

May 2017

Building better foundations for primary care

Stephen Duckett and Hal Swerissen



Grattan Institute Support

Founding members



Australian Government



Affiliate Partners

Google
Medibank Private
Susan McKinnon Foundation

Senior Affiliates

EY
Maddocks
PwC
McKinsey & Company
The Scanlon Foundation
Wesfarmers

Affiliates

Ashurst
Corrs
Deloitte
GE ANZ
The Myer Foundation
Urbis
Westpac

Grattan Institute Report No. 2017-06, May 2017

This report was written by Stephen Duckett, Grattan Institute Health Program Director, and Hal Swerissen, Fellow in the Health Program. Greg Moran provided extensive research assistance and made substantial contributions to the report.

We would like to thank the members of Grattan Institute's Health Program Reference Group and Richard Choong, Learne Durrington, Jane Gunn, and Virginia Lewis for their helpful comments, as well as numerous government and industry participants and officials for their input.

The opinions in this report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members, reference group members or reviewers. Any remaining errors or omissions are the responsibility of the authors.

Grattan Institute is an independent think-tank focused on Australian public policy. Our work is independent, practical and rigorous. We aim to improve policy outcomes by engaging with both decision-makers and the community.

For further information on the Institute's programs, or to join our mailing list, please go to: <http://www.grattan.edu.au/>.

This report may be cited as: Duckett, S., Swerissen, H., and Moran, G. (2017). *Building better foundations for primary care*. Grattan Institute.

ISBN: 978-0-9876121-3-7

All material published or otherwise created by Grattan Institute is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License

Overview

Primary care in Australia is a renovator's opportunity. Avoidable hospital admissions cost the health system more than \$320 million each year. Providing better care for people with diabetes, asthma, heart disease and other chronic conditions could save a significant proportion of this, as well as improving the working and social lives of the people affected. Reforms identified in this report provide the basis for achieving those changes and reaping those savings.

The time to start the makeover is now. The 2017 Commonwealth Budget is expected to commit more than half a billion dollars over the next few years to lifting the Medicare rebate freeze. The Government should seize this opportunity to buy system change.

The primary care system – Australians' first point of contact for health care – was designed in and for another era. It is failing on the prevention and management of chronic disease, the heaviest burden on today's health system. We showed in our previous report, *Chronic failure in primary care*, that despite the government spending more than \$1 billion each year on planning, coordinating and reviewing chronic disease management, many people with chronic conditions do not receive best care.

The Government recognises there is a problem. It has announced a trial of Health Care Homes, designed to improve the way general practices work with other health professionals to treat patients with chronic conditions. Health Care Homes may be a good start, but they will not be enough. More ambitious changes are needed, especially to the way we organise and pay for primary care services.

The first step should be to gather more information about what happens in general practice. We know, roughly, how long a general practice visit is, but we have no idea why the patient went to the doctor or what was decided. Without data, there is no sound basis for system reform. A new payment should be made to general practices to gather and supply the necessary data.

The second change required is to build on the development of local primary care systems. Primary Health Networks need to be strengthened and given explicit responsibility for creating more effective and efficient primary care systems in their local areas. In particular, they need to be held accountable for making improvements that will reduce unnecessary hospital admissions – those which could have been prevented with better primary care.

The Commonwealth and the states need to step up too. Commonwealth and state bickering and blame-shifting needs to be replaced by new Primary Care Agreements – an overarching deal for each state, supplemented by localised agreements signed by the Commonwealth, the state and the Primary Health Network. These agreements should set specific goals and create joint accountability for failure to meet them.

Over the long term, the fee-for-service payment system for GPs needs to change, so general practices get rewarded for getting the best outcomes for their patients.

But none of this will be possible without more data and better local systems. We need to start building the foundations for better primary care now.

Recommendations

Recommendation 1: Pay for better data

We need more information about what happens in general practice. Without data, there is no sound basis for system reform. Better data will enable realistic targets to be set for improvement in primary care. The lifting of the Medicare rebate freeze should be taken as an opportunity to make a new payment to general practices for gathering and supplying the necessary data.

Recommendation 2: Primary Care Agreements should be made between the Commonwealth, the states and Primary Health Networks

Commonwealth and state bickering and blame-shifting needs to be replaced by new Primary Care Agreements – an overarching deal for each state, supplemented by localised agreements signed by the Commonwealth, the state and the Primary Health Network. These agreements should set specific goals and create joint accountability for failure to meet them. As part of these Agreements, states should commit to

invest in Primary Health Networks and help them develop programs to reduce demand on hospitals.

Recommendation 3: Strengthen Primary Health Networks

Primary Health Networks should be given the resources and the explicit responsibility for creating more effective and efficient primary care systems in their local areas. In particular, they need to be held accountable for making improvements that will reduce unnecessary hospital admissions – those which could have been prevented with better primary care.

Recommendation 4: Reform fee-for-service funding over the long term

Over the long term, the fee-for-service payment system for GPs needs to change, so general practices get rewarded for getting the best outcomes for their patients.

Table of contents

Overview	3
Recommendations	4
1 The renovator's opportunity	6
2 What needs fixing	10
3 Health Care Homes and beyond	17
4 The way forward	23
5 Conclusion	28
A Examples of Australian initiatives that have reduced hospital demand	29

1 The renovator's opportunity

Australia's primary care system needs renovation. It was designed for another era. The growing burden of chronic disease makes reform urgent. The expected removal of the Medicare rebate freeze in the 2017 federal budget provides the perfect opportunity to plan and fund the renovations.

1.1 The chronic disease challenge

Our March 2016 report, *Chronic failure in primary care*, described in detail the challenge that chronic disease poses to the health care system.¹

Spending on health care is growing faster than the population, inflation and economic activity, and chronic disease is a major cause.²

In 2008-09, the most recent year for which the analysis is available, spending on chronic disease was around \$33 billion,³ or just under 30 per cent of the total health expenditure of \$113 billion in that year.⁴ By 2014-15, total health expenditure had grown to \$162 billion.⁵

In 2014-15, more than 44 per cent of Australians reported having three or more long-term health conditions.⁶ In 2012-13, the 12.5 per cent of Australians that visited their general practitioner (GP) the most – and were therefore most likely to have chronic conditions – accounted for 41 per cent of non-hospital Medicare benefits expenditure.⁷

Chronic disease is becoming more prevalent and new technologies are expanding treatment options, although not always improving patient outcomes commensurately with cost.⁸ When Australians become sick, more can and is being done for them. As Figure 1.1 on the following page shows, people over 65 are going to hospital and seeing the doctor much more than they were a decade ago.

For some chronic conditions, whether a patient ends up needing to go to hospital often depends on the quality of the primary care they receive. Good information systems – that is, having the right data and using it effectively – is a crucial part of providing high-quality care.

Box 1: What is 'primary care'

Primary care provides the first point of contact with, and the main pathway into, the health system.

We use the term primary care broadly to include general practice and other services such as advice from pharmacists in pharmacies, community nursing care and allied health services. Not all primary care services are funded through Medicare; some are funded by state governments, and some are paid for by patients directly.

Australia has comparatively high numbers of hospital admissions for chronic disease which could be managed in primary care.⁹ As discussed in Box 2 on page 8, cutting the number of potentially preventable hospital admissions would create big cost savings. The pre-

1. Swerissen et al. (2016).

2. Australian Institute of Health and Welfare (2016a, Table 2.3 and Table 2.6).

3. Swerissen et al. (2016, p. 5); and Australian Institute of Health and Welfare (2014, Figure 2.6).

4. Australian Institute of Health and Welfare (2010, p. ix).

5. Australian Institute of Health and Welfare (2016a, p. vii).

6. ABS (2016a).

7. National Health Performance Authority (2015, p. 14).

8. Lakdawalla et al. (2015).

9. OECD (2015).

vention and management of chronic disease must therefore be a major priority for Australia's health system.

1.2 The opportunity for reform

The Commonwealth and the states are jointly responsible for funding and regulating Australian health services. The states manage public hospitals, while the Commonwealth has accepted 'lead responsibility' for primary care. However, the way they perform these roles is quite different: the states have clear responsibility for delivering hospital services, but the Commonwealth confines its responsibility for primary care primarily to funding (see Box 3 on page 9). This division of responsibility makes regional coordination of hospital and primary care services that much harder.

In 2014-15 the Commonwealth contributed 42 per cent of government public hospital expenditure and the states 58 per cent.¹⁰ The Commonwealth is committed to funding up to 6.5 per cent of the cost of hospital growth to 2020.¹¹

In 2014-15 the Commonwealth contributed 75 per cent of government primary health care expenditure and the states 25 per cent.¹² There is no Commonwealth-state agreement on funding future primary care growth.

Both levels of government say they want to reduce demand for hospital services by better coordinating the care of people with complex and chronic conditions.¹³ Better prevention and management of these conditions in primary care is central to this aim.

