees a patient for an acute health care need they are also thinking about the person’s preventive and long-term care needs (e.g. whether their immunisations / PAP smears / prostate checks / cholesterol / blood pressure checks etc. are up to date). This is called opportunistic care and does not / should not happen in an ED as the ED is not designed to provide ongoing care, nor does it have the appropriate systems for recalls / reminders for patients with ongoing care needs.

In summary, the review identified a wide range of service models across Australia, including GP-centred models which utilise practice-based after-hours GP visits, Medical Deputising Services, co-located GP clinics in hospitals, nurse-led telephone triage models, and internet-supported triage models.

Challenges to effective after-hours service delivery that were identified in regional, rural and remote areas included poor transport access, lack of home visiting for some patient groups, poor access to allied services including pharmacy and mental health services, lack of or poor internet access and widespread health care workforce insufficiencies.

After-hours service models that were identified include:

- Practice-based services – GPs providing services to their patients within their practices.
- GP co-operatives – organisations that combine groups of GPs to provide after-hours care to patients within a specific area using a roster system, and may include home visits.
- Provision of GP services that are co-located with, or in close proximity to, a hospital.
- Medical Deputising Services (MDS) – companies that directly supply medical practitioners on contract to practices to cover the after-hours period.
- Telephone Triage and Advice Services – funded telephone services staffed by trained personnel who use a triage protocol to assess callers and direct them to appropriate pathways of care (such as self-care, a GP appointment during regular hours, an after-hours GP).
- Web-based services that provide online access to reliable online health care information.
- Urgent medical attention provided 24 hours a day to remote and very remote communities including retrievals and transfers to major tertiary hospitals (Royal Flying Doctor Service).

Key principles common across the options are:

- Services are flexible, responsive and tailored to regional circumstance;
- Efficient and effective use is made of the broader health workforce;
- Innovative service delivery is promoted;

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25 Australian Government Department of Human Services 2015
• Data is used to inform policy change; and
• Communication with patients and providers is key to success.

After-hours service use in Mareeba
The two current providers of after-hours services in the Mareeba region are the Mareeba Hospital and Dial-a-Doctor. In addition, the two private billing medical practices provided extended hours clinic hours. Amaroo provides an extended hours clinic Monday and Thursday evenings and Mareeba Medical Clinic provides extended hours Tuesday evenings. Neither clinic accepts walk-in patients during extended hours sessions.

The Mareeba Hospital provides after hours services to patients who present to the emergency department at the hospital.

Statistics show that not all Mareeba residents are using the hospital emergency department correctly, with many people presenting each year with non-emergency health concerns. This can mean that the emergency department and their staff are not able operate to their full potential, and may put seriously ill patients at risk.

The Australasian Triage Scale defines five categories into which emergency department patients can be placed. Categories 1 and 2 relate to the most serious of illnesses and injuries. Patients given a category 1 rating are those currently experiencing life-threatening illnesses or injuries that require immediate attention, including conditions like requiring resuscitation, haemorrhages, severe burns or anaphylaxis. Category 2 patients require very urgent attention, and may be seriously ill or injured. Category 3 relates to patients with serious illness or injury who are in a stable condition.

Category 4 is for patients who are not in immediate danger or severe stress. Patients who have presented with a non-emergency health concern are classified as category 5. Patient with category 4 or 5 are those who may have been better treated by general practice, not by a hospital.

In the 2016/17 financial year there were 18,924 Category 4 and 5 emergency department presentations. The top 20 reasons for category 4 and 5 presentations are presented in Table 6. This table shows that, for the top 20 reasons for presentation, only one reason for presentation may have been an appropriate use of the hospital (highlighted in bold in Table 6). All other reasons for presentation are usually managed in general practice.

The top 20 reasons for presentation account for 47% of all category 4 and 5 presentations (8,956 episodes of care).

