Summary
Potentially avoidable hospitalisations in Australia:
Causes for hospitalisations and primary health care interventions

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Summary of key messages

Statement of the issue

This Policy Issue Review examined the literature related to “Potentially avoidable hospitalisations in Australia: Causes for hospitalisations and primary health care interventions”.

The main research question for this review is:

What initiatives have been implemented in Australia or internationally to improve primary health care service delivery and reduce hospital admissions that are potentially avoidable?

This report reviews the available research evidence on the impact of initiatives to reduce potentially avoidable hospitalisations (PAHs). While many health reform policies and initiatives have been implemented, only those that have been evaluated for their effectiveness in reducing PAHs were included in this report.

Brief background

The Australian Institute of Health and Welfare (AIHW) described PAHs as “admissions to hospital that could have potentially been prevented through the provision of appropriate non-hospital health services”. The AIHW classify PAHs into three main types: Vaccine-preventable, chronic and acute conditions. In 2009-10, PAHs related to chronic conditions were the most common, due mainly to the high rates of hospitalisations for diabetes complications (24% of all PAHs). Moderately high rates of PAHs were also reported for chronic obstructive pulmonary disease (COPD), dehydration and gastroenteritis, and dental conditions (9-10% of all PAHs).

PAHs as an indicator of primary health care accessibility and effectiveness

Several independent groups of researchers have shown that poor access to primary health care is strongly related to higher rates of PAHs. In Australia, data on PAHs are collected routinely by the AIHW and used as an indicator of primary health care accessibility and effectiveness. Data on PAHs may be influenced by a number of other factors, including: accuracy of PAHs estimates, particularly in chronic conditions where there is inevitable physical deterioration; and variations in coding across hospitals. Other factors beyond access to primary health care, such as socioeconomic disadvantage, rurality, comorbidities and certain immutable factors, such as age, gender and ethnicity are also associated with high rates of PAHs.

Reducing PAHs is a key objective of health reform

Reducing the rates of PAHs in Australia is a key objective in several important Australian Government health care agreements: Australia's National Health Performance Framework, the National Strategic Framework for Aboriginal and Torres Strait Islander Health (NSFATSIH) and the Council of Australian Governments (COAG) National Healthcare Agreement. To address this objective, a number of initiatives have been implemented in States and Territories and nationally, with varying degrees of success.

Initiatives to reduce potentially avoidable hospitalisations (PAHs)

An extensive review conducted by the Clinical Epidemiology & Health Service Evaluation Unit in Melbourne reported that most large-scale initiatives focused on reducing PAHs in people with chronic conditions. However, although the Agency for Healthcare Research and Quality (AHRQ) recommended that PAHs should be treated as a set if they are to be used as an indicator of
primary health care access, evidence from a systematic review\textsuperscript{21} suggests that interventions to reduce PAHs are more effective when they target specific conditions, rather than taking a large-scale policy approach.

This report focused on interventions for three of the most common conditions (identified by AIHW\textsuperscript{22}) that resulted in PAHs: diabetes complications, COPD and dental problems. Table 1 provides a summary of the risk factors for PAHs and effective programs to reduce PAHs in patients with diabetes complications or COPD.

### Table 1 Summary of risk factors for PAHs and initiatives for diabetes and COPD

<table>
<thead>
<tr>
<th></th>
<th>Diabetes complications</th>
<th>COPD</th>
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<tbody>
<tr>
<td>Risk factors for PAHs</td>
<td>Low SES</td>
<td>Low SES</td>
</tr>
<tr>
<td></td>
<td>Rural/remote location</td>
<td>Rural/remote location</td>
</tr>
<tr>
<td></td>
<td>Indigenous background</td>
<td>Indigenous background</td>
</tr>
<tr>
<td></td>
<td>Comorbidity</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
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</tbody>
</table>

- **Effective programs:**
  - HARP\textsuperscript{22}
  - Diabetes Netcare (US)\textsuperscript{24}
  - Disease management programs\textsuperscript{25; 26; 27; 28}
  - Telehealth\textsuperscript{29}
  - Specialist diabetes clinics\textsuperscript{30}

- **Common characteristics of successful initiatives to reduce PAHs**
  - Multidisciplinary team care
  - Disease management
  - Individually tailored care
  - Integrated care
  - Continuity of care
  - Patient self-management