10. Grattan analysis of Australian Institute of Health and Welfare (2016a, p. 41).

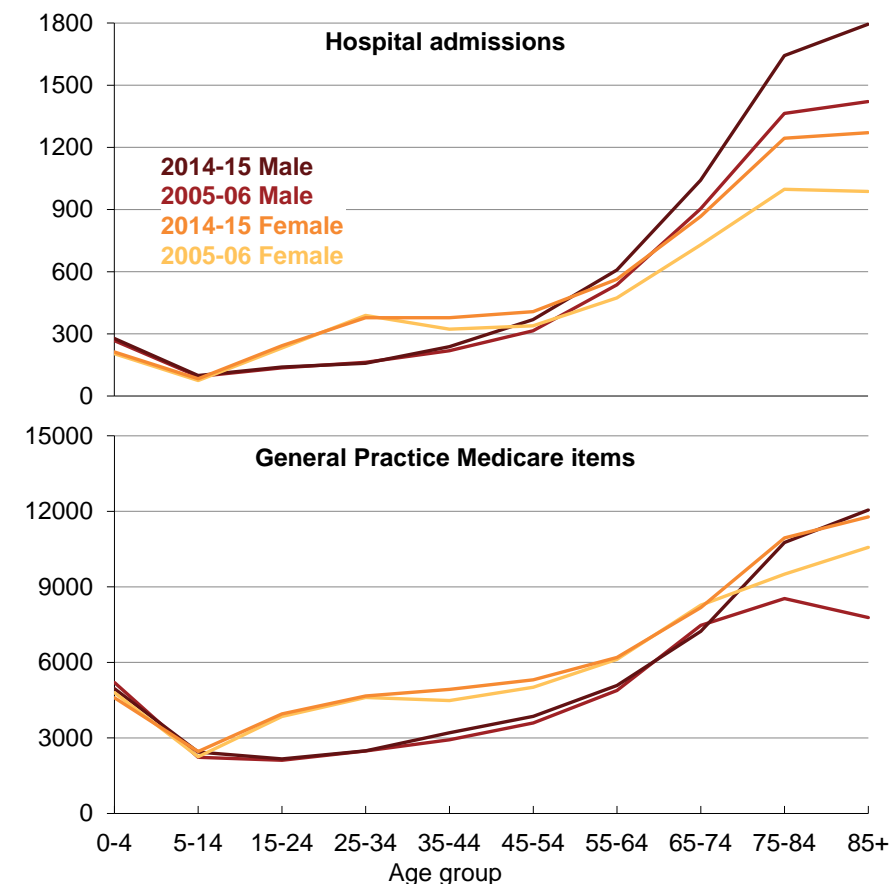
11. COAG (2016, p. 3).

12. Grattan analysis of Australian Institute of Health and Welfare (2016a, Table A3).

13. COAG (2016, p. 2).

Figure 1.1: People over 65 are using health care services much more than they were a decade ago

Health care activity per 1000 population



Notes: General Practice Medicare items are 3, 4, 20, 23, 24, 35-37, 43, 44, 47 and 51.

Source: Grattan analysis of Medicare statistics, Australian Institute of Health and Welfare (2016b), Australian Institute of Health and Welfare (2007), ABS (2016b) and ABS (2014).

But there is no clear systems manager for primary care, who can be held accountable for gaps in services.¹⁴ In the absence of such a manager, the coordination burden falls on: public hospitals, which rarely have good links with primary care; GPs, who rarely have the resources to develop effective programs to reduce hospital demand; and nascent Primary Health Networks, which have a broad remit but limited authority.

In 2013 the Commonwealth Government froze the indexation of GP rebates. The freeze is expected to be removed – at least partially – in the 2017 budget, at a cost of more than half a billion dollars over the next few years.¹⁵ Lifting of the freeze provides a unique opportunity for the Government to drive much-needed systemic reforms to Medicare in return for increased GP remuneration.

Box 2: The ‘size of the prize’

In *Chronic failure in primary care* we estimated the cost of potentially preventable hospital admissions related to chronic disease at around \$2 billion.^a

But not all that money could be saved, because not all potentially preventable admissions are equally avoidable in practice. For example, a theoretically preventable admission which results in the patient staying in hospital for more than two days suggests a severe problem, so the admission may have been difficult to avoid in practice, at least immediately before the admission.

A more realistic estimate of the savings available can be made by looking at potentially preventable hospital admissions that resulted in a stay of two days or less. In *Chronic failure in primary care* we estimated the cost of such admissions at around \$322 million in 2010-11.

In addition to those hospital costs, there are other health system costs which could be saved with better management of chronic disease in general practice, such as costs of visits to medical specialists. There are also potential savings to the broader economy through improved workforce participation by people with chronic conditions.^b

a. Swerissen et al. (2016).

b. D. Schofield et al. (2015); Verikios et al. (2015); and D. Schofield et al. (2016).

14. The term ‘systems manager’ is used to describe the state’s role relating to public hospitals in the state (see Box 3 on the next page).

15. Dunlevy (2017).

Box 3: Commonwealth and state roles in health care

The most recent expression of roles for the Commonwealth and states is the *Heads of Agreement between the Commonwealth and the States and Territories on Public Hospital Funding* reached on 1 April 2016.^a It says:

- The states will remain system managers for public hospitals and will remain responsible for their infrastructure, operation, delivery of services and performance.
- The Commonwealth will continue to have lead responsibility for general practice and primary health care, including the Primary Health Networks, and continue to support private health services through the Medicare Benefits Schedule, the Pharmaceutical Benefits Scheme, and the Private Health Insurance Rebate.

a. COAG (2016, p. 1).

2 What needs fixing

2.1 The way we fund primary care does not create the right incentives

The Commonwealth is responsible for three quarters of primary care expenditure, mainly through Medicare. Spending on Medicare is now \$20 billion a year.¹⁶ This figure is projected to grow to \$37 billion over the next decade as the population grows, people expect more from the health system, new technologies are introduced, and chronic disease becomes more prevalent.¹⁷

For medical and some allied health services, practitioners charge patients a fee for each service, and the patient, or the practitioner on the patient's behalf, can claim a rebate from the Commonwealth to offset the fee in full or in part (see Box 4).

In 2015-16, the Commonwealth spent \$7.1 billion on GP items (see Figure 2.1 on the next page). Of this, \$5.9 billion was spent on individual consultations. Items typically related to the ongoing management of disease, such as the development of care plans, mental health treatment, health assessments, and Practice Incentive Program payments, comprised \$1.2 billion of the spending.

2.1.1 Debates about spending have hidden other problems

While universal, publicly funded health services have been recognised as the best way of ensuring access and equity, user-pay models (co-payments) have been proposed to constrain spending. There have been repeated attempts to introduce mandatory co-payments and

Box 4: How Medicare works

All Australian residents are eligible for Medicare benefits.^a

Patients or their doctor receive a benefit payment ('rebate') of 100 per cent of the fee determined by Government and published in the Medicare fee schedule for clinically relevant primary care services provided by a GP, a practice nurse or an Aboriginal and Torres Strait Islander health practitioner. Other professional services delivered outside hospitals, including specialist medical, diagnostic and a limited range of allied health services, attract a rebate of 85 per cent of the schedule fee.

Medical services (including diagnostic services) provided to private inpatients attract a 75 per cent rebate, with private health insurance funds able to pay the balance. A Medicare Safety Net provides further coverage for out-of-pocket costs.

Practitioners can choose to collect only the Commonwealth rebate as the full fee for their service ('bulk bill'), or they can charge an additional amount, which patients have to pay out of their own pocket ('co-payment').

- a. Visitors from New Zealand, Ireland, the United Kingdom, the Netherlands, Sweden, Finland, Norway, Italy, Malta, Belgium and Slovenia are also eligible for medically necessary treatment.

16. This figure is for all Medicare expenditure, not just general practice expenditure. PBO (2015, p. 3).

17. Ibid. (p. viii).

means testing, and to allow private insurance to expand into primary medical care.¹⁸

However, as we have argued previously, co-payments can hit the poor hard.¹⁹ Debates about Medicare co-payments are a distraction from the real reforms needed to improve the efficiency, equity and effectiveness of primary care services.

2.1.2 Medicare needs to change to address chronic disease

Medicare was originally designed in the 1960s and 1970s, when the population was much younger and health services were much more focused on conditions which were one-off and could be managed in a single visit.²⁰ Times have changed; Medicare needs to change too.

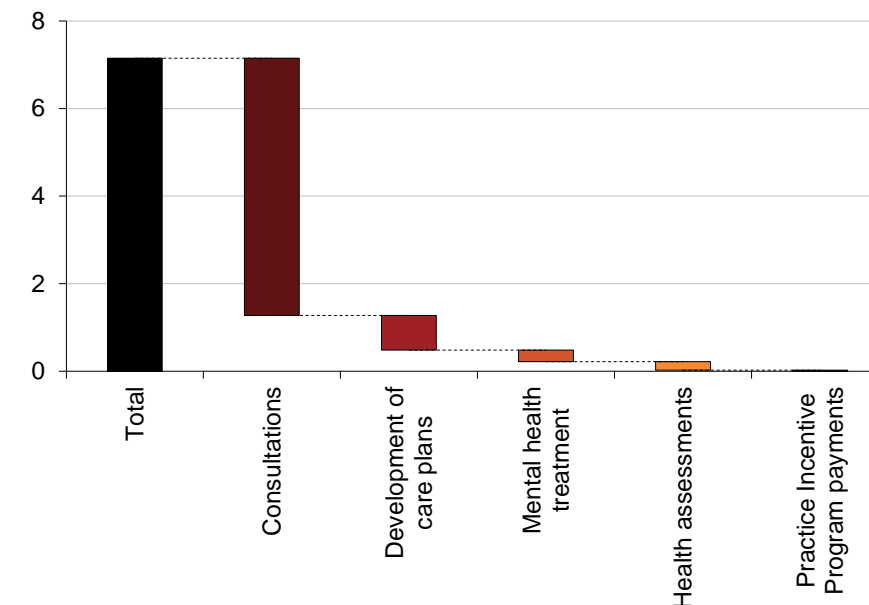
2.1.3 Problems with fee-for-service

Fee-for-service is entrenched in Medicare. Most medical payments are paid as fees for individual services. The typical answer to emerging problems has been to graft new items on to the old fee-for-service system. The result is that very little has changed in the basic structure of GP payments since Medicare was introduced more than 30 years ago.²¹

The fee-for-service model gives practitioners a financial incentive to increase the number of services provided and reduce consultation times.²² Services on the Medicare schedule are reimbursed, regardless of their complexity or impact on the patient's health. More than 80

Figure 2.1: Most Medicare GP spending is payment for individual consultations

Spending on GP Medicare items, 2015-16, \$ billion



Notes: Consultations also includes other non-referred attendances, and after-hours consultations.