Table 6: Top 20 reasons for Mareeba Hospital ED presentation, 2015-16

<table>
<thead>
<tr>
<th>Reason for treatment</th>
<th>Number</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURGICAL DRESSINGS AND SUTURES</td>
<td>3,097</td>
<td>16%</td>
</tr>
<tr>
<td>BLOOD COLLECTION</td>
<td>1,092</td>
<td>6%</td>
</tr>
<tr>
<td>UPPER RESPIRATORY TRACT INFECTION</td>
<td>495</td>
<td>3%</td>
</tr>
<tr>
<td>VIRAL INFECTION</td>
<td>461</td>
<td>2%</td>
</tr>
<tr>
<td>MEDICAL ADVICE ON MEDICATION</td>
<td>387</td>
<td>2%</td>
</tr>
<tr>
<td>DID NOT WAIT</td>
<td>359</td>
<td>2%</td>
</tr>
<tr>
<td>CELLULITIS - LOWER LIMB</td>
<td>293</td>
<td>2%</td>
</tr>
<tr>
<td>ADMINISTRATION OF MEDICATION</td>
<td>278</td>
<td>1%</td>
</tr>
<tr>
<td>SCHEDULED FOLLOW UP EXAM</td>
<td>271</td>
<td>1%</td>
</tr>
<tr>
<td>ISSUE OF REPEAT PRESCRIPTION</td>
<td>254</td>
<td>1%</td>
</tr>
<tr>
<td>SUTURE REMOVAL</td>
<td>244</td>
<td>1%</td>
</tr>
<tr>
<td>IMMUNIZATION</td>
<td>232</td>
<td>1%</td>
</tr>
<tr>
<td>URINARY TRACT INFECTION</td>
<td>231</td>
<td>1%</td>
</tr>
<tr>
<td>TONSILLITIS</td>
<td>201</td>
<td>1%</td>
</tr>
<tr>
<td>ISSUE OF MEDICAL CERTIFICATE</td>
<td>194</td>
<td>1%</td>
</tr>
<tr>
<td>IMPETIGO (SCHOOL SORES)</td>
<td>193</td>
<td>1%</td>
</tr>
<tr>
<td>OTITIS MEDIA</td>
<td>187</td>
<td>1%</td>
</tr>
<tr>
<td>OTITIS EXTERNA</td>
<td>173</td>
<td>1%</td>
</tr>
<tr>
<td>ANKLE SPRAIN / STRAIN</td>
<td>160</td>
<td>1%</td>
</tr>
<tr>
<td>GASTROENTERITIS</td>
<td>154</td>
<td>1%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8,956</td>
<td>47%</td>
</tr>
</tbody>
</table>

Dial-a-Doctor provides an average of 95 occasions of service a month in the Mareeba community (Table 7).

Table 7: Dial-a-Doctor occasions of service, May to November 2017
Options to improve after-hours service delivery in Mareeba

The Mareeba Hospital Emergency Department currently sees a minimum of 340 patients a month with GP-type presentations whereas the Dial-a-Doctor service sees 95 patients per month on average.

Mareeba residents and clinicians consulted as part of this review report that:
- The Dial-a-Doctor has the capacity to attend more patients and accept higher clinical caseloads than is currently the case
- The quality of the Dial-a-Doctor service is high, with little waiting time to see the doctor. Patient satisfaction is high. The service is bulk billed.
- Over two thirds of Mareeba residents that were consulted had not heard of the Dial-a-Doctor service.

The majority of Mareeba residents indicated they would be willing to use the Dial-a-Doctor service for urgent but not severe medical problems after-hours.

However, Aboriginal and Torres Strait Islander peoples in Mareeba indicated they would not be willing to use the service as it comes to their home. Instead, these Mareeba residents indicated they may use the service if an Aboriginal Health Worker was on call and could either be present during the consultation or could take them to a clinic space for the consultation (instead of the consultation occurring at home).

There is currently no mechanism to successfully triage patients between the Mareeba Hospital ED and the Dial-a-Doctor service. Local Aboriginal service providers who participated in the review reported that an on-call health worker may enable Aboriginal and Torres Strait Islander peoples to have better access to after-hours care. They were generally supportive of trialling this type of role and felt the workforce had the capacity to meet this need if resourced and supported to do so.

Recommendations

That, where appropriate, triage category 4 and 5 patients are actively supported to seek after-hours care delivered by general practice rather than the Mareeba Hospital Emergency Department.

That a social marketing campaign is implemented to promote the use of hospital resources for hospital patients, and to promote the Dial-a-Doctor service.

