

# Chronic disease and infection: potentially preventable hospitalisations

### At a glance

Almost half (47%) of the potentially preventable hospitalisations in Australia in 2014–15 were due to the five conditions examined in this chapter: chronic obstructive pulmonary disease (COPD), heart failure, cellulitis, kidney infections and urinary tract infections (UTIs), and diabetes complications.<sup>1</sup> Substantial variation was observed between Statistical Area Level 3 (SA3) areas in the rates of hospitalisation for each condition. Variation was greatest for COPD (16-fold difference), diabetes complications and cellulitis (approximately 12-fold difference for both). Rates of hospitalisation for heart failure and UTIs varied seven-fold and six-fold, respectively.

The high hospitalisation rates and substantial variation reported for the chronic diseases in this chapter show that recommended care is not always provided for people with these conditions. Even with the significant funding provided through Medicare to better coordinate primary care for people with complex chronic disease, fragmented health services contribute to suboptimal management.<sup>2</sup> Likely contributors to variation include a higher proportion in some areas of patients with the most complex chronic disease, for whom hospitalisation may be inevitable. Poor access to health services in the community is also related to higher rates of potentially

preventable hospitalisations.<sup>3</sup> Ability to access health services is determined not only by clinician supply, but also by costs, transport, cultural factors and sufficient health literacy to know when to consult health providers.<sup>3</sup> For all the conditions examined in this chapter, hospitalisation rates were higher among Aboriginal and Torres Strait Islander Australians, people living in areas of relative socioeconomic disadvantaged, and those living in remote areas.

A fundamental component of system changes to reduce potentially preventable hospitalisations must be a shift to a better integrated primary care system, with a stronger focus on coordinating care.<sup>2</sup> Critically, health systems also need to become better at managing disease where it already exists, to reduce the progression of chronic disease, minimise negative impacts and improve patients' quality of life.

Patients live with their chronic disease all day, every day. They have to be put at the centre of prevention and management, particularly in primary care.<sup>4</sup> The implementation of a Health Care Home model will greatly improve appropriateness and coordination of care for patients with multiple chronic and complex conditions.<sup>2</sup>

### Recommendations

- 1a. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to follow the following principles in developing chronic disease management programs, as described in the report of the Primary Health Care Advisory Group Better Outcomes for People with Chronic and Complex Health Conditions and consistent with the National Strategic Framework for Chronic Conditions:
  - i. Voluntary patient enrolment with a practice or healthcare provider to provide a clinical 'home base' for coordination of, management of, and ongoing support for, the patient's care
  - ii. Patients, families and carers as partners in care, where patients are activated to maximise their knowledge, skills and confidence to manage their health, aided by technology and with the support of a healthcare team
  - A risk stratification approach that supports identification of patients with high coordination and multiple provider needs, to ensure personalisation of service provision
  - iv. Enhanced access by patients to care provided by their Health Care Home; this may include in-hours support by telephone, email or videoconferencing, and effective access to after-hours advice or care
  - v. Nomination by patients of a preferred clinician, who is aware of their problems, priorities and wishes, and is responsible for their care coordination
  - vi. Flexible service delivery and team-based care that supports integrated patient care across the continuum of the health system through shared information and care planning
  - vii. A commitment to care that is of high quality and safe, including care planning and clinical decisions that are guided by evidence-based patient healthcare pathways, appropriate to the patient's needs

viii. Data collection and sharing by patients and their healthcare teams to measure patient health outcomes and improve performance.

Many patients will recognise features of the Health Care Home in their existing general practices.

#### Chronic obstructive pulmonary disease

- 1b. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to promote appropriate care for the management of people with chronic obstructive pulmonary disease (COPD) using:
  - i. The COPD-X Plan: Australian and New Zealand Guidelines for the Management of Chronic Obstructive Pulmonary Disease 2016 as the routine model of care
  - Targeted anti-smoking programs in populations with high smoking rates, including areas with a high proportion of the population who are Aboriginal and Torres Strait Islander Australians, rural and remote areas, and areas of socioeconomic disadvantage.
- 1c. State and territory health departments to develop culturally appropriate pulmonary rehabilitation programs for Aboriginal and Torres Strait Islander Australians with COPD.

#### Heart failure

- 1d. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement process improvement for the effective management of people with heart failure, including:
  - i. Multidisciplinary care across the acute and primary care sectors
  - A combination of strategies, including non-pharmacological approaches such as physical activity programs and fluid or dietary management, and pharmacotherapy.

#### Diabetes

- Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to promote appropriate care for the management of people with diabetes using:
  - i. The guidelines *General Practice Management* of *Type 2 Diabetes 2016–18* as the routine model of care
  - ii. The Australian National Diabetes Strategy 2016–2020 to ensure the provision of integrated models of care
  - iii. Performance management frameworks to assess compliance of care with relevant diabetes treatment guidelines.

# All conditions associated with potentially preventable hospitalisations

- 1f. The Commission, in collaboration with Aboriginal and Torres Strait Islander Australians and relevant organisations, to produce resources for addressing health literacy.
- 1g. State and territory health departments, in collaboration with Aboriginal and Torres Strait Islander Australians, and Australian Government health agencies, to continue to invest in whole-of-government approaches for addressing the social determinants of health for Aboriginal and Torres Strait Islander Australians, people in areas of socioeconomic disadvantage, and people living in outer regional and remote areas.
- 1h. State and territory health departments to investigate funding and pricing strategies within the activity-based funding framework to promote appropriate care for people with conditions associated with potentially preventable hospitalisations, with a particular focus on potentially avoidable hospital readmissions.