- **HARP\textsuperscript{31}**
  - Restoring Health program\textsuperscript{32}
  - Chronic Care Model\textsuperscript{33; 34}
  - NSW Community Acute Post-Acute Care (CAPAC) service\textsuperscript{35}
  - Specialist rehabilitation clinics\textsuperscript{36; 37}

**Dental conditions**

Dental health is integral to overall health status and dental conditions underlie approximately nine per cent of all PAHs in Australia. There is a strong relationship between poor oral health and socioeconomic disadvantage. Although there was no available evidence pertaining to the effectiveness of primary dental care and reductions in PAHs, there was evidence to indicate that poor access to dental care was related to increased hospital admissions for preventable facial infections.\textsuperscript{38} A suite of oral health initiatives have been proposed and some have commenced (See Appendix D Oral health initiatives); however, evaluations are not yet available.

**Populations with high rates of PAHs**

It is well-accepted that Indigenous Australians and people from low socioeconomic backgrounds often have difficulty accessing primary health care, have poorer overall health, and higher rates of hospital admissions, particularly PAHs.\textsuperscript{39; 40; 41} However, research evaluating the effectiveness of interventions designed to reduce PAHs in these populations is scarce. Some research indicates that the likelihood of hospitalisations can be reduced using multifactorial approaches\textsuperscript{42; 43} as listed in Table 2.
### Table 2  Summary of approaches to reduce PAHs in Indigenous populations and people with low SES

<table>
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<tr>
<th>Approach to reduce PAHs</th>
<th>Details</th>
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</table>
| Early detection, early treatment and symptom management | Screening Indigenous patients at risk of PAHs\(^{(44)}\)  
Managing risk factors and preventing development of comorbidities \(^{(42; 43)}\) |
| Creating supportive environment | Developing social and disease management capacity in individuals’ support network \(^{(42; 43)}\)  
“Homelands” program for Indigenous population \(^{(44)}\) |
| Self-management support | Developing individually tailored disease management plans \(^{(42; 43)}\)  
Patient education and communication, including language and literacy-appropriate materials \(^{(44)}\) |
| Service delivery and coordination | Evidence-based interventions, care coordination and improved access to care \(^{(42; 43)}\)  
Comprehensive discharge planning \(^{(44)}\) |
| Local liveability | Focus on healthy environment, with good air quality and accessibility to primary health care \(^{(42; 43)}\)  
Primary health care delivered locally in community controlled organisations \(^{(45)}\) |
| Socioeconomic opportunity | Having adequate resources, income and employment opportunities \(^{(42; 43)}\) |

### Avoidable hospital readmissions

Readmissions to hospital are also common, costly and often avoidable.\(^{(46)}\) Some research suggests that initiatives involving enhanced discharge and follow-up procedures (to primary health care and community settings) may contribute to lower rates of avoidable readmissions.\(^{(47)}\)

While the research evidence in this area is sparse and relatively weak, the common characteristics of some promising interventions to reduce avoidable hospital readmissions include:\(^{(47; 48)}\)

- **Algorithm to identify high-risk patients**: eg. LACE Index\(^{(47)}\), Patients At Risk of Readmission (PARR) algorithm\(^{(49)}\)
- **Patient education**: eg. tailored instructions; Teachback technique to confirm patients’ understanding of care plan
- **Comprehensive discharge planning**: pre- and post-discharge communication with patient’s provider and caregivers
- **Scheduled follow-up**: telephone communication with patients post-discharge; follow-up appointments.

### Conclusions

Targeting reduction in PAHs is a specific objective of health care reform in Australia, with the aim of improving patients’ outcomes, reducing pressure on hospitals and enhancing health system efficiency and cost-effectiveness.

This review identified several promising programs to reduce PAHs in chronically ill Australians. Common characteristics of effective initiatives included:

- early identification of patients who are at risk of hospitalisation
- care coordination and integration of services
- enhanced access to primary health care and focus on equity
- multidisciplinary care team
- disease management, particularly for medium to long-term.
Importantly, it should be noted that reductions in PAHs are not necessarily associated with improved clinical outcomes. In addition, where hospital admissions decrease, the burden on primary health care may increase and resources will be needed to support the demand.