Source: Medicare statistics.

18. Boxall and Gillespie (2013).

19. Duckett (2014).

20. Boxall and Gillespie (2013).

21. Russell (2013).

22. Although a service can only be claimed if it is 'clinically relevant', defined as a service 'generally accepted in the medical profession as necessary for the appropriate treatment of the patient'.

per cent of GP consultations last less than 20 minutes.²³ These shorter consultations are better rewarded by the Medicare payment system, because they generally yield higher income per minute of a doctor's time (see Figure 2.2).

With chronic disease becoming more prevalent, and more patients having multiple conditions, a 'standard' consultation may not be adequate to manage all of a patient's problems. Yet a general practice will be paid more if it schedules a second standard consultation at a later date, rather than extend the original consultation.

Most of a GP's practice income comes from patient fees: the more patients seen, the more income the practice receives. Yet chronic conditions often require more complex care and support, which is more difficult to remunerate with fee-for-service payments. Under the current fee-for-service system, GPs have no financial incentive to manage a patient's illnesses more efficiently, and so reduce future visits.²⁴ All the risk of paying for extra services, including consultations, referrals, pathology, scans and pharmaceuticals, is borne by the Commonwealth.

The fee-for-service funding rules also limit the ability of general practices to use the skills of nurses. The rules, with few exceptions, require that the service billed is actually provided by the GP. Yet evidence suggests that in some situations, delegating work to nurses, thus substituting nurses' time for doctors' time, helps patients.²⁵

One exception to the general rule is that practices can bill for some services of nurses who provide support to chronic-disease patients,

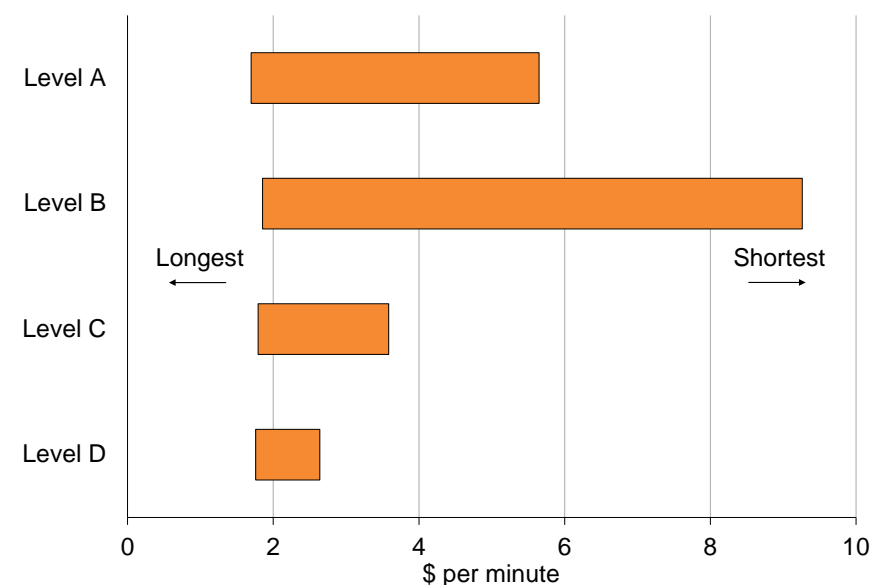
23. There are four levels of consultation: Level A (Medicare item 3) are brief; Level B (23) are less than 20 minutes; Level C (36) are between 20 and 40 minutes; and Level D (44) are at least 40 minutes. Medicare statistics show that Level A and B consultations together made up 84 per cent of the total number of Level A, B, C and D consultations in 2015-16.

24. Boxall and Gillespie (2013).

25. Sibbald et al. (2006); Martínez-González et al. (2014); Martínez-González et al. (2015); and Parker and Fuller (2016).

Figure 2.2: The shorter the consultation, the more money per minute for the GP

\$ per minute earned by GP for different levels and lengths of consultation



Notes: Assumed consultation length ranges: Level A (3-10 minutes); Level B (4-20); Level C (20-40); Level D (40-60). Indicative only. Figures do not include income other than Level A, B, C and D Medicare Benefit Schedule rebates (e.g. excludes out-of-pocket payments, Practice Incentive Program payments). Does not include the proposed \$5 cut to services for general patients.

Source: Medicare Benefits Schedule from 1 April 2016.

such as checking on clinical progress, monitoring medication use, and collecting information to help GPs review care plans (Medicare item 10997). However, this item can only be claimed up to five times for a patient in any year. It was used only 1.2 million times in 2014-15, which is on average just one claim per 10 people who had chronic disease in that year.²⁶

After a period of stability, Medicare spending on general practice has increased from about \$200 per person in the early 2000s to almost \$300 per person, after adjusting for inflation (see Figure 2.3), with no clear evidence about what has driven this change in use patterns, nor what has been achieved in terms of patient outcomes. Most of the increase in spending per person has been driven by government policy changes, particularly new assessment and coordination items.²⁷

Fee-for-service works well for simple health problems that are relatively easy to treat. But people with chronic conditions, or who are at risk of developing them, need well-planned and ongoing care from a range of service providers.

The lack of financial incentives to provide such coordinated care leads to reactive, fragmented care. Claims for completing recommended cycles of care for people with diabetes and asthma, for example, are low.²⁸

Patients with chronic illnesses are often seen by a range of health care professionals, each responsible for part of the patient's care. Patients report receiving conflicting information from different doctors, and that doctors involved in their care did not share information appropriately.²⁹

26. Medicare statistics and ABS (2016a, Table 18.1).

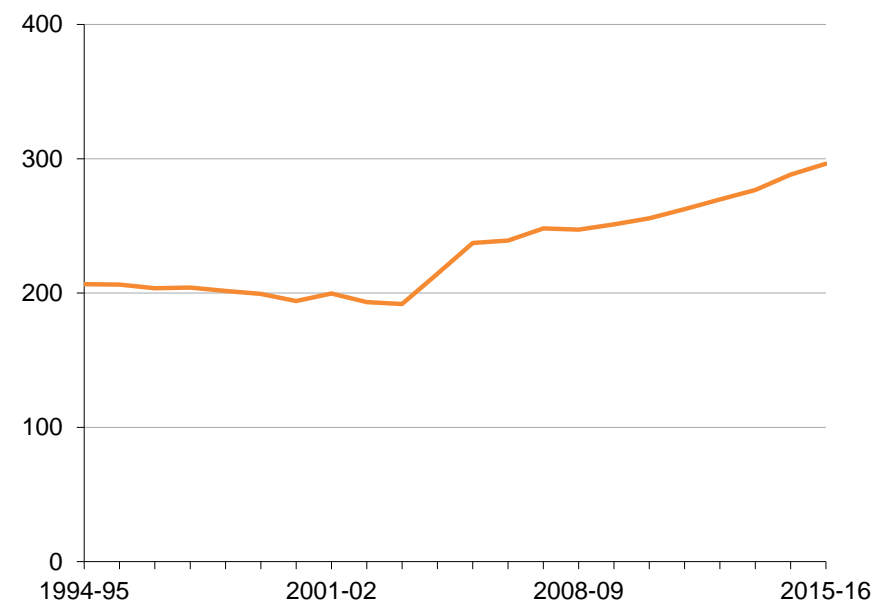
27. PBO (2015).

28. Swerissen et al. (2016).

29. In a survey conducted by the New York-based Commonwealth Fund, 10 per cent of Australian respondents reported conflicting information and 20 per cent poor sharing of information; Osborn et al. (2016).

Figure 2.3: Real Medicare GP spending per person has increased in the past decade

Spending on GP Medicare items per person, \$2015-16



Notes: Includes consultations, other non-referred attendances, after-hours consultations, development of care plans, mental health treatment, health assessments and Practice Incentive Program payments.

Source: Grattan analysis of Medicare statistics, ABS (2017a) and ABS (2017b).

In theory, GPs are meant to coordinate the care. In practice, they often do not have the tools, incentives or authority to do so.

This problem has been obvious for some time, and specific service items for health assessment, care planning, care coordination and review for chronic conditions have been introduced in an effort to address it. But these services are also reimbursed on a fee-for-service basis. As shown in Figure 2.1 on page 11, more than \$1 billion was spent through Medicare on these services in 2014-15.

There are no incentives or requirements for assessment, planning, coordination and review to be integrated for individual patients. If a plan is drawn up, there is no guarantee it will be implemented or monitored.³⁰ Any practitioner can claim rebates for assessment, regardless of whether they are the patient's regular GP.³¹ This reduces continuity of care and can reduce the quality of the assessment. Payments are not increased for more difficult illnesses.

Medicare's Practice Incentives Program does include some incentives to provide good-quality care, but only for treatment of diabetes and asthma. These incentives are not integrated with the assessment, planning, monitoring and review services for people with chronic conditions. And, again, they are not adjusted up or down depending on the patient's illness and need.

The evidence suggests the quality of care for Australians with chronic disease is poor: people with conditions including diabetes, high blood pressure, obesity and mental illness often do not get the recommended care.³²

30. RACGP (2015).

31. Although the Medicare rules state that the assessment 'should be undertaken by the patient's usual doctor' [emphasis added].