- Australian, and state and territory health departments to develop appropriate service specifications, evidence-based education and training, and other tools to enable providers, patients, practice managers and the broader healthcare sector to engage with chronic disease management programs, such as Health Care Homes.
- 1j. Primary Health Networks to use HealthPathways, where practicable, to improve the coordination of care across providers for chronic conditions.

### Background

This chapter includes information about potentially preventable hospitalisations for:

- Chronic obstructive pulmonary disease (COPD)
- Heart failure
- Cellulitis
- Kidney and urinary infections (UTIs)
- Diabetes complications.

Timely and adequate health care in the community will prevent some conditions worsening to the point where hospitalisation is necessary, or prevent the condition occurring in the first place. Hospitalisations for such conditions are classified as potentially preventable hospitalisations. Some potentially preventable hospitalisations are due to worsening of chronic conditions. For example, if diabetes is not well managed, patients risk developing diabetic foot disease. In the most severe cases, this can lead to hospitalisation and amputation of the affected toes, foot or lower leg. Other potentially preventable hospitalisations are due to worsening of acute conditions, such as cellulitis, and infections of the kidney and urinary tract. Some potentially preventable hospitalisations could have been prevented by vaccination.

Classifying a hospitalisation as 'potentially preventable' does not mean that the patient did not need to be hospitalised at that time – it means that optimal management at an earlier stage might have prevented the patient's condition worsening to the point where they needed hospitalisation.

Together, the five conditions examined in this chapter accounted for 47% of the 634,300 hospitalisations in the potentially preventable hospitalisations indicator in Australia in 2014–15.<sup>1</sup> The National Health Performance Authority reported geographic variation in potentially preventable hospitalisations in 2015, and the combined rate of these five conditions was shown to vary nine-fold between SA3 areas.<sup>5</sup> National, and state and territory data on potentially preventable hospitalisations are also reported regularly to promote change towards more appropriate care – for example, by the Australian Institute of Health and Welfare, the Productivity Commission, and state and territory governments. This report builds on the previous analyses by providing further commentary and by examining variation by smaller geographical areas (SA3).

#### About the potentially preventable hospitalisations indicator

The rate of selected potentially preventable hospitalisations is a health system performance indicator of accessibility and effectiveness in the Australian National Healthcare Agreement, and a measure of the effectiveness, appropriateness and efficiency of the health system in the Aboriginal and Torres Strait Islander Health Performance Framework.<sup>6,7</sup> A potentially preventable hospitalisation is described as 'admission to hospital for a condition where the hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management usually delivered in primary care and community-based care settings (including by general practitioners, medical specialists, dentists, nurses and allied health professionals)'.8

The indicator includes 22 conditions, which accounted for 634,300 hospitalisations and 6.2% of all hospital separations in Australia in 2014–15.<sup>1</sup> The conditions are grouped into chronic, acute and vaccine-preventable conditions.

The rate of potentially preventable hospitalisations was first developed as a health system indicator in the United States in the late 1980s; other countries currently using the indicator include New Zealand, Canada and the United Kingdom.<sup>9</sup> Few other indicators examine variation in the performance of health care in the community, and this indicator provides some guidance on which

conditions or populations should be prioritised for policy responses. However, the indicator has some limitations:

- Not all hospitalisations included in the indicator could have been prevented. For example, hospitalisations will be appropriate for some chronically ill or elderly patients even with optimal care in the community
- Hospitals, as well as community-based services, influence rates of potentially preventable hospitalisation, because factors such as whether beds are available and how far patients live from hospital affect decisions about whether to admit patients
- Potentially preventable hospitalisations are influenced by factors that are not easily addressed by health policymakers, such as socioeconomic disadvantage<sup>10</sup>
- Emergency department presentations and outpatient services are not included
- Variation in admission practices and policies may lead to variation among providers in the number of hospitalisations for conditions.

These factors should be taken into account when interpreting and responding to variation in potentially preventable hospitalisations.

For more information, see the *Guide to Potentially Preventable Hospitalisations*, available at www.safetyandquality.gov.au from mid-2017.<sup>9</sup>

# Influences on potentially preventable hospitalisation rates

Rates of potentially preventable hospitalisations reflect a range of health system and population characteristics. These influences can result in variation in the rate of these hospitalisations, as well as patients' length of stay and readmission rates.

Effective management of chronic conditions requires multidisciplinary, coordinated care.<sup>4</sup> The team of clinicians providing care may include general practitioners, medical specialists, dentists, nurses and allied health professionals. Although some patients are fortunate enough to receive this type of care, the current Australian health system does not provide the ideal supports for integrated team care.<sup>2</sup> Health services are often fragmented, with poor communication between providers, and between community and hospital services.<sup>4</sup> Many other health systems around the world also face the challenge of reorienting their services to cope with the rise of chronic diseases, and the direction of health policy internationally is to increase coordination and integration of health services.<sup>4</sup>

Half of the Australian population has at least one chronic disease, and 29% of people aged 65 years and over have three or more chronic diseases.<sup>11</sup> Chronic diseases are not evenly distributed; the prevalence is higher among certain groups, including Aboriginal and Torres Strait Islander Australians, people who live in socioeconomically disadvantaged areas, and people who live outside major cities.<sup>11</sup> The severity and complexity of chronic disease vary, as does the intensity of care patients require.