That a trial to support the delivery of after-hours care to Aboriginal and Torres Strait Islander peoples through an on-call Aboriginal Health Worker role is resourced and supported.
In November 2017 KP Health consulted with the Mareeba community to identify issues affecting delivery of care for people with chronic health conditions.

Community members identified multiple barriers to the delivery of high quality chronic care, including difficulty accessing services due to cost (for private services) and waiting times (for public services) and fragmentation of services, characterised by poor coordination of care for patients with complex care needs and limited communication or information sharing between providers.

This follow-up rapid review has been conducted to identify factors that promote integration between service providers, with a particular focus on rural communities.

Methods

We reviewed academic literature and grey literature to find studies, reviews and reports on systems and processes to promote the integration of services and providers across acute and community care boundaries.

A search of relevant academic literature published between 1995 and November 2017 was conducted in the Cochrane library and Medline using the following key words: systems integration [MeSH]; delivery of health care, integrated [MeSH]; ‘integrated care’; ‘barriers to integration’; ‘health system integration’. The reference lists of identified articles were scanned for any additional relevant publications that were not identified through the review.

A ‘grey literature’ search was also conducted using the same search terms as the academic literature using Google® and Google Scholar®.

Below we describe definitions of integrated care, features of integrated systems and process for reorientation of systems towards greater integration of health care from the patient perspective.

Definitions and key concepts described in the literature

Integrated care can be defined as “a coherent and coordinated set of services which are planned, managed and delivered to individual service users across a range of organisations and by a range of cooperating professionals and informal carers”.

There are different dimensions of integration in health care. Fulop (2005) describes:

1. Organisational integration (how an organisation is formally structured);
2. Functional integration (how non-clinical support and back office functions are integrated);
3. Service integration (how clinical services that are offered by the organisation are integrated with one another); and
4. Clinical integration (at the clinical team level how the clinical care of patients is integrated into a single process).

In addition, integration can be understood according to the mechanics of how it is achieved.

1. Integration can be horizontal (bringing together organisations and providers that are on the same level of delivery of health care or have the same status) or vertical (brings together organisations or individuals at different levels of a hierarchy).
2. Integration can be virtual (services share information and ideas electronically) or face-to-face.
3. The degree of integration can vary from ‘linkage’ (e.g. increasing the knowledge and awareness of providers within the health system about others who may be involved in the patient’s care) to ‘fully integrated’ (e.g. boundaries between providers and services are not visible from the patient’s perspective).

Organisational, functional and service integration can be broadly grouped together as integration of health services and systems. In contrast, clinical integration can be considered as integration at the individual patient level.

Footnotes:

The World Health Organization (WHO) describes integration primarily as a health services concept, and defines it as “a concept bringing together inputs, delivery, management and organisation of services related to diagnosis, treatment, care, rehabilitation and health promotion”[30]. Similarly, from a US perspective Shortell refers to an integrated delivery system as “a network of organizations that provides or arranges to provide a coordinated continuum of services to a defined population and is willing to be held clinically and fiscally accountable for the outcomes and the health status of the population served”[31].

Although dimensions and types of integration differ, the overarching aims of integrated care are to reduce discontinuity, duplication and absence of responsibility for the whole continuum of care to achieve improved outcomes for a target population.

Sources of poor integration

Multiple challenges inherent in integrated working have been identified in the literature, particularly in bringing together different systems of care, treatment and support to achieve integrated care at the patient level. These include[32]:

- difficulties bringing together the different cultures of different professional disciplines;
- a lack of joined up policies, protocols and pathways at national, local and within-facility levels;
- no clinical champions advocating for greater integration of care for patients;
- few staff available at the operational level to manage the process of change required to achieve greater integration; and
- poor commitment and support at the executive level within organisations to achieving greater integrated care.

‘Fragmentation’ is used in the literature as a synonym for poor integration at the health systems level. Sources of fragmentation in health systems can be broadly described as ‘physical’ or ‘structural’.

Physical fragmentation is highly prevalent in Australia due to its geographically dispersed population, the majority of whom reside in cities. Population dispersion contributes to inefficient use of infrastructure, poorly standardised delivery models, a lack of workforce availability for some elements of care and increased cost of delivering evidence-based care at the per person level due to poor economies of scale[33].