32. Swerissen et al. (2016).

2.1.4 The incentive arrangements are wrong

Carefully designed payment systems can promote better quality, integrated care, and ensure services are delivered more efficiently.³³

Around the world there is a diverse range of ways to pay for primary health care.³⁴ Payments can be made for a service or consultation (fee-for-service), an episode of care (episode payments), or a set of services for an individual patient for a specific period of time (capitation payments). Extra payments can be made as reward for good patient outcomes (Pay for Performance) or for improvement (Pay for Improvement), although the evidence on the success of such schemes is mixed.³⁵

Different payment models have different impacts on service volumes, care quality, patient outcomes, and service efficiency.³⁶ The best models attempt to maximise the strengths and offset the weaknesses by blending a combination of capitation, fee-for-service payments and performance-based payments.³⁷

In Australia, blended payment models were introduced in the early 1990s, but there has been too little adjustment or development since.

The best payment systems assign responsibility for managing different aspects of a patient's treatment, and identify which types of risk should be managed by the funder/payer and which by the provider. Organisations that receive capitation payments, for example, are responsible for managing variation in the use of services – so there is a financial incentive to provide only those services that are necessary to meet patient needs. The risks of providing unnecessary services fall on the provider, not the payer.

33. Tsiachristas et al. (2013).

34. OECD (2016).

35. Scott et al. (2016).

36. Oliver-Baxter and Brown (2013).

37. OECD (2016).

In Australia, however, all the risks for variation in the number of patient visits falls on Medicare. GPs have no financial incentive to reduce unnecessary patient visits to their practice.³⁸ In recent years, the only proposals to mitigate Medicare's exposure to these risks have been to shift some of the risk to patients through increased co-payments. Yet such moves could hit poorer patients hardest.³⁹

2.2 Data on the quality of care and patient outcomes is inadequate

There are mountains of data in primary care but it is not systematically collected, integrated or analysed. The quality of the data collected is also highly variable. The Commonwealth pays more than \$7 billion a year to GPs and other primary care providers, yet GPs are not required to maintain consistent, good-quality data on patient characteristics, assessments, diagnoses, referrals, interventions or patient outcomes.⁴⁰

Medicare statistics are available for services and payments, but they do not provide detailed information on patient characteristics, conditions, services or patient outcomes. We know a lot about the cost of Medicare, but very little about why a patient presented for treatment or what was achieved.⁴¹

Yet nearly all GPs use electronic health record systems that include information on patient characteristics, conditions, treatments and services provided, referrals and clinical results. These systems, which include Medical Director, Best Practice and Zemed, could contain the

information that is needed. There are also systems for extracting data from electronic GP patient management systems, including Canning and PenCS.

A range of factors has limited the aggregation and assessment of GP data across the system, including variations in patient management software, inconsistencies in coding systems, contractual issues, and privacy concerns.⁴² Whatever the cause, the result is clear: Australia has too little system-wide data on why people see their GP, what treatment they receive, and how much the treatment provided improved the patient's health.

2.3 There is no framework for measuring quality and rewarding performance

There is no comprehensive framework in Australia for measuring or rewarding quality and performance in primary care. Yet pay-for-performance schemes, which we described in our previous report, *Chronic failure in primary care*, are increasingly common in health care around the world: for example, the Quality and Outcomes Framework in England (see Box 5 on the next page) and a variety of schemes in the United States.

Threshold-based payments, such as in the English scheme, allow incentives to be tailored so that larger payments are made to practices which were poor performers at first. In this way, quality improvement is stimulated where it is needed most.⁴³

Many countries are experimenting with payment incentives to encourage practices to collect and report data on their performance. Australia could develop such a scheme for primary care by reforming the Practice Incentives Program, which currently targets quality improvement

38. Over-servicing is monitored through the Medicare Practitioner Review Program which compares individual GP billing to average billing practices. Counselling and penalties may be applied to GPs who over service or abuse Medicare guidelines and regulations.

39. Duckett and Breadon (2014).

40. J. Gordon et al. (2016).

41. In sharp contrast, England has a comprehensive system of quality review and reporting, including for consumers, overseen by the Care Quality Commission.

42. National Prescribing Service (2008).

43. Greene et al. (2015).

payments to treatment of asthma and diabetes only. Some of the data that could be incorporated into pay-for-performance schemes are already collected in Australia. For example, the Medical Director data set includes 'before' and 'after' measurements that chart a patient's progress on key clinical indicators.

2.4 No one is responsible for the local management and performance of primary care in Australia

Although the Commonwealth and the states have agreed that the Commonwealth is responsible for managing the national primary care system, this responsibility has not been delegated. The Commonwealth established Divisions of General Practice 25 years ago as a step in that direction. Divisions have since been combined into Medicare Locals, and more recently Primary Health Networks. But they have not been given responsibility for the governance and development of Commonwealth-funded primary care services, nor the tools and skills to create an effective local primary care system out of the myriad of separate services providing primary care.

Box 5: Pay-for-performance for diabetes in England's Quality and Outcomes Framework

The 2016-17 Framework has 11 diabetes mellitus indicators.^a Each indicator is assigned points and performance thresholds.

The first indicator is that:

- The (practice) establishes and maintains a register of all patients aged 17 or over with diabetes mellitus, which specifies the type of diabetes where a diagnosis has been confirmed.

The register is the source of information for other indicators which assess management of patients with diabetes. For example:

- The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 59 mmol/mol or less in the preceding 12 months.

This indicator is worth up to 17 points for the practice, with each point being worth £165.18. The minimum threshold on this indicator is 35 per cent, with the upper threshold 75 per cent. Points are allocated proportionately between the two thresholds.

a. NHS Employers (2016).

3 Health Care Homes and beyond

A key goal of reforming primary care should be to improve the care of patients in general practice. An added benefit is this should reduce hospital demand. This is where Australia can make savings to help offset future increases in health-care costs.

Almost every developed country is trying to improve its primary care system, and most are concluding that the old ways of organising general practice no longer work. In the United Kingdom, for example, a House of Lords committee concluded that the 'traditional small business model of general practice is no longer fit for purpose and is inhibiting change'.⁴⁴

In Australia, the Commonwealth is reviewing the Medical Benefits Scheme and the Practice Incentives Program and plans to introduce Health Care Homes to improve Medicare, particularly for people with chronic conditions.

The concept of Health Care Homes has been discussed for decades, and different models have been used in different parts of the world. Initial international findings suggest Health Care Homes may cut costs and improve patient care, but the evidence is still equivocal.⁴⁵

3.1 Health Care Homes are just a first step

The Australian variant of Health Care Homes proposes to organise professional teams to deliver integrated care for people with chronic and complex conditions (see Box 6).⁴⁶

Box 6: How Health Care Homes are proposed to work

Key points from the Commonwealth Government's media release:^a

- Patients can voluntarily enrol with a general practice to provide a clinical home base.
- Patients and their families and carers are partners with clinicians, to give patients a greater role in their own care.
- Patients get enhanced access to services including through the use of new technology.
- Patients nominate a preferred clinician as their care coordinator.
- Patients receive flexible, team-based care with an emphasis on continuity and a commitment to quality and safety.
- Patients and their health-care team collect and share data.
- Fee-for-service payments are bundled into quarterly (capitation) payments that can be used more flexibly to meet the patient's needs.
- The goal is better performance by the system, and improved care for the patient.

a. Ley (2016).

44. Select Committee on the Long-term Sustainability of the NHS (UK) (2017).

45. Carlin et al. (2016); Afendulis et al. (2017); Sinaiko et al. (2017); and Smith et al. (2017).

46. Department of Health (Cth) (2017a).

Under the Healthier Medicare package announced by the Federal Government in 2016, general practices and Aboriginal Medical Services can become Health Care Homes. Eligible patients can choose to enrol, in which case a tailored plan to integrate their care will be developed for them.

The Commonwealth has redirected more than \$110 million of existing general practice funding for a Health Care Homes trial that will involve 200 practices between 2016 and 2019.⁴⁷

Practitioners and reform advocates broadly support the concept of Health Care Homes. However, the Royal Australian College of General Practitioners has criticised the design and funding of the trial. In particular, the College is concerned that the capitation payment model is underfunded.⁴⁸

While the Health Care Home trial is a useful first step, it does not address all the funding, accountability and information problems identified in Chapter 2.

3.2 How do we go further?

In the long term, public health and prevention measures, such as reducing the prevalence of obesity, should improve patient well-being and reduce demand for hospital care.⁴⁹ But population-wide health measures can take a long time to work. So interventions that deliver in the short term are also needed.

But indiscriminate increases in spending on primary care are not the answer. There is no clear evidence that simply providing more primary care will lead to significant reductions in hospital admissions.⁵⁰

47. Department of Health (Cth) (2017b).

48. RACGP (2016).

49. Duckett et al. (2016).

50. Gibson et al. (2013); Duckett and Griffiths (2016); and Van Loenen et al. (2016).

3.2.1 The Chronic Care Model provides guidance

Fortunately, there is some evidence on what policies and interventions work best to enhance primary care and reduce hospital admissions. These initiatives are commonly targeted at particular patient populations, and many have been influenced by the Chronic Care Model developed by US clinician Ed Wagner in the 1990s.⁵¹

The Wagner Model identifies six essential elements of a health care system that provides high-quality care for chronic disease:

1. Health System: a culture, organisation and mechanisms that promote safe, high-quality care.
2. Delivery System Design: the delivery of effective, efficient clinical care and self-management support.
3. Decision Support: clinical care that is consistent with scientific evidence and patient preferences.
4. Clinical Information Systems: patient and population data to facilitate efficient and effective care.
5. Self-Management Support.
6. The Community: community resources to meet the needs of patients.

Table 3.1 on the next page shows the common features of initiatives that have reduced hospital admissions in Australia and overseas,⁵² and how each of these features relates to elements of the Chronic Care Model.