Approximately 1% of the population have highly complex health needs arising from multiple chronic diseases, and many in this group will need frequent care in an acute setting or home-based palliative care.<sup>2</sup> In Australia in 2012–13, people who saw a general practitioner 12 times or more accounted for almost 60% of people admitted to hospital four or more times that year, according to survey responses.<sup>12</sup> Approximately 85% of these patients had chronic disease, and many are likely to be in this first tier of patients with the highest needs.<sup>12</sup> A second tier of patients with multiple chronic diseases have more moderate health service needs, and account for approximately 9% of the population. This group can be managed effectively in the community with increased access to primary and specialist care, and appropriate support, or in aged care homes.<sup>2</sup>

A third tier of patients with multiple chronic diseases are largely self-managing, and account for approximately 10% of the population.<sup>2</sup> This group could still gain significant benefits from structured support.<sup>2</sup> Targeting the intensity of health services for people with multiple chronic diseases according to these levels of need has the potential to improve patient outcomes and the efficiency of the health system.<sup>2</sup>

Many studies have found that higher rates of potentially preventable hospitalisations correlate with a lack of access to primary care. Access to high-quality health care in the community is not only related to supply of clinicians.<sup>3</sup> Time and financial costs, language and cultural aspects, and the quality of clinician-patient interactions contribute to the accessibility of care.<sup>13</sup> Recent Australian research, using person-level data from a large New South Wales cohort, found that the supply of general practitioners alone explained only a small proportion of geographic variation in potentially preventable hospitalisations (except for conditions in the vaccinepreventable category), and that socioeconomic and demographic factors had a much greater influence.<sup>10</sup> Risk factors for potentially preventable hospitalisations included older age; being an Aboriginal or Torres Strait Islander Australian; and having male gender, more comorbidities, socioeconomic disadvantage and fewer positive health behaviours.<sup>10</sup> This highlights the complex means by which potentially preventable hospitalisations may reflect 'access to care'.9

In some circumstances, better access to primary care increases hospitalisations. For example, increased access to primary care among a group of patients with chronic diseases and complex health needs increased their rate of hospitalisations in a study in the United States.<sup>14</sup> This may have been due to better recognition of health problems and consequent treatment, because the participants' satisfaction with their care also increased.<sup>14</sup>

Aboriginal and Torres Strait Islander Australians have higher rates of potentially preventable hospitalisations than non-Indigenous Australians.<sup>15</sup> The reasons are complex, but socioeconomic disadvantage, high prevalence of risk factors for chronic disease such as smoking and obesity, and a lack of health services that provide culturally appropriate care play a part.<sup>16,17</sup> Higher rates of potentially preventable hospitalisations among Aboriginal and Torres Strait Islander Australians may also reflect gaps in the provision of population health interventions, and the need to strengthen services to detect and treat disease early, and improve chronic disease management.<sup>18</sup>

Many of the maps in this chapter show particularly high levels of potentially preventable hospitalisations in remote areas with a high proportion of Aboriginal and Torres Strait Islander residents. Remoteness and socioeconomic disadvantage disproportionately affect Aboriginal and Torres Strait Islander Australians. The contribution of each of these factors has not been separated in this analysis, but will be explored in the future to gain further insights. Some states and territories contain a substantially higher proportion of remote areas than others, and the associated challenges in providing health care in this context should be considered when interpreting the variation in rates of potentially preventable hospitalisations between states and territories.

A lack of community-based health services and long distances to travel contribute to the high admission rates for patients from remote and some regional areas. Anecdotally, a greater availability of beds in some small rural hospitals may also lead to a lower threshold for admitting patients. Services need to be redesigned to increase the availability of health care close to home for people living in non-metropolitan areas.

Socioeconomic disadvantage may contribute to hospitalisations in a range of ways, such as greater disease severity, multiple comorbidities and poor health literacy.<sup>19</sup> Individual health literacy is about a person's skills and abilities, and how these are applied to health and health care.<sup>20</sup> It covers a range of skills, behaviours and activities, such as reading about what foods are required for healthy eating, the motivation to participate in a cardiac rehabilitation support group, and the capacity to make an appointment to see a clinician.<sup>21</sup> Low individual health literacy is associated with increased rates of hospitalisation, poorer ability to demonstrate taking medications properly and poorer ability to interpret health messages.<sup>21</sup> The health literacy environment includes the infrastructure, policies, processes, materials, cultural and linguistic competence, people and relationships of the health system.21,22

Increasing patients' health literacy and ability to self-manage is a vital component of any strategy to reduce potentially preventable hospitalisations due to chronic diseases. Changing the healthcare system to enable people with low health literacy to use it more effectively also has great potential for reducing hospitalisations – for example, by making the system easier to navigate and health information easier to understand.<sup>21</sup>

Rates of potentially preventable hospitalisations may also be influenced by readmissions to hospital. Any readmissions that meet the criteria for the relevant potentially preventable hospitalisation are included in the data here; they could not be counted separately without data linkage. High rates of readmissions can be due to suboptimal inpatient care, but may also reflect inevitable deterioration of chronic conditions.<sup>3</sup> Premature discharge and inadequate information to allow patients to self-manage after discharge also contribute to preventable readmissions.<sup>3</sup> Length of stay for potentially preventable hospitalisations varies widely across Australia. For example, the percentage of potentially preventable hospitalisations that were same-day varied from 23% to 41% between Australian Primary Health Networks in 2013–14.<sup>5</sup> Length of stay can reflect the severity of the patient's illness, as well as the quality and efficiency of their hospital care. Shorter length of stay is often considered more efficient, but stays that are too short may result in poorer outcomes and increased risk of readmission.<sup>23-25</sup>

Long-term interventions may be able to address the social determinants of health. In the short term, better care in the community is needed to reduce potentially preventable hospitalisations – particularly among Aboriginal and Torres Strait Islander Australians, people living in rural and remote areas, and people with socioeconomic disadvantage.