Structural fragmentation results from a lack of clear governance for who is accountable for the delivery of high quality service and funding models that increase duplication and efficiency of service delivery have resulted in blurred lines of responsibility and accountability in the delivery of healthcare in Australia[34 35]. This is exacerbated by the public-private divide in the delivery of health care. Australia’s public-private system is complex and convoluted, without a clear organisation or set of organising principles. Specialist private services may target high return services such as short-term surgical cases, with complex and chronic cases and the delivery of sub-acute and community services left to the public system. For the patient who accesses public and private services, duplication and inefficiency are increased by a lack of systems to integrate care across boundaries[36].

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The rationale for integration at the individual patient level

At the individual patient level many people, particularly older people and those with multiple chronic conditions, have health needs that require the efforts of multiple health care professionals and multiple health care organisations. “Integrated care” in this context requires the total needs of patients to be addressed, not only on the services provided by one professional or health care organisation. It is required when the services of separate and individual professionals do not cover all of the demands of clients.37

The increasing number of older people and those with chronic illnesses necessitates a shift in focus from acute to chronic care. Earlier and greater involvement of general practice, community providers and home care enables clients to benefit from a more holistic approach to the delivery of care that is less characterised by separate treatments and approaches for each disease or need. It also enables care to be delivered closer to the patient’s home.38

The rationale for integration at the health systems level

Health systems face numerous challenges in ensuring their local communities have sustained access to safe, high quality and cost-effective healthcare. These challenges include a growing population with a higher median age, multiple and chronic conditions, rapid increases in the costs of delivery of care and consumers with higher knowledge and expectations of services. Coupled with workforce shortages and resource constraints, health systems are under growing pressure to improve functioning and performance.39

Increasingly, health policy makers are looking towards the strengthening of health system integration as a means of responding to these issues of cost and demand. Underlying the push for integration is the belief that the bringing together of inputs, delivery, management and organisation of services will improve access, efficiency, quality and user satisfaction.40

The current state of integrated care

The need to ensure the most effective configuration of health services is a priority within many health services nationally and internationally.

An integrated focus on the patient increases the need for interaction between specialists and generalists and has stimulated the existence of new professional roles, including case managers, nurse practitioners and care coordinators\textsuperscript{41}.

The boundaries between the settings within which care is delivered are also blurring. Providers who traditionally have limited their role to the community are crossing the ‘boundary’ to attend acute care settings when required and vice versa\textsuperscript{42}.

The characteristics of health care organisations are also changing over time. Health care organisations are increasingly ‘integrating vertically’, and are offering multiple complementary services including housing, community care, home care and social care in addition to their traditional acute care roles\textsuperscript{43}.

In the literature there is growing evidence that integrated care improves clinical outcomes and organisational outcomes, but the evidence that integration reduces the costs of care is more mixed. In some cases integration has been shown to deliver efficiencies in care. In other cases, clinical outcomes, quality of life, patient satisfaction and effectiveness have improved but the effects on costs have been neutral\textsuperscript{44,45}.

**Essential elements of integrated care**

Though widely recognised as important for improving patient outcomes, the implementation of integrated care has proven to be a difficult task. Although a considerable body of research has investigated methods for realising, improving, innovating and sustaining integrated care, the studies are specific to settings and patient groups and their generalisability is limited\textsuperscript{46}.

Literature reviews on integrated care that the most common activities that health services introduce in order to achieve greater integration of care are\textsuperscript{47,48}:
- routine reporting and feedback loops;
- evidence-based guidelines;
- collaborative practice models;
- process and outcome measurement;
- self-management support;
- clinical follow-up;
- case management;
- multidisciplinary care teams; and
- care pathways.

These reviews also identify certain enablers of successful integration, including:
- supportive clinical information systems;
- agreement between personnel involved on the nature of the integration;
- leaders with a clear vision of integrated care;
- finances for implementation and maintenance;
- management commitment and support;
- patients capable of and motivated for self-management; and
- a culture of quality improvement.