51. Bodenheimer et al. (2002a); Bodenheimer et al. (2002b); Wagner et al. (2002); and Rothman and Wagner (2003).

52. A summary of Australian initiatives is provided in the Appendix.

These features are ultimately about improving the integration and management of care, rather than improving the quality or quantity of care at any individual link in the chain. The Canterbury District Health Board in New Zealand provides an example of this kind of integrated care reform (see Box 7 on the following page).

3.2.2 Start with general practices or systems?

Better integration of patient care is clearly needed, but should reform be driven at the level of the general practice or at a system level?

The genesis in the 1990s of the Divisions of General Practice – the precursors of the Primary Health Networks – was a recognition that individual general practices did not have the size or skills to drive the system-wide changes that are needed.⁵³

3.2.3 The Australian experience points to the need for a system-level approach

Several localised programmes and initiatives in Australia have successfully integrated patient care and reduced hospital demand, albeit to varying degrees.⁵⁴

As Table 3.2 on page 22 shows, each of these initiatives reflected elements of the Chronic Care Model. Some examples are:

- Health System: the NSW Chronic Care Collaborative made system-level improvement by identifying and disseminating best-practice for patients with heart failure and chronic obstructive pulmonary disease.

53. General Practice Consultative Committee (1992); and Coote (2009).

54. These initiatives are described in detail in the Appendix.

Table 3.1: Successful initiatives have common features that reflect the Chronic Care Model

Feature	Related elements of Chronic Care Model
Continuity of care for patients in the health providers they see, particularly GPs.	1, 2
Organisation of multidisciplinary care for patients (e.g. GPs, Allied Health, nursing, specialists).	1, 2, 3, 4
Integration of primary, community and hospital-level services, both in terms of information sharing and care pathways.	1, 2, 3, 4, 6
Access to and use of specialist services in the community.	1, 2, 3, 6
Facilitation of patient self-management.	5
Discharge plans and follow-up procedures to reduce the risk of re-admissions.	2, 4, 5, 6

Source: *Clinical Epidemiology and Health Service Evaluation Unit (2009), Purdy (2010), Katterl et al. (2012), Dorling et al. (2015), Erny-Albrecht et al. (2016), Gonçalves-Bradley et al. (2016), Van Loenen et al. (2016), Caughey et al. (2017) and Imison et al. (2017).*

Box 7: The Canterbury model

Facing unsustainable growth in hospital funding costs, the Canterbury District Health Board in New Zealand in the late-2000s introduced reforms to reduce the demand on hospital services. These changes were accelerated when the region – particularly Christchurch – was struck by a severe earthquake in 2011.

The initiatives include:

- Health Pathways: GPs and hospital doctors consult on the best pathways for patients with different conditions.
- Acute Demand Management: hospital admissions are prevented, or people who present to emergency departments are discharged, if community- or home-based care will suffice.
- Community Rehabilitation Enablement and Support Teams: Case managers seek to ‘pull’ patients out of hospital, and instead provide care via home visits, up to seven days a week for people with the greatest need. The aim is to reduce the length of hospital

stays, reduce the chances of re-admission, and delay admission to aged residential care.

- Use of efficiency and queue theory in hospitals.
- 24-hour GP services.
- Electronic referrals.
- Sharing of electronic patient records.

The reforms worked. Emergency department presentations and hospital admissions decreased.^a GPs and practice nurses believe that Health Pathways are leading to better care for patients.^b And the system as a whole turned around a NZ\$17 million deficit in 2007 to be on track for a NZ\$8 million surplus in 2010-11, prior to the earthquake.^c

Although Canterbury provides a model, it should be remembered that its severe fiscal problems combined with the earthquake to create a unique ‘burning platform’. In turn, this led to significant ‘buy-in’ to the reforms from the local health-care workforce.

a. Schluter et al. (2016).

b. McGeoch et al. (2015).

c. Timmins and Ham (2013).

- **Delivery System Design:** the HealthOne programme in NSW uses GP liaison nurses to coordinate the delivery of Commonwealth-funded and state-funded care services.
- **Decision Support:** the Chronic Care for Aboriginal People programme uses guidelines developed from a project that identified effective care practices for Aboriginal people.
- **Clinical Information Systems:** the Fitzroy Valley Partnership involves sharing electronic medical records.
- **Self-Management Support:** the My Health Guardian programme focuses on giving people the information and support they need to manage their health.
- **The Community:** the Aged Care Emergency model at John Hunter Hospital coordinates various care providers in the community, including individual carers, aged care facilities and GPs.

Table 3.2 on the following page also shows these initiatives were all driven by an agent or organisation other than the patient's GP. The change to the model of care was delivered at a system-level, typically either through cooperation among providers or the top-down coordination of providers. Although GPs often played an important role in these programmes, they were never relied on to be the sole coordinator of care or initiator of change.⁵⁵ This is not unexpected, given that the need is to improve the primary care system, not just general practice. The need is also to improve the relationship between primary care, medical specialists, allied health professionals and hospitals. General practices cannot improve care paths by themselves, neither can they improve hospital discharge planning.

55. The cost effectiveness of the individual programmes is also a relevant consideration. Although we do not review the costs of these programmes in this report, we consider that systemic implementation of more integrated care is likely to maximise cost effectiveness.

3.2.4 Primary Health Networks are best placed to deliver reform

Primary Health Networks (PHNs) are best placed to provide the type of system-level coordination that has proven to be effective. Indeed, PHNs were set up with the explicit objective of improving coordination, effectiveness and efficiency of the care services in their respective areas.

Yet the capacity and authority of PHNs should be boosted. In particular, they should be given the role of systems manager for primary care, a role which – as discussed in Section 1.2 – is only partly fulfilled by the Commonwealth at present.

Table 3.2: Many successful Australian initiatives reflect Wagner's Chronic Care Model and have not been driven by GPs

Initiative	Agent		Elements of Wagner's Chronic Care Model					
	GP	Other	Health System	Delivery System Design	Decision Support	Clinical Information Systems	Self-Management Support	The Community
Silver Chain Home Hospital		✓	✓	✓	?	✓	✓	✓
My Health Guardian		✓			?	✓	✓	
HealthOne (NSW)		✓	✓	✓	?	✓		✓
Chronic Care for Aboriginal People (NSW)		✓	✓	✓	✓	✓	✓	✓
NSW Chronic Care Collaborative		✓	✓	✓	✓	✓	✓	✓
Community Acute Post-Acute Care (CAPAC) Service (NSW)		✓	✓	✓	?	✓	✓?	✓
Hospital Admission Risk Program (HARP) (VIC)		✓	✓	✓	?	✓	✓	✓
Inala Chronic Disease Management Service (QLD)		✓	✓	✓	?	✓	✓	✓
Fitzroy Valley Partnership (WA)		✓	✓	✓	?	✓	✓	✓
Aged Care Emergency, John Hunter Hospital (NSW)		✓	✓	✓	?	✓	✓	✓
Restoring Health Program, St. Vincent's Hospital (VIC)		✓	✓	✓	?	✓?	✓	✓
Pulmonary rehabilitation program, Fairfield Hospital (NSW)		✓	✓	✓	?	?	✓	

Notes: The level of focus on the Decision Support element is difficult to assess on the information reviewed because it partly refers to the extent to which providers in each initiative provided care consistent with the most up-to-date clinical guidelines.

Source: See Appendix A.

4 The way forward

Primary care in Australia is a renovator's opportunity. Numerous visits to emergency departments and inpatient admissions could be prevented with better management in primary care. The evidence suggests that general practice should make a much stronger contribution to better health care, particularly for people with chronic disease.

Health Care Homes are potentially an important part of the renovation. They could provide more comprehensive and integrated care for people with chronic disease.

But we have shown in this report that some of the essential foundations for the renovation are missing.

For example, Australia does not yet have enough data to develop a blended payments model that includes capitation payments. Risk adjustment for capitation payments has not yet been developed. The best ways to measure the quality of patient care have not yet been decided. Nor is there sufficient support for primary care providers to introduce new data systems, payment models and service-delivery measures so they can provide integrated care for people with chronic conditions.

All these are required to ensure better outcomes for patients and to slow hospital cost growth by reducing potentially preventable admissions. There is no quick fix. These foundations can't be built overnight. Even when they are built, change will take time as general practices and other elements of the primary care system learn to work together in new ways.⁵⁶

Australia cannot simply import a model from overseas. The details of what is right for Australian primary care need to be worked through with

all stakeholders in the system. A consensus needs to be built. However, the renovation should start now with two key foundations: getting the data necessary to manage the primary care system, and improving local planning and coordination of primary care.

The expected lifting of the freeze on Medicare rebates for GPs provides the catalyst for the Commonwealth to negotiate strategic reforms. It would be a lost opportunity for Australia if the Government simply reinstated indexation without winning agreement on primary care reforms to improve patient care and cut hospital costs.

4.1 Start by paying for better data

Without much better data on primary care patients, services and patient outcomes, we are managing in the dark. If we don't know what the baseline is, we cannot measure progress. Better data is fundamental to any systematic reform of primary care.

The practices that act as Health Care Homes will provide some helpful information, but system-wide data is needed.

As a first step, an additional payment should be made to general practices that agree to collect and report data on patient characteristics, conditions, services and patient outcomes. Most general practices already use electronic patient management systems that collect this information. The data should be provided to Primary Health Networks (PHNs), and then reported by PHNs to the Commonwealth in a way that protects patient privacy.⁵⁷

General practices that agree to participate should get a quarterly payment. The payment would reflect the number of patients who attend

56. Afendulis et al. (2017).

57. Liaw et al. (2015).

the practice, using an existing measure, the Standardised Whole Patient Equivalent.⁵⁸ The level of the payment would be commensurate with the amount that would otherwise have been paid to index Medicare rebates for GPs.