#### **Health Care Homes**

The high rates of hospitalisation and very high rates of variation for the potentially preventable hospitalisations reported in this chapter demonstrate that recommended care is not always provided to people with complex chronic disease. Improvements in the design of delivery systems, team-based care and consumer self-management could increase the success of chronic disease management.<sup>4</sup>

Medicare provides significant funding to encourage better practice in the care of people with complex chronic disease. Funding is provided for the assessment, planning, coordination and review of services for chronic disease in acute care services and general practice. The Medicare Benefits Schedule includes a set of items for planning and coordinating health care for patients with chronic disease. The Australian Government has a number of grants and programs related to chronic disease, such as the Chronic Disease Prevention and Service Improvement Flexible Fund. Even with this significant funding to better coordinate primary care-based chronic disease management, treatment services remain fragmented. This contributes to inadequate management of patients with chronic and complex conditions.<sup>2</sup>

Health policies aimed at improving management of patients with multiple chronic diseases include better coordination and integration of care, reducing the progression of chronic disease and reforming payment models.<sup>26</sup> The recent implementation in Australia of Health Care Homes for people with chronic diseases encompasses these principles and addresses many of the contributors to potentially preventable hospitalisations.

The Health Care Home model supports integrated and coordinated team care, and targets the most intensive health services to those with the greatest needs.<sup>27</sup> The model allows better sharing of information between patients and members of the health team using My Health Record. Evidence-based planning tools created for Health Care Homes, and bundled payments rather than fee-for-service, further support high-quality care. Trials of similar models in the United States have shown reductions in hospitalisations and reduced costs.<sup>28</sup> Potentially preventable hospitalisations are costly for the Australian health system; the estimated savings from reducing these hospitalisations from high to average rates in priority areas are \$10–15 million per year for Victoria and Queensland alone.29

# Other models of care to reduce potentially preventable hospitalisations

Increasing the availability of alternatives to hospital care, particularly in regional and remote areas, could reduce potentially preventable hospitalisations. A number of other innovative models of care in the community have shown reductions in potentially preventable hospitalisations, or improvements in the chronic conditions that contribute to them.<sup>16,30</sup> Many of these share common elements of outreach care and nurse-led coordination of care in the community. These models include<sup>16,30</sup>:

- Increased use of community nursing and hospital-in-the-home (HITH) services
- Multidisciplinary clinics for management of chronic disease
- Aged care emergency services led by nursing staff.

HITH supplies hospital-level care at home as a substitute for care in hospital. HITH care is administered by multidisciplinary teams who visit patients at least daily and deliver full care at home. A 2012 meta-analysis found that HITH treatment reduced mortality by 19% and readmissions by 2% compared with in-hospital treatment.<sup>31</sup> The improvements in outcomes may be due in part to a reduction in hospital-related adverse events.<sup>32</sup> Patient satisfaction with HITH is also high.<sup>31,33</sup>

A model of in-reach community nursing has also been trialled successfully in Australia. An in-reach nurse identifies hospital patients in the emergency department and acute wards who could be cared for in their home or a community clinic, and facilitates handover and future care coordination.<sup>34</sup>

Rapid-access clinics based in hospitals may be a useful option for patients who are deteriorating and cannot wait for a long time for specialist review but do not require emergency department care. Success of any novel health pathways depends on clear communication to general practitioners about how to access them and the eligibility criteria.

Telehealth is being used effectively in some parts of Australia.<sup>16</sup> However, this technology has the potential for much wider use to improve access to health care in regional and remote areas, and for people with mobility problems or young children.

Readmissions account for a substantial proportion of some potentially preventable hospitalisations. For example, 26% of COPD hospitalisations and 19% of diabetes hospitalisations in Queensland in 2012–13 were readmissions.<sup>29</sup> Strategies for reducing readmissions include case management by a specialist nurse.<sup>35</sup> Meta-analysis of this model showed that readmissions for heart failure at 12 months were almost halved compared with usual care (odds ratio, 0.55).<sup>35</sup> Other successful strategies to reduce readmission rates have included financial penalties for United States hospitals with high readmission rates.<sup>36</sup> Tailoring these models of care and other interventions for patients with the most complex needs – who are also often the costliest for the health system – is likely to produce the greatest reductions in potentially preventable hospitalisations.<sup>16</sup> Several of the conditions contributing to potentially preventable hospitalisations often exist as comorbidities – for example, COPD and heart failure.<sup>37</sup> Addressing common clusters of comorbidity in local areas within coordinated services will improve management for patients with complex needs. Restructuring Medicare item numbers and hospital services around common comorbidities could also better support patients with chronic diseases.<sup>37</sup>

#### Reducing potentially preventable hospitalisation rates among Aboriginal and Torres Strait Islander Australians

For Aboriginal and Torres Strait Islander Australians, availability of health services in urban and regional centres does not necessarily equate to accessibility.38 Services need to be not only affordable and physically accessible but also culturally safe. Aboriginal and Torres Strait Islander staff are key to engaging with Aboriginal and Torres Strait Islander patients, and a sufficient number of Aboriginal and Torres Strait Islander health workers is essential for service success. For Aboriginal and Torres Strait Islander Australians living in remote areas, physical distances compound the challenges in accessing health care. Remoteness also tends to reduce employment options, thereby contributing to socioeconomic disadvantage and poorer health outcomes.<sup>17</sup> Differences in rates of potentially preventable hospitalisations between Aboriginal and Torres Strait Islander and non-Indigenous Australians are highest in remote areas (a seven-fold difference).18