Overall, multiple activities implemented simultaneously appear to be required to successfully improve integration. There is no consensus about which activities are the most important to implement. However, case management appears to be of great importance and as an intervention is cited as an essential element for improved integration, especially for patients with multiple complex problems who require care for extended periods.

The literature demonstrates variability in the understanding of case management, or care coordination, across health providers. For many, case management is what they provide as part of their usual practice and is viewed a ‘good practice’ in their clinical area. For others, case management is a specialised area of practice that requires additional knowledge and skills to be performed effectively.

\textsuperscript{41} Rodriguez L. The determinants of successful collaboration. Journal of Inter-Professional Care 2005; 1: 132-47.
\textsuperscript{43} Ibid
\textsuperscript{44} Kodner D. All together now: a conceptual exploration of integrated care. Health Quarterly 2009; 13: (special issue).
\textsuperscript{45} Shortell S. What does the evidence tell us? In Ham C (Ed). Integrating Care and Transforming Services. University of Birmingham, Health Services management Centre, Policy Paper 2009
Additional sources of variation in understanding about case management include:

- who should receive case management - views regarding which patients require case management and would benefit most from it vary between providers;
- which provider should provide the case management - different providers have different views about the most appropriate professional to deliver case management and / or to coordinate the patient’s care;
- what the extent and timing of case management elements should be (including care planning, review and transfer of cases) - reviewing care packages is regarded as central to the case management process. However, there is ambiguity between providers regarding the timescales within which each element of the case management process should be undertaken, including when reviews should be performed and when transfer of cases is most appropriate.

At a procedural level, if case management is included as an activity to achieve integration of care at the patient level, clarity and consistency of case management is required.

### Improving vertical integration - the US experience

The US has a long history of vertical integration focussing on hospitals. The research points to some successful systems within Health Maintenance Organisations (HMOs) in the US. Success in integration was achieved when:

- the integrated system was focused around a well-established multidisciplinary team;
- plenty of time was allowed to develop a coherent culture;
- when located within a rural area there was less pressure from competitors; and
- an accumulation of managed care experience resulted from a well-established health plan.

Importantly, attempts at integration were less successful when the drivers of integrated care were:

- to lock in referrals and increase bargaining power (a factor of limited generalisability to the Australian health system); and
- to achieve greater economies of scope and scale rather than to achieve improve quality of service from the patient’s perspective.

In response, many HMOs acquired primary care and community providers in order to achieve greater organisational integration. A number made significant financial losses due to:

- high acquisition costs;
- inappropriate choice of which primary and community provider was ‘change ready’ for integration;
- a lack of productivity of some health care professionals;
- organisations not sharing the same goals for integration; and
- cultural differences both within and across boundaries of care.

### Improving health systems integration at the whole of system level - the UK experience

Integration of care and services is an area of considerable reform activity in many health services nationally and internationally, particularly within the US and UK health system.

The UK’s National Health Service (NHS) has embarked upon a whole of system program of activity specifically intended to improve integration within and across health services. Key elements of NHS integration reforms are therefore described here.

The NHS has specific goals oriented towards improved integration of health services. The 2010 White Paper *Liberating the NHS* was clear that the achievement of integrated care in the UK required health and social care services to be better integrated at all levels of the system. As a result, an expanded role for councils and local democracy in the NHS was at the heart of the White Paper’s vision for services which:

- puts patients and local communities at the heart of decisions about health service delivery ("no decision about me without me");
- reorients whole of system performance monitoring towards outcomes for patients rather than on measurement of narrow processes;
- increases local democratic participation in health decisions with a new role for Local Government in joining up health, social care and public health services and a lead role in health improvement; and
- enables general practitioners to have a role in commissioning local services for their patients.

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51 Department of Health. Liberating the NHS. 2010, 3.11.
A subsequent White Paper entitled *Local Democratic Legitimacy in Health* (2010) proposed local authorities would have greater responsibility in health in four areas:

- leading joint strategic needs assessments to ensure coherent and co-ordinated commissioning;
- providing people with a local voice;
- establishing health and wellbeing boards to give ‘positional power’ to consumers to mandate specific actions from local NHS and social care services; and
- lead local health improvement and prevention activity.