In the first instance, the required information could simply be peeled off existing practice software, subject to patient privacy safeguards.⁵⁹ There would be no additional red-tape burden on practitioners.

A national data set is important for monitoring service quality and patient outcomes. Once new arrangements have been established, payments should be adjusted depending on service quality and patient outcomes. Work should start now on developing an agreed Australian quality and patient outcomes framework for primary care.⁶⁰

To date, integrated information on patients, services, patient outcomes and costs has only been available through the Bettering the Evaluation and Care of Health (BEACH) data set.⁶¹ But that was based on only a limited sample of GP visits. The National Prescribing Service also collects data (NPS MedicineInsight) but that is also sample data. A comprehensive Minimum Data Set would provide information on different groups of patients across all general practices.

A Minimum Data Set for primary care should be developed using standard definitions and codes which can be linked to those used for hospitals.⁶² These should be incorporated into patient management systems used by general practice (e.g. Medical Director, Best Practice).

58. Department of Human Services (Cth) (2017).

59. For example, we were able to use this data for our previous report, *Chronic failure in primary care*.

60. The Australian Commission on Safety and Quality in Health Care has developed a set of *Practice-level indicators of safety and quality for primary health care*, but these are only voluntary and have not been implemented systematically.

61. Family Medicine Research Centre (2016).

62. For example, codesets and definitions based on SNOMED CT, an international health care terminology standard.

The Minimum Data Set should be generated as part of normal electronic medical record keeping. It need not require additional data entry.

A comprehensive framework for assessing quality and patient outcomes should be introduced in Australia as part of the Minimum Data Set. This has been done overseas. The most comprehensive model is the English Quality and Outcomes Framework for general practice which has been in place for more than a decade.⁶³ The English scheme is not without its problems but that experience, and the ideas for replacement schemes, should inform the development of an Australian scheme.⁶⁴

The quality indicators developed for Australia should be based on contemporary approaches to measuring quality in primary care, potentially including monitoring practitioner adherence to agreed models of care.⁶⁵ The Australian model should focus on the patient characteristics and conditions and complications which are preventable through better primary care and which increase risk of hospital admission. The patient outcomes indicators should include clinical indicators, morbidity and mortality measures, and hospital and residential care admissions. Of course none of this is possible in the absence of good data on what goes on in general practice.

The quality and patient outcomes indicators should also be linked to the health pathways currently being developed through PHNs.

Once a quality and patient outcomes framework is in place, payments to general practices for the data they provide should be increased or decreased depending on the performance of the practice. These payments would replace the existing Practice Incentives Program, and would provide direct, financial incentives for better primary care.

63. McDonald et al. (2009).

64. Doran et al. (2014); and Ashworth and Gulliford (2017).

65. Young et al. (2017).

Strengthening the external accountability of general practices will provide an incentive for practices to improve their internal management.⁶⁶

4.2 The Commonwealth and the states need to work together to making lasting improvements

Better data collection and the introduction of incentives to improve quality and patient outcomes are important first steps on the path to a renovated primary care system. But if the job is to be done properly, the Commonwealth and the states will need to develop a joint strategy over the next decade to better integrate primary care and hospital services. Without an overarching strategy, the piecemeal progress of the past two decades is likely to be repeated.

Primary care providers, including general practices, will need significant support throughout the reform process. General practices on their own cannot achieve systemic change.

Data will need to be collected and aggregated from general practices to provide feedback on costs, quality and patient outcomes to all practices in their region. More integrated care will require system-wide change. It will involve GPs, pharmacies, specialist medical practitioners, pathology, hospitals and extended-care providers. At the moment no one is responsible for such cooperation and integration within local health systems.

Some of the architecture required is already in place. The Commonwealth is committed to growth in its contribution to hospital funding of up to 6.5 per cent a year until 2020. Both levels of government are committed to bilateral agreements to improve care and reduce hospital admissions for people with complex and chronic conditions. The states have agreed to work with the Commonwealth in selected regions on issues such as planning, coordination, information sharing, education,

and pooled funding. Initiatives to improve primary care have already begun in some states.

These arrangements need to be supplemented by an overarching policy that pulls the Commonwealth and pushes the states towards improvement in every part of Australia. Improvement should not be limited to those general practices selected to be Health Care Homes.

These arrangements should also be enhanced in the next round of Commonwealth-state agreements, for 2020 and beyond. Primary care agreements should be struck between the Commonwealth and each state. Agreements should specify the investment the Commonwealth and the state will make to improve primary care for patients. Targets for reducing hospital admissions should be set. Performance should be monitored and the Commonwealth, the state and the PHN held accountable for progress.

Negotiations for the 2020 hospital agreements should be accompanied by negotiations for 2020 primary care agreements. These negotiations should start now.

4.3 Primary Health Networks need to be given a central role

As part of the new Commonwealth-state agreements, specific tripartite agreements should be struck with every PHN around Australia. These should specify funding and results targets, and commit the Commonwealth, the state and the PHN to specific local system changes to improve patient care and reduce potentially preventable hospital admissions.⁶⁷

These tripartite agreements should provide a new basis for cooperation between Commonwealth and state governments, helping to overcome the disjunctions caused by Australia's fractured federalism.⁶⁸

66. Pimperl et al. (2017).

67. Duckett and Griffiths (2016).

68. Duckett and Swerissen (2007).

The PHNs should be strengthened as locally governed organisations to improve care for people in their area. The PHNs should be accountable to both the Commonwealth and the state, but micro-managed by neither.

Each PHN should have much greater responsibility for improving the integration of care in their region. Their mandate should make clear that they are responsible for supporting and developing local general practices, and coordinating system changes. PHNs should be required to incorporate strategies for integrated care into their planning and budget. And they should report annually on progress.

The data PHNs collect from GPs could be used to identify gaps in service provision. For example, if a general practice's pattern of care suddenly changes to include more mental health assessments, this might signal a need for more specialist mental health services in that region.

PHNs should build on the improvement initiatives that have worked in the past, such as the primary care collaboratives.⁶⁹ However, the knowledge base about how to create effective 'communities of practice' is still developing – including how engaging dispersed practices in rural and remote Australia is addressed – so it is important that PHN local improvement initiatives are evaluated.⁷⁰

PHNs will need to strengthen their skill sets in order to discharge this stronger and more central role in the health system.

4.3.1 A potential primary care dividend

Where reductions in the growth of hospital admissions are achieved, the Commonwealth should realise a dividend by reducing the growth of its hospital funding to the states. The Commonwealth may be able to

69. Schattner et al. (2010); and Knight et al. (2012).

70. Li et al. (2009); Ranmuthugala et al. (2011a); and Ranmuthugala et al. (2011b).

phase down its current 6.5 per cent growth cap over the life of the new, post-2020 hospital agreements.

Similarly the states, in a coordinated effort with the Commonwealth, could invest in primary care prevention and substitution of hospital admissions to reduce their hospital spending growth.⁷¹

4.3.2 Agreements as a platform for future improvement

Agreements between PHNs and primary health care providers (*i.e.* Primary Care Practice Agreements) could provide a mechanism for negotiating changes in practice with GPs and other health care providers to improve patient care.

Once new data collection and reporting, quality and patient outcomes measures, and payments are in place, PHNs could commission and manage extra payments from the Commonwealth and the states to further improve the coordination of care in their area. PHNs will have the data and could also assess general practices to recommend levels of reward payments such as in a revamped Practice Incentive Program, and administer these payments. This would enhance the PHNs' ability to shape the primary care system in their region.

PHNs should feed back to general practices their own data, and how they are tracking compared to their peers, thus enabling practices to benchmark their own performance and work out where they can improve.

71. Despite a primary care dividend providing a potential source of ongoing funding for this investment, there may be one-off, transition costs associated with investing in the necessary data systems at the primary care level. Imison et al. (2017) find that in the UK such fixed costs have sometimes been neglected when assessing the economic benefit of primary care reforms.

4.3.3 Don't forget prevention and equity

The PHNs should focus on the most disadvantaged. In our 2016 report *Perils of place*, we showed that parts of Australia had very high rates of potentially preventable hospital admissions for a decade. We recommended that PHNs take a lead in developing local, place-based interventions to reduce those admissions.

In parallel with the changes to the primary care system we have discussed in this report, the Commonwealth, the states and the PHNs need to work with other sectors to improve equity of health outcomes by addressing broader social determinants of health.⁷²

4.4 The benefits of reform are significant

Australia's current system of primary health care is failing sufferers of chronic disease. Our report, *Chronic failure in primary care*, described these failings and the substantial scope for improvement.

We also know from Australian and overseas experience that better integrated care can reduce hospital admissions.⁷³ As discussed in Box 2 on page 8, potentially preventable hospital admissions accounted for at least \$322 million of expenditure in 2010-11.

72. Baum et al. (2009).

73. See Chapter 3.

5 Conclusion

The problems with primary care in Australia have been apparent for at least two decades. Chronic conditions have become a much greater burden. Care for patients with chronic conditions is fragmented; patient outcomes can and should be improved; unnecessary admissions to hospital can be reduced; and resources could be used much more efficiently.

If these problems are to be addressed, better integration of care is essential, and that requires better systems management. Initiatives like the Health Care Homes trials are useful but they are not enough. Individual general practices cannot and should not be expected to drive systems change.

A more strategic 'whole of system' approach that brings together data systems, performance management, care pathways, service development, funding reform and systems management is required.

The Commonwealth and the states need to agree on delegated systems

managers for local populations. Primary Health Networks are in the best position to take on this role.