The Aboriginal and Torres Strait Islander Health Performance Framework reports include rates of potentially preventable hospitalisations. From July 2011 to June 2013, rates of potentially preventable hospitalisations were three times as high among Aboriginal and Torres Strait Islander Australians as among non-Indigenous Australians.<sup>18</sup> For several of the types of potentially preventable hospitalisations explored in this chapter, higher rates of the condition among Aboriginal and Torres Strait Islander Australians can be partly attributed to higher rates of smoking, poor diet and obesity.<sup>39</sup> Community-initiated programs can improve diet and increase physical activity, but the socioeconomic disadvantage in Aboriginal and Torres Strait Islander communities has been a barrier to sustaining these programs.<sup>40</sup> For example, food insecurity is associated with obesity, a major risk factor for type 2 diabetes.<sup>41,42</sup> A recent Victorian study found that the rate of food insecurity was 20% among Aboriginal and Torres Strait Islander Australians compared with 5% among other Australians.<sup>41</sup> Food insecurity was defined in the study as having run out of food and not being able to afford to buy more during the previous year.41

Public health approaches focusing on lifestyle risk factors at the expense of the social determinants of health can over-inflate the contribution that lifestyle risk factors make to poor health, and assume that the proximal factors in the causal chain are more amenable to change than they are.<sup>43</sup> Moreover, members of the Aboriginal and Torres Strait Islander community have expressed the view that traditional health promotion in the form of health education is disempowering and stigmatising because it conflates Aboriginal and Torres Strait Islander status with unhealthy behaviours, thus reinforcing racism, which creates and compounds health inequality.<sup>44</sup> This cycle needs to be acknowledged.

Lessons can be learnt from the implementation of a number of recent programs. Models of care are more likely to meet the needs of Aboriginal and Torres Strait Islander Australians if they are built on cultural safety, and designed in partnership with Aboriginal and Torres Strait Islander Australians. For example, one urban-based model of homebased case management by nurses for Aboriginal and Torres Strait Islander Australians with multiple chronic diseases uses a holistic view of health, addressing psychosocial factors as well as physical health. The model is designed to resonate with the Aboriginal and Torres Strait Islander perspective of interconnectedness of health with other aspects of wellbeing. It has been met with high levels of satisfaction from staff and patients, as well as significant improvements in blood pressure, glycated haemoglobin (HbA1c) levels and rates of depression.<sup>45</sup> However, no significant improvement was seen in hospitalisations in this exploratory study, possibly because of the short follow-up period.

Another model of out-of-hospital health care has produced encouraging reductions in hospitalisations among Aboriginal and Torres Strait Islander children in both urban and remote areas in Western Australia. The program, which was based on nurse-led coordination of care, created partnerships with Aboriginal Controlled Health Services, general practitioners, allied health professionals, specialist doctors and other community health workers. Care coordination included organising outreach care closer to home, travel, social support, telehealth services and combining appointments to minimise disruption.<sup>46</sup>

The role of the Aboriginal Health Liaison Officer has the potential to improve the cultural security of hospitals, and may also result in better discharge planning and liaison with care in the community.47 The National Safety and Quality Health Services Standards (second edition) includes a number of actions that focus specifically on providing care for Aboriginal and Torres Strait Islander Australians. These include strategies to improve the cultural competency and cultural awareness of the health workforce to meet the needs of Aboriginal and Torres Strait Islander patients, and health services working in partnership with Aboriginal and Torres Strait Islander Australians from local communities to meet their healthcare needs. Discharge against medical advice is a contributor to readmissions, and is significantly more common among Aboriginal and Torres Strait Islander patients, particularly in rural and remote areas.48 Several strategies have been suggested for reducing discharge against medical advice in Aboriginal and Torres Strait Islander patients, including more flexible community-care models to provide culturally appropriate care.49

The national Indigenous Chronic Disease Package improved access to chronic illness prevention and management for Aboriginal and Torres Strait Islander Australians through a range of strategies. The most successful of these were removing cost barriers to medicines, providing transport to appointments and improving cultural safety in general practices. However, the ability to perceive the need for health care and to seek it were identified as major barriers to accessing the program.<sup>50</sup> Improvements in these behaviours will partly rely on addressing social determinants of health among Aboriginal and Torres Strait Islander Australians – for example, through the Closing the Gap initiatives.<sup>39,50</sup>

Long-term investment and actions on many levels are needed to achieve lasting improvements in rates of potentially preventable hospitalisations among Aboriginal and Torres Strait Islander Australians. For example, continuous efforts and long-term investments are needed to reduce the high smoking rate among Aboriginal and Torres Strait Islander Australians.

# Smoking rates mirror the pattern of potentially preventable hospitalisations

Smoking is a contributor to most of the conditions analysed in this chapter.<sup>13,51</sup> Reducing smoking rates could substantially decrease the number of potentially preventable hospitalisations. Addressing the higher rates of smoking among Aboriginal and Torres Strait Islander Australians, people at socioeconomic disadvantage and people living in remote areas could help reduce the disparity in potentially preventable hospitalisations seen in these groups.<sup>52</sup>

Attention should also be paid to the underlying determinants of smoking. For example, psychological distress is a known determinant of smoking, and Aboriginal and Torres Strait Islander Australians have a significantly higher prevalence of psychological distress than other Australians.<sup>53,54</sup> Moreover, psychological distress has been shown to precede the onset of smoking and is associated with less success in quitting smoking.<sup>53,55</sup> Addressing the high levels of psychological distress among Aboriginal and Torres Strait Islander Australians is likely to simultaneously address the high prevalence of smoking and enable those who already smoke to quit.

Condition-specific interventions are also required to reduce potentially preventable hospitalisations; these are discussed later in the chapter.

### About the data

Hospital admission data are sourced from the National Hospital Morbidity Database, and include both public and private hospitals. Rates are based on the number of hospitalisations per 100,000 people. Because a record is included for each hospitalisation, rather than for each patient, patients hospitalised more than once in the financial year will be counted more than once.