The successful exercise of these new roles and responsibilities depended on whether sufficient powers and other resources were available to local authorities. A legislative framework was developed to empower local authorities to adopt these health system roles. These were supported by:

- improving ‘patient as fund holder’ budget mechanisms to facilitate greater joint assessment and care planning;
- systematically developing quality standards across patient pathways, for example, the National Institute for Health and Clinical Excellence (NICE) dementia standard;
- promoting the Care Quality Commission as an effective inspectorate of quality standards across health and social care;
- introducing payment systems to support joint working across boundaries of care in priority areas, for example, to reduce hospital readmissions; and
- supporting innovation in service delivery.

Recent reviews of the peer-reviewed literature commissioned by local government authorities in the UK identified the following ten principles of successful systems integration from available evidence:

1. There is no single silver bullet for successful integration. The search for single causes has tended to lead to over simplistic solutions dealing with limited aspects and levels of the inter-dependencies between providers across service boundaries.

2. Definitions and understandings of integration (and related terms) vary widely and create confusion about the purpose and focus of joint working. The purpose of integration efforts should be clear. In particular, distinguishing between strategies to integrate care at the health system and the individual patient level is important to ensure the desired outcomes of integration are achieved.

3. Integration is primarily required to secure better outcomes for people and places. Integration should not be treated as an end in itself. Rather the measure of success of integration efforts should be on the patient outcomes that can be achieved.

4. Integration must be multi-levelled because organisations and their purposes are multi-levelled. Mechanisms for horizontal integration are needed at each organisational level (for example, whole systems, community and individual levels) but vertical mechanisms are also necessary to integrate the various levels. A core complexity in securing improved integration is synchronising the operation of vertical and horizontal arrangements so that end-users can access the “right” services at the “right” time from the “right” person and in the “right” place.

5. Services need to be built around the needs of end users rather than around the skills of providers and / or the structures of organisations.

6. As the barriers to integration are systemic in organisations designed for separation rather than integration, the historic paradigms of building bridges and tearing down walls is inherently flawed and of limited effectiveness. A better metaphor is one of weaving integration into the fabric of organisational life. It accepts the inevitability of separate structures built on services and professions but treats them as the warp of integration across which person and place-centred systems and processes must be woven.

7. Effective personal relationships based on continuity, trust and mutual confidence are important for integration. Reorganisations tend to break up such relationships and they can only be rebuilt over time.

8. Accountability mechanisms can strengthen or undermine integrated care and integrated governance but effective horizontal relationships tend to be in tension with the strengthening of vertical accountability. Organisations that are separately accountable will tend to produce separate outcomes unless each accountability system is carefully aligned around their respective roles in collectively producing specified outcomes. The proper balance between vertical and horizontal partnerships and accountabilities is critical but complex.

9. Responsibility for initiating, supporting and progressing local horizontal mechanisms should be situated in a single organisation to ensure it does not fall between potential partners.

10. Sophisticated national and local leadership is called for to understand these lessons from past experience, develop them into a coherent framework and operate it as an interlocking whole.

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Strategies to improve integration in rural and remote areas

Strategies to address poor integration can be tailored to the setting within which health care is delivered. In rural areas physical fragmentation is currently addressed in a number of ways, include53:

- incentivising general practitioners to provide care in rural areas;
- shifting from discrete general practitioner services to different integrated models using a mix of health providers with multiple funding sources as remoteness increases and population size decreases;
- the use of virtual outreach (telehealth) by primary and community health providers to prevent patient transfer into secondary and / or tertiary services and to provide expert support to secondary / tertiary providers informing them about the capability of the community / primary provider to receive the patient and deliver ongoing care; and
- creating network-type outreach structures comprising hub and spoke models with central hubs in metropolitan areas or major regional centres and health professionals visiting regional spokes in person or virtually or alternatively, with patients being re-located into the hubs.

Time-responsive patient transport systems are required to successfully deliver these innovations.

Strategies to counter structural fragmentation are based on ensuring strong governance, with lines of accountability and responsibility for patient outcomes clearly defined, and by establishing and building relationships between parties involved in the delivery of care, particularly patients and their families and caregivers. These strategies are not specific to rural areas. Examples that counter structural fragmentation include co-location of public and private services or providers, with sharing of some services to obtain economies of scale, and awarding contracts to private providers to provide bundles of services for public hospitals54. Within primary care, multi-purpose services (MPS) are cited as an example that counters boundary spanning. MPSs provide a flexible array of services to rural and remote communities which are too small to support separate hospital, residential aged care and other community health services55.