This will take time – perhaps a decade or so. But it is important to have a plan and make a start. The expected lifting of the freeze on Medicare rebates provides an opportunity for the Commonwealth to pay GPs for much more comprehensive patient data. As better data becomes available, standards for care quality and patient outcomes can be set and monitored, and payment systems reformed to reward practices that get the best results.

The benefits of reform are significant. Hospital and primary care costs are growing, particularly for people aged over 65. Many hospital admissions could be avoided with better primary care systems, saving hundreds of millions of dollars each year.

More importantly, dramatic improvements are possible in the care of patients with chronic and complex conditions.

A Examples of Australian initiatives that have reduced hospital demand

Name	Description	Results
Non-government		
Silver Chain Home Hospital (McGowan et al. (2013))	Silver Chain group is a non-profit health care provider. The Home Hospital programme involves hospital substitution services, hospital avoidance, and post-discharge services.	Potentially avoidable hospitalisations were 29% lower in the Perth metropolitan health system in the year following the introduction of Home Hospital (2010-11) relative to the year prior (2007-08).
My Health Guardian (Hamar et al. (2015))	A free online programme offered to HCF members. Involves health assessments, health action plans, personalised health support, education and health behaviour tracking. Registered nurses provide telephone support to assist self-management.	Over the period 2010 to 2013, the likelihoods of hospital admission and re-admission for a sample of people with heart disease and/or diabetes using the programme were 27% and 45% lower, respectively, relative to a control group.
State-level		
HealthOne (NSW) (McNab et al. (2013))	Brings together Commonwealth- and state-funded care services. GP liaison nurses identify and coordinate care needs across multiple disciplines.	<p>For 125 patients at the Mount Druitt hub, an analysis of the 12 months before and after enrolment in the programme found significant reductions in average:</p> <ul style="list-style-type: none"> • number of emergency department presentations per patient (3.1 versus 2.6 per year); • time spent by patient in emergency departments (12.5 versus 6.6 hours); and • length of stay in hospital (6.3 versus 3.7 hours). <p>There was also an insignificant reduction in average admissions per patient (1.4 versus 1.2 per year).</p>

Name	Description	Results
Chronic Care for Aboriginal People (NSW) (R. Gordon and Richards (2012))	Seeks to provide better access to chronic disease services for Aboriginal people, as well as provide 'best practice' care consistent with the eight elements identified through the Walgan Tilly project as being effective for the care of Aboriginal people.	Follow-up in the 48 hours following discharge from hospital was found to reduce re-admissions by 4%.
NSW Chronic Care Collaborative (W. Schofield et al. (2005))	Brought together teams from multiple hospitals and care providers to identify and then disseminate improved care practices for patients with heart failure and chronic obstructive pulmonary disease.	<p>As a proportion of all NSW admissions:</p> <ul style="list-style-type: none"> Heart failure admissions were significantly lower for October, November and December in 2004 than for the same months in 2003. Chronic obstructive pulmonary disease 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. <p>Findings were tentative.</p>
Community Acute Post-Acute Care (CAPAC) Service (NSW) (Department of Health (NSW) (2008))	Provided at the level of local health districts, service involves multidisciplinary in-home care in order to avoid hospital admission and provide for earlier discharge in the case of a post-acute episode.	At one metropolitan Sydney hospital, 30% of cellulitis presentations to the emergency department were seen by the CAPAC service, avoiding admissions to hospital which equated to 741 bed-days saved.

Name	Description	Results
Hospital Admission Risk Program (HARP) (VIC) (Department of Human Services (VIC) (2006))	HARP funded hospital- and local-level projects with the objective of developing new approaches to patient care, thereby reducing hospital admissions. The majority of projects focused on improving communication and cohesion between services, the management of 'at risk' patients, and the proactive management of patients.	<p>HARP patients had:</p> <ul style="list-style-type: none"> • 35% fewer emergency department attendances; • 52% fewer emergency department admissions; and • 41 fewer emergency bed days. <p>The reduced need for hospital services was equivalent to around one emergency department attendance, two emergency department admissions, and six days spent in hospital each year for every HARP patient.</p>
Local-level		
Inala Chronic Disease Management Service (QLD) (Zhang et al. (2015))	Patients are referred by their GP to a 'beacon practice', where specially trained GPs and a multidisciplinary team devise a management plan for them.	Over a two-year period, patients using the service were nearly half as likely to have a potentially preventable, diabetes-related hospital admission than those receiving regular care.
Fitzroy Valley Partnership (WA) (Reeve et al. (2015))	Partnership between hospital, primary and community care services. Involves sharing of governance, funding and electronic records.	Evaluation of a six-year period found decreasing trend in the proportion of hospital admissions requiring emergency evacuation. Trend in hospital admissions remained relatively flat.
Hospital-level		
Aged Care Emergency, John Hunter Hospital (NSW) (Conway and Higgins (2012))	Provides triage, consultancy, clinical support, and advice for aged care facility staff, carers and GPs. A clinical nurse consultant plays a central role.	Between 2010 and 2011, 35% reduction in length of stay, 16% reduction in emergency department presentations, and a 19% reduction in emergency department admissions for patients aged 75 years and older from residential aged care facilities.

Name	Description	Results
Restoring Health Program, St. Vincent's Hospital (VIC) (Howard et al. (2008))	A HARP programme providing a multidisciplinary model of care. Key features include hospital-based key contact liaisons, community-based outreach nursing and allied health staff, outpatient disease-specific rehabilitation programs, and a rapid access outpatient clinic for urgent medical assessment	Emergency department presentations, hospital admissions and length of stay decreased significantly between six months pre-recruitment and six months post-recruitment for patients with chronic respiratory diseases, diabetes and heart failure.
Pulmonary rehabilitation program, Fairfield Hospital (NSW) (Hui and Hewitt (2003))	Operating out of an outpatient physiotherapy clinic, involved patient sessions with a physiotherapist under the supervision of a doctor.	Led to lower rates of hospitalisation and shorter lengths of stay in the 12 months following completion of the programme.

Sources: As noted in table, as well as Erny-Albrecht et al. (2016) and Katterl et al. (2012).

Bibliography

- ABS (2014). *Australian Historical Population Statistics, 2014*. cat. no. 3105.0.65.001. Australian Bureau of Statistics. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3105.0.65.0012014?OpenDocument>.
- (2016a). *National Health Survey: First Results, 2014-15*. cat. no. 4364.0.55.001. Australian Bureau of Statistics. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4364.0.55.001Main+Features100012014-15?OpenDocument>.
- (2016b). *Australian Demographic Statistics, Jun 2016*. cat. no. 3101.0. Australian Bureau of Statistics. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/9D56A542A17EF188CA2580EB001335A8?opendocument>.
- (2017a). *Australian Demographic Statistics, Sep 2016*. cat. no. 3101.0. Australian Bureau of Statistics. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/BCDDE4F49C8A3D1ECA257B8F00126F77?opendocument>.
- (2017b). *Consumer Price Index, Australia, Dec 2016*. cat. no. 6401.0. Australian Bureau of Statistics. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/3CCCCFBE275F7C48CA25810C001B84E8?opendocument>.
- Afendulis et al. (2017). Afendulis, C. C., Hatfield, L. A., Landon, B. E., Gruber, J., Landrum, M. B., Mechanic, R. E., Zinner, D. E. and Chernew, M. E. “Early Impact Of CareFirst’s Patient-Centered Medical Home With Strong Financial Incentives”. *Health Affairs* 36.3, pp. 468–475.
- Ashworth, M. and Gulliford, M. (2017). “Funding for general practice in the next decade: life after QOF”. *British Journal of General Practice* 67.654, pp. 4–5.
- Australian Institute of Health and Welfare (2007). *Australian hospital statistics 2005-06*. Australian Institute of Health and Welfare. <http://www.aihw.gov.au/publication-detail/?id=6442467993&tab=2>.
- (2010). *Health expenditure Australia 2008-09*. Australian Institute of Health and Welfare. <http://www.aihw.gov.au/publication-detail/?id=6442472450>.
- (2014). *Australia’s health 2014*. Australian Institute of Health and Welfare. <http://www.aihw.gov.au/publication-detail/?id=60129547205>.
- (2016a). *Health expenditure Australia 2014-15*. Australian Institute of Health and Welfare. <http://www.aihw.gov.au/publication-detail/?id=60129557170>.
- (2016b). *Admitted patient care 2014–15: Australian hospital statistics*. Australian Institute of Health and Welfare. <http://www.aihw.gov.au/publication-detail/?id=60129554702&tab=3>.
- Baum et al. (2009). Baum, F. E., Bégin, M., Houweling, T. A. J. and Taylor, S. “Changes Not for the Fainthearted: Reorienting Health Care Systems Toward Health Equity Through Action on the Social Determinants of Health”. *American Journal of Public Health* 99.11, pp. 1967–1974.
- Bodenheimer et al. (2002a). Bodenheimer, T., Wagner, E. H. and Grumbach, K. “Improving primary care for patients with chronic illness”. *Jama* 288.14, pp. 1775–1779.
- Bodenheimer et al. (2002b) ———. “Improving primary care for patients with chronic illness: the chronic care model, Part 2”. *Jama* 288.15, pp. 1909–1914.
- Boxall, A.-M. and Gillespie, J. (2013). *Making Medicare: the politics of universal health care in Australia*. UNSW Press.