The analysis and maps are based on the residential address of the patient and not the location of the hospital. Rates are age and sex standardised to allow comparison between populations with different age and sex structures.

Factors influencing population-based hospitalisation rates include incidence and prevalence of risk factors and disease, hospital admission practices, bed availability, and patient social factors such as the availability of carers, the availability of other treatment options, treatment compliance and travel distance. Data quality issues – for example, the recognition of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

Most states and territories in Australia have HITH programs, and hospitalisations involving HITH care are recorded in national hospital data. Because patients receiving HITH are, in principle, required to meet the same criteria as a patient admitted for in-hospital care, variation in admission practices could lead to variation in the number of hospitalisations involving HITH care.

### Australian initiatives

The information in this chapter will complement work already under way to address the rate of potentially preventable hospitalisations in Australia. This work includes strategies to prevent the development of conditions such as diabetes and COPD, and to optimise care in the community. At a national level, the work includes:

 Introduction of the Health Care Home model, in which eligible patients can enrol with a participating medical practice known as their Health Care Home, which will provide ongoing coordination, management and support

- The Indigenous Australians' Health Programme, which aims to provide Aboriginal and Torres Strait Islander Australians with access to effective, high-quality healthcare services through both Aboriginal Community Controlled Health Services, wherever possible and appropriate, and mainstream services delivering comprehensive, culturally safe primary health care
- The Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013–2023, which outlines strategies and actions to be taken to improve health outcomes for Aboriginal and Torres Strait Islander Australians; it will soon be updated to address social and cultural determinants of health
- The Cultural Respect Framework for Aboriginal and Torres Strait Islander Health 2016–2026 (Australian Health Ministers' Advisory Council)
- The National Strategic Framework for Chronic Conditions, which moves away from a disease-specific approach and provides high-level guidance to enable all levels of government and health professionals to develop future policy, strategies, actions and services to work towards delivery of a more effective and coordinated national response to chronic conditions and their risk factors. The framework addresses primary, secondary and tertiary prevention of chronic conditions, recognising that the prevention and management of many chronic conditions often have similar underlying principles. It better caters for shared health determinants, risk factors and multiple morbidities across a broad range of chronic conditions. The framework is expected to be publicly available in 2017
- The National Tobacco Strategy 2012–2018, a framework to reduce tobacco-related harm in Australia
- The Australian Chronic Disease Prevention Alliance – an alliance of five non-government health organisations working together on the primary prevention of chronic disease, with particular emphasis on the shared risk factors of poor nutrition, physical inactivity and obesity

- Medicare Benefits Schedule (MBS) items
  relating to chronic disease management an
  Australian Government initiative that helps general
  practitioners to manage the health care of people
  with chronic conditions. It makes MBS rebates
  available for those requiring multidisciplinary,
  team-based care from a general practitioner
  and at least two other healthcare providers
- The National Aboriginal and Torres Strait Islander Flexible Aged Care Program, which provides culturally appropriate aged care and respite services to support people with complex care needs
- The Commonwealth Home Support Programme, which is the entry level to aged care, and delivers small amounts of care and services to older people in their homes.

Many state and territory initiatives are also in place to reduce potentially preventable hospitalisations, including:

- Coordination of care programs for patients at risk of further hospitalisation – for example, the Complex Needs Coordination Team, Perth; the Hospital Admission Risk Program, Victoria; the Chronic Disease Management Program – Connecting Care in the Community, NSW Health; the Home and Community Care Program, a jointly funded initiative of the Australian and Western Australian governments; and HITH and Silver Chain in-home health and care services in several states
- Policies to optimise care in the community, such as Framework for Action on Diabetes and Diabetes Service Standards, Western Australia
- Health system reform that focuses on integrated service delivery, such as the Western Australian Health Reform Program and the Victorian Integrated Chronic Disease Management model

- Reporting of potentially preventable hospitalisation rates – for example, the NSW Clinical Excellence Commission reports rates by Local Health District
- Programs to improve chronic disease management for Aboriginal and Torres Strait Islander Australians, such as the New South Wales Walgan Tilly clinical services redesign program, and the Western Australian Aboriginal Health and Wellbeing Framework 2015–2030 (which also addresses prevention of chronic diseases)
- Healthy skin programs reducing skin infections reduces the risk of cellulitis
- Improvements in health-related housing condition – for example, Housing for Health, New South Wales
- Multidisciplinary diabetes clinics for example, Inala Chronic Disease Management Service, Queensland, and Perth tertiary hospitals
- Projects to reduce readmissions, such as Reducing Heart Failure Readmissions, funded by the Victorian Government and led by the Heart Foundation
- Chronic disease self-management programs for example, Black Swan Health, and 360 Health and Community, Western Australia
- Programs to support a healthy lifestyle, such as Active Measures through Arche Health, Western Australia, and Get Healthy, NSW Health.