Some of the best examples of improved integration have occurred under conditions of relative resource constraint. For example within rural and remote areas of Australia, reduced access and poorer health outcomes for many of its residents have been the impetus to develop integrated and comprehensive primary health services in order to maximise the economies of scale and use of the existing health workforce.

Further, in rural areas a lack of competition and limited resource means that service providers may be more prepared to share knowledge, skills and competencies with each other across traditional professional boundaries, and across funding streams as in remote areas there are fewer distinct specialties amongst and between professions; providers are fewer in number, more generalist in work, and hence less divided56.

A range of strategies have been identified that improve integration at the individual patient level. Empirical evidence supports improved integration through adopting a holistic, chronic disease approach to care planning that includes clinical, functional and social assessment and management rather than an acute, episodic approach to planning.

In the NHS Primary Care Strategy Framework Caring for People, nurse-led models of integrated care streamline home care and treatment processes. This is achieved by avoiding unnecessary hospital admission, streamlining the patient journey through the health and social care system, facilitating earlier discharge from hospital and maximising the potential of primary care professionals in contributing to the management of patients in the community.

A variety of nurse-led strategies can be implemented:

- Emergency nurses assessing and discharging their own patients from emergency departments;
- Community nursing teams receiving referrals whilst the patient is still in hospital – the community nursing discharge coordinator visits the wards on a daily basis to coordinate the patient’s discharge to district nursing;
- Nurses from multi-disciplinary community teams (e.g. respiratory, palliative care) provide specialist care to the patient regardless of their location i.e. whilst in hospital and when they have returned home;
- Community Parkinson’s disease nurses co-lead Parkinson’s outpatient clinics at the local hospital - the nurse reviews all patients first to review all aspects of care and provide specialist advice on symptom control, medication management, community providers that should be involved in the patient’s care and coping strategies for living with their illness. The patient is then reviewed by the neurologist;
- Participation of community nurses in hospital-based multidisciplinary team meetings and ‘huddles’ on wards where geriatric unit discharges are discussed;
- Community nurses providing reablement assessment and management that facilitates early discharge from hospital or prevents admission to hospital for frail older people. Nurses provide a comprehensive reablement assessment and community rehabilitation program for a maximum of 6 weeks. Nurses work closely with rehabilitation allied health professionals who are also community based and receive referrals from acute providers;
- Community nursing intermediate care team of specially trained community nurses who provide acute care to patients in their own home (8.30am to 11pm seven days) and work in partnership with GPs. Types of treatment include managing infections, providing intravenous or subcutaneous fluids, administering IV antibiotics and blood products, managing palliative care patients after 5pm, managing feeding tubes, providing acute nursing care for emergency bowel conditions and managing acute wounds;
- Acute care at home team who work in the emergency department to facilitate discharge of patients from the emergency department directly to community nursing teams able to provide high acuity care in the person’s home e.g. intravenous therapies, dressings, patient monitoring and observation (including using telehealth to supplement monitoring and improve safety);
- Establishment of specialist Chronic Disease Management nurse specialist roles to provide seamless care for patients with multiple chronic conditions across the primary and secondary boundaries. Through in-reach patients are identified for follow-up within the community and care is transferred to the corresponding community provider. Inpatient nurses use a Patients At Risk of Rehospitalisation (PARR) case finding tool to identify patients who would benefit from assessment and ongoing management;
- Community nursing ‘Patient Expeditor’ role who meets daily with discharge coordinators to discuss cases suitable for discharge to community nursing. The community nurse draws up a patient treatment plan in conjunction with hospital staff and clinical handover to the community nursing team occurs. If required, the acute team provide training and support to the community nurses receiving the patient for any procedures they are unfamiliar with;
- Community nurses provide follow-up telephone call to all patients post elective surgery 48 hours after their discharge. Following a protocol, a selected cohort of higher risk patients also receive a phone call at four weeks after discharge. Patients experiencing problems are scheduled for community nursing review in the first instance or return to hospital if required and outside the scope of the community nursing role.