### References

- Australian Institute of Health and Welfare. Admitted patient care 2014–15: Australian hospital statistics. Canberra: AIHW; 2016. (Health Services Series No. 68; Cat. No. HSE 172.)
- 2. Primary Health Care Advisory Group. Better outcomes for people with chronic and complex health conditions. Canberra: Australian Government Department of Health; 2016.
- З. Katterl R, Anikeeva O, Butler C, Brown L, Smith B, Bywood P. Potentially avoidable hospitalisations in Australia: causes for hospitalisations and primary heath care interventions. PHCRIS Policy Issue Review. Adelaide: Primary Health Care Research & Information Service; 2012.
- 4 Swerissen H, Duckett S, Wright J. Chronic failure in primary medical care. Melbourne: Grattan Institute; 2016.
- National Health Performance Authority. Healthy communities: potentially preventable hospitalisations in 2013-14. Sydney: NHPA; 2015.
- 6. Council of Australian Governments. Intergovernmental Agreement (IGA) on Federal Financial Relations: Schedule F - National Healthcare Agreement.
- Available at: http://www.federalfinancialrelations.gov.au/content/intergovernmental\_agreements/IGA\_federal\_financial\_relations\_aug11.pdf Australian Institute of Health and Welfare. Aboriginal and Torres Strait Islander Health Performance Framework 2014 report: detailed analysis. 7.
- Canberra: AIHW; 2015 (Cat. No. IHW 167). Available at: http://www.aihw.gov.au/publication-detail/?id=60129550779
- 8. Australian Institute of Health and Welfare. METEOR, National Healthcare Agreement: PI 18 - Selected potentially preventable hospitalisations. Canberra: AIHW; 2016. Available at: http://meteor.aihw.gov.au/content/index.phtml/itemId/598746
- Falster M, Jorm L. A guide to the potentially preventable hospitalisations indicator in Australia. Sydney: Centre for Big Data Research in Health, University 9 of New South Wales, in consultation with Australian Commission on Safety and Quality in Health Care, and Australian Institute of Health and Welfare; 2017. https://www.safetyandquality.gov.au/wp-content/uploads/2017/03/A-guide-to-the-potentially-preventable-hospitalisations-indicator-in-Australia.pdf
- 10. Falster MO, Jorm LR, Douglas KA, Blyth FM, Elliott RF, Leyland AH. Sociodemographic and health characteristics, rather than primary care supply, are major drivers of geographic variation in preventable hospitalizations in Australia. Med Care 2015;53(5):436-45. 11. Australian Institute of Health and Welfare. Australia's health 2016. Canberra: AIHW; 2016. (Australia's Health Series No. 15; Cat No. AUS 199.)
- 12. National Health Performance Authority. Healthy communities: frequent GP attenders and their use of health services in 2012–13. Sydney: NHPA; 2015.
- 13. Ansari Z, Laditka JN, Laditka SB. Access to health care and hospitalization for ambulatory care sensitive conditions. Med Care Res Rev 2006;63(6):719-41.
- Weinberger M, Oddone EZ, Henderson WG. Does increased access to primary care reduce hospital readmissions? N Engl J Med 1996;334(22):1441-7. 14.
- Harrold TC, Randall DA, Falster MO, Lujic S, Jorm LR. The contribution of geography to disparities in preventable hospitalisations between indigenous 15. and non-indigenous Australians. PLoS ONE 2014;9(5):e97892. Erny-Albrecht K, Oliver-Baxter J, Bywood P. Primary health care-based programmes targeting potentially avoidable hospitalisations in vulnerable groups
- 16. with chronic disease. PHCRIS Policy Issue Review. Adelaide: Primary Health Care Research & Information Service; 2016.
- Osborne K, Baum F, Brown L. What works? A review of actions addressing the social and economic determinants of Indigenous health. Issues Paper No. 17. 7, produced for the Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare, and Australian Institute of Family Studies; 2013.
- 18. Australian Health Ministers' Advisory Council. Aboriginal and Torres Strait Islander Health Performance Framework 2014 report. Canberra: AHMAC; 2015. 19. Roos LL, Walld R, Uhanova J, Bond R. Physician visits, hospitalizations, and socioeconomic status: ambulatory care sensitive conditions in a
- Canadian setting. Health Serv Res 2005;40(4):1167-85. 20. Sorensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: a systematic review and integration
- of definitions and models. BMC Public Health 2012;12:80. Australian Commission on Safety and Quality in Health Care. Health literacy: taking action to improve safety and quality. Sydney: ACSQHC; 2014. 21. Lowell A, Schmitt D, Ah Chin W, Connors C. Provider health literacy, cultural and communication competence: towards an integrated approach in 22.
- the Northern Territory. Darwin: NT Health; 2014. Available from: http://digitallibrary.health.nt.gov.au/prodjspui
- 23. Kossovsky MP, Sarasin FP, Chopard P, Louis-Simonet M, Sigaud P, Perneger TV, et al. Relationship between hospital length of stay and quality of care in patients with congestive heart failure. Qual Saf Health Care 2002;11(3):219-23.
- Southern WN, Arnsten JH. Increased risk of mortality among patients cared for by physicians with short length-of-stay tendencies. J Gen Intern Med 24. 2015;30(6):712-8.
- 25. Kociol RD, Lopes RD, Clare R, Thomas L, Mehta RH, Kaul P, et al. International variation in and factors associated with hospital readmission after myocardial infarction. JAMA 2012;307(1):66-74.
- 26. Organisation for Economic Co-operation and Development. Health reform: meeting the challenge of ageing and multiple morbidities. Paris: OECD Publishing; 2011.
- Australian Government Department of Health. Health Care Homes information booklet. Canberra: Department of Health; 2016. 27.
- Fields D, Leshen E, Patel K. Analysis & commentary. Driving guality gains and cost savings through adoption of medical homes. 28.
- Health Aff (Millwood) 2010;29(5):819-26.
- 29. Duckett S, Griffiths K. Perils of place: identifying hotspots of health inequalities. Melbourne: Grattan Institute; 2016.
- Hullick C, Conway J, Higgins I, Hewitt J, Dilworth S, Holliday E, et al. Emergency department transfers and hospital admissions from residential aged 30. care facilities: a controlled pre-post design study. BMC Geriatr 2016;16:102.
- Caplan GA, Sulaiman NS, Mangin DA, Aimonino Ricauda N, Wilson AD, Barclay L. A meta-analysis of 'hospital in the home'. Med J Aust 2012;197(9):512-9. 31 Caplan GA, Coconis J, Board N, Savers A, Woods J. Does home treatment affect delirium? A randomised controlled trial of rehabilitation of elderly and 32.
- care at home or usual treatment (the REACH-OUT trial). Age Ageing 2006;35(1):53–60. Montalto M. The 500-bed hospital that isn't there: the Victorian Department of Health review of the Hospital in the Home program. 33.
- Med J Aust 2010:193(10):598-601. 34. Shaw K, Woodhouse P, Russell L. Community nurse in-reach pilot project: service model development and evaluation. A report prepared for the Australian Primary Health Care Research Institute by KP Health (Aus) Pty Ltd and Menzies Research Institute Tasmania, University of Tasmania. Canberra: APHCRI: 2015.
- Takeda A, Taylor SJ, Taylor RS, Khan F, Krum H, Underwood M. Clinical service organisation for heart failure. Cochrane Database Syst Rev 35 2012(9):CD002752
- Zuckerman RB, Sheingold SH, Orav EJ, Ruhter J, Epstein AM. Readmissions, observation, and the Hospital Readmissions Reduction Program. 36. N Engl J Med 2016:374:1543-51.
- 37 McDonald CF, Glasgow N. The Burden of Obstructive Lung Disease (BOLD) study in Australia. Med J Aust 2013;198(3):124-5.
- Ware VA. Improving the accessibility of health services in urban and regional settings for Indigenous people. Resource sheet no. 27 produced for the 38. Closing the Gap Clearinghouse. Canberra: Australian Institute of Health and Welfare; 2013.
- 39. Australia Institute of Health and Welfare. Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011.
- Canberra: AIHW; 2016. Australian Burden of Disease Study Series No. 6; Cat. No. BOD 7. 40. Closing the Gap Clearinghouse. Healthy lifestyle programs for physical activity and nutrition. Resource sheet no. 9. Canberra: Australian Institute of Health and Welfare, and Australian Institute of Family Studies; 2012.
- Markwick A, Ansari Z, Sullivan M, McNeil J. Social determinants and lifestyle risk factors only partially explain the higher prevalence of food insecurity 41. among Aboriginal and Torres Strait Islanders in the Australian state of Victoria: a cross-sectional study. BMC Public Health 2014;14:598.
- Franklin B, Jones A, Love D, Puckett S, Macklin J, White-Means S. Exploring mediators of food insecurity and obesity: a review of recent literature. J Community Health 2012;37(1):253-64.
- 43. Watts C, Cairncross S. Should the GBD risk factor rankings be used to guide policy? Lancet 2012;380(9859):2060-1.

### **References continued**

- 44. Bond CJ. A culture of ill health: public health or Aboriginality? Med J Aust 2005;183(1):39-41.
- 45. Askew DA, Togni SJ, Schluter PJ, Rogers L, Egert S, Potter N, et al. Investigating the feasibility, acceptability and appropriateness of outreach case management in an urban Aboriginal and Torres Strait Islander primary health care service: a mixed methods exploratory study. BMC Health Serv Res 2016;16(1):178.
- Cresp R, Clarke K, McAuley KE, McAullay D, Moylan CA, Peter S, et al. Effectiveness of the Koorliny Moort out-of-hospital health care program for Aboriginal and Torres Strait Islander children in Western Australia. Med J Aust 2016;204(5):1971e–7.
- Katzenellenbogen JM, Miller LJ, Somerford P, McEvoy S, Bessarab D. Strategic information for hospital service planning: a linked data study to inform an urban Aboriginal Health Liaison Officer program in Western Australia. Aust Health Rev 2015;39(4):429–36.
- 48. Katzenellenbogen JM, Sanfilippo FM, Hobbs MS, Knuiman MW, Bessarab D, Durey A, et al. Voting with their feet predictors of discharge against medical advice in Aboriginal and non-Aboriginal ischaemic heart disease inpatients in Western Australia: an analytic study using data linkage. BMC Health Serv Res 2013;13:330.
- 49. Shaw C. An evidence-based approach to reducing discharge against medical advice amongst Aboriginal and Torres Strait Islander patients. Deeble Institute issues brief. Canberra: Deeble Institute; 2016.
- 50. Bailie J, Schierhout G, Laycock A, Kelaher M, Percival N, O'Donoghue L, et al. Determinants of access to chronic illness care: a mixed-methods evaluation of a national multifaceted chronic disease package for Indigenous Australians. BMJ Open 2015;5(11):e008103.
- Tran B, Falster MO, Douglas K, Blyth F, Jorm LR. Smoking and potentially preventable hospitalisation: the benefit of smoking cessation in older ages. Drug Alcohol Depend 2015;150:85–91.
- 52. Australian Institute of Health and Welfare. National Drug Strategy Household Survey detailed report 2013. Canberra: AIHW; 2014. Drug statistics Series No. 28; Cat. No. PHE 183.
- Leung J, Gartner C, Dobson A, Lucke J, Hall W. Psychological distress is associated with tobacco smoking and quitting behaviour in the Australian population: evidence from national cross-sectional surveys. Aust N Z J Psychiatry 2011;45(2):170–8.
- Markwick A, Ansari Z, Sullivan M, McNeil J. Social determinants and psychological distress among Aboriginal and Torres Strait islander adults in the Australian state of Victoria: a cross-sectional population based study. Soc Sci Med 2015;128:178–87.
- 55. Leung J, Gartner C, Hall W, Lucke J, Dobson A. A longitudinal study of the bi-directional relationship between tobacco smoking and psychological distress in a community sample of young Australian women. Psychol Med 2012;42(6):1273–82.