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68 Rooney S. Nurse led discharge and in-reach. April 2006.
69 Ibid
Canada has also adopted a number of the above strategies. In addition, Community Care Access Centres (CACCs) are being trialled in Canada. These are government-funded groups of hospital clinicians, community nurses, case managers, technology providers and patients who are exploring ways to keep older people with multiple chronic conditions out of hospital. CACCs systematically pull clients back into the community as soon as possible. The CACC engages the patient within 24 to 48 hours of admission and commences addressing barriers to discharge. The CACC uses information technology alerts to systematically identify patients who are likely to benefit from the service i.e. somebody who is 75 or older with at least two or more risk factors, including a history or evidence of cognitive impairment, difficulty walking, a recent history of falls, has visited the ED within the last 30 days, lives alone, or has no available care giver. The information technology system downloads patient information every 15 minutes and creates an alert to the CACC nurse if a patient meeting these criteria is identified. The nurse can then telephone or visit the provider to discuss the patient and identify if they may be a suitable CACC client.

Professional development to support integration models

There is limited information available in the public domain that describes the educational requirements for integration models. Descriptions of training programs that are available generally describe a requirement for skills development for personnel to increase their capacity to provide higher acuity integrated care. However, the specific training requirements depend on the specific characteristics of the integrated care model the community wants to implement.

### Skills development

- Case management / care coordination
- Developing integrated care pathways
- Risk assessment
- Specialist training in deteriorating chronic diseases
- Foot care
- Eye care
- Dental hygiene
- Nurse prescribing
- IV/SC administration
- IV Cannulation
- Gastrostomy training
- Catheterisation (suprapubic, male and female)
- Medication reconciliation
- Palliative care/end of life care

### Development of skills in generalist providers

- Case finding
- Health needs assessment
- Care planning
- Independent nurse prescribing
- Delivery of “A&E at home”
- Acute nurse outreach to aged care / GP clinics

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Appendix 2: Consultation log

Table 1: Organisations that participated

<table>
<thead>
<tr>
<th>Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save the Mareeba Hospital Group</td>
</tr>
<tr>
<td>Amaroo Medical</td>
</tr>
<tr>
<td>Mareeba Medical Clinic</td>
</tr>
<tr>
<td>Mulungu Aboriginal Corporation Medical Centre</td>
</tr>
<tr>
<td>Dial-a-Doctor</td>
</tr>
<tr>
<td>Mareeba Hospital</td>
</tr>
<tr>
<td>Cairns and Hinterland Health and Hospital Service</td>
</tr>
</tbody>
</table>

Table 2: Designated organisational primary health representatives that participated*

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical practitioners</td>
<td>5</td>
</tr>
<tr>
<td>Dentists</td>
<td>1</td>
</tr>
<tr>
<td>Psychologists</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes Educators</td>
<td>1</td>
</tr>
<tr>
<td>Practice nurses</td>
<td>2</td>
</tr>
<tr>
<td>Other nurses</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>1</td>
</tr>
</tbody>
</table>

Additional primary health care providers participated in the consultation as individuals rather than as organisational primary health representatives per se. These included:
- Doctors attending palliative care and cardiology educational events in Mareeba at the time the consultations were taking place;
- Senior Medical Officers from Mareeba Hospital;
- Nursing staff from Mareeba and Atherton hospitals;
- Social work, psychology, chiropractic, pharmacy and physiotherapy providers delivering services in Mareeba who opportunistically provided feedback at consumer feedback sessions held in Mareeba CBD.

These providers are counted in the 174 consumers rather than the 13 designated health professionals described above.

Feedback and information were also specifically sought from consumers who were Aboriginal and / or Torres Strait Islander peoples and people from culturally and linguistically diverse backgrounds (particularly family and / or carers of people from Western and Eastern European backgrounds who spoke little or no English).

KP Health acknowledge the support of Mulungu Aboriginal Corporation Medical Centre and particularly the Mulungu Mens Health group who provided input into the needs assessment.

* NOTE: Participation by primary health stakeholders and organisations should not be inferred to represent endorsement of the recommendations in this report.