- Carlin et al. (2016). Carlin, C. S., Flottemesch, T. J., Solberg, L. I. and Werner, A. M. "System Transformation in Patient-Centered Medical Home (PCMH): Variable Impact on Chronically Ill Patients' Utilization". *The Journal of the American Board of Family Medicine* 29.4, pp. 482–495.
- Caughey et al. (2017). Caughey, G. E., Pratt, N. L., Barratt, J. D., Shakib, S., Kemp-Casey, A. R. and Roughead, E. E. "Understanding 30-day re-admission after hospitalisation of older patients for diabetes: identifying those at greatest risk". *Med J Aust* 206.4, pp. 170–175.
- Clinical Epidemiology and Health Service Evaluation Unit (2009). *Potentially preventable hospitalisations: a review of the literature and Australian policies*. <https://www.safetyandquality.gov.au/publications/potentially-preventable-hospitalisations-a-review-of-the-literature-and-australian-policies-final-report/>.
- COAG (2016). *Heads of Agreement between the Commonwealth and the States and Territories on Public Hospital Funding*. Council of Australian Governments. <https://www.coag.gov.au/about-coag/agreements/heads-agreement-between-commonwealth-and-states-and-territories-public>.
- Conway, J. and Higgins, I. (2012). *The implementation of a nurse led model of care for older people in the emergency department at John Hunter Hospital*. https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0007/274147/ace-final-report-jhh.pdf.
- Coote, W. (2009). "General practice reforms, 1989–2009". *Medical Journal of Australia* 191.2, pp. 58–61.
- Department of Health (Cth) (2017a). *Health Care Homes: Reform of the Primary Health Care System*. <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes>.
- (2017b). *Health Care Homes: for health professionals*. <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-care-homes-professional>.
- Department of Health (NSW) (2008). *Auditor General Report: Delivering health care out of hospital*. http://www.audit.nsw.gov.au/ArticleDocuments/140/182_Delivering_Health_Care.pdf.aspx?Embed=Y.
- Department of Human Services (Cth) (2017). *Calculating the SWPE value*. <https://www.humanservices.gov.au/health-professionals/enablers/calculating-swpe-value>.
- Department of Human Services (VIC) (2006). *Improving care: Hospital Admission Risk Program*. <https://web.archive.org/web/20120329112050/http://www.health.vic.gov.au/harp/downloads/improvingcare.pdf>.
- Doran et al. (2014). Doran, T., Kontopantelis, E., Reeves, D., Sutton, M. and Ryan, A. M. "Setting performance targets in pay for performance programmes: what can we learn from QOF?" *BMJ : British Medical Journal* 348.
- Dorling et al. (2015). Dorling, G., Fountaine, T., McKenna, S. and Suresh, B. *The evidence for integrated care*. McKinsey & Company. <http://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-evidence-for-integrated-care>.
- Duckett, S. (2014). "Higher health co-payments will hit the most vulnerable". *The Conversation*. <https://theconversation.com/higher-health-co-payments-will-hit-the-most-vulnerable-29590>.
- Duckett, S. and Swerissen, H. (2007). "Federalism and health: negotiating the problems of "fiscal squabbles", "waiting" and "waste"". *Analysing Australian health policy: A problem orientated approach*. Ed. by S. Barraclough and H. Gardner. Elsevier.
- Duckett, S. and Breadon, P. (2014). *Out-of-pocket costs: hitting the most vulnerable hardest*, Grattan Institute submission to the Senate Standing Committee on Community Affairs Inquiry into the out-of-pocket costs in Australian healthcare. Grattan Institute. <https://grattan.edu.au/news/new-out-of-pocket-costs-will-hit-people-with-empty-pockets/>.

- Duckett et al. (2016). Duckett, S., Swerissen, H. and Wiltshire, T. *A sugary drinks tax: recovering the community costs of obesity*. Report No. 2016-15. Grattan Institute. <https://grattan.edu.au/report/a-sugary-drinks-tax-recovering-the-community-costs/>.
- Duckett, S. and Griffiths, K. (2016). *Perils of place: identifying hotspots of health inequality*. Report No. 2016-10. Grattan Institute. <https://grattan.edu.au/report/perils-of-place-identifying-hotspots-of-health-inequality/>.
- Dunlevy, S. (2017). *Patients will be pushed to use 'generic drugs' as medicine prices fall in the upcoming federal budget*. 21 April. news.com.au. <http://www.news.com.au/lifestyle/health/health-problems/patients-will-be-pushed-to-use-generic-drugs-as-medicine-prices-fall-in-the-upcoming-federal-budget/news-story/84d5aa7906bfc891fe91df856966ba24>.
- Erny-Albrecht et al. (2016). Erny-Albrecht, K., Oliver-Baxter, J. and Bywood, P. *Primary health care-based programmes targeting potentially avoidable hospitalisations in vulnerable groups with chronic disease. PHCRIS Policy Issue Review*. Primary Health Care Research & Information Service. <http://www.phcris.org.au/publications/policyreviews/issues/pahs.php>.
- Family Medicine Research Centre (2016). *Bettering the Evaluation and Care of Health (BEACH)*. <http://sydney.edu.au/medicine/fmrc/beach/>.
- General Practice Consultative Committee (1992). *The future of general practice: a strategy for the nineties and beyond*. Australian Medical Association, Department of Health, Housing, Community Services, and the Royal Australian College of General Practitioners.
- Gibson et al. (2013). Gibson, O. R., Segal, L. and McDermott, R. A. "A systematic review of evidence on the association between hospitalisation for chronic disease related ambulatory care sensitive conditions and primary health care resourcing". *BMC health services research* 13.1, p. 336.
- Gonçalves-Bradley et al. (2016). Gonçalves-Bradley, D. C., Lannin, N. A., Clemson, L. M., Cameron, I. D. and Shepperd, S. "Discharge planning from hospital". *The Cochrane Library*.
- Gordon, R. and Richards, N. (2012). "The Chronic Care for Aboriginal People program in NSW". *NSW Public Health Bulletin* 23.3-4, pp. 77–80.
- J. Gordon et al. (2016). Gordon, J., Miller, G. and Britt, H. *Reality check - reliable national data from general practice electronic health records*. Deeble Institute. <http://ahha.asn.au/publication/issue-briefs/deeble-institute-issues-brief-no-18-reality-check-reliable-national-data>.
- Greene et al. (2015). Greene, J., Hibbard, J. H. and Overton, V. "Large performance incentives had the greatest impact on providers whose quality metrics were lowest at baseline". *Health Affairs* 34.4, pp. 673–680.
- Hamar et al. (2015). Hamar, G. B., Rula, E. Y., Coberley, C., Pope, J. E. and Larkin, S. "Long-term impact of a chronic disease management program on hospital utilization and cost in an Australian population with heart disease or diabetes". *BMC health services research* 15.1, p. 174.
- Howard et al. (2008). Howard, R., Sanders, R. and Lydall-Smith, S. "The implementation of Restoring Health—a chronic disease model of care to decrease acute health care utilization". *Chronic respiratory disease* 5.3, pp. 133–141.
- Hui, K. P. and Hewitt, A. B. (2003). "A simple pulmonary rehabilitation program improves health outcomes and reduces hospital utilization in patients with COPD". *CHEST Journal* 124.1, pp. 94–97.
- Imison et al. (2017). Imison, C., Curry, N., Holder, H., Castle-Clarke, S., Nimmons, D., Appleby, J., Thorlby, R. and Lombardo, S. *Shifting the balance of care: Great expectations*. Nuffield Trust. <https://www.nuffieldtrust.org.uk/research/shifting-the-balance-of-care-great-expectations>.

- Katterl et al. (2012). Katterl, R., Anikeeva, O., Butler, C., Brown, L., Smith, B. and Bywood, P. *Potentially avoidable hospitalisations in Australia: Causes for hospitalisations and primary health care interventions. PHCRIS Policy Issue Review*. Primary Health Care Research & Information Service. <http://www.phcris.org.au/resources/item.php?id=8388&spindex=14&src=redirect>.
- Knight et al. (2012). Knight, A. W., Caesar, C., Ford, D., Coughlin, A. and Frick, C. "Improving primary care in Australia through the Australian Primary Care Collaboratives Program: a quality improvement report". *BMJ Quality & Safety*.
- Lakdawalla et al. (2015). Lakdawalla, D., Shafrin, J., Lucarelli, C., Nicholson, S., Khan, Z. M. and Philipson, T. J. "Quality-Adjusted Cost Of Care: A Meaningful Way To Measure Growth In Innovation Cost Versus The Value Of Health Gains". *Health Affairs* 34.4, pp. 555–561.
- Ley, S. (2016). *Health Care Homes to keep chronically-ill out-of-hospital*. Media Release, 31 March. [http://www.health.gov.au/internet/ministers/publishing.nsf/Content/B54E87C87AA06842CA257F8700210C62/\\$File/SL024.pdf](http://www.health.gov.au/internet/ministers/publishing.nsf/Content/B54E87C87AA06842CA257F8700210C62/$File/SL024.pdf).
- Li et al. (2009). Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C. and Graham, I. D. "Use of communities of practice in business and health care sectors: A systematic review". *Implementation Science* 4.27.
- Liaw et al. (2015). Liaw, S.-T., Boyle, D., Pearce, C. and Britt, H. *Big data in primary care: how should it be governed?* 2015 Primary Health Care Research Conference: Program & Abstracts. <http://www.phcris.org.au/resources/item.php?id=8296&spindex=3>.
- Martínez-González et al. (2014). Martínez-González, N. A., Djalali, S., Tandjung, R., Huber-Geismann, F., Markun, S., Wensing, M. and Rosemann, T. "Substitution of physicians by nurses in primary care: a systematic review and meta-analysis". *BMC health services research* 14.1, p. 214.
- Martínez-González et al. (2015). Martínez-González, N. A., Tandjung, R., Djalali, S. and Rosemann, T. "The impact of physician–nurse task shifting in primary care on the course of disease: a systematic review". *Human resources for health* 13.1, p. 55.
- McDonald et al. (2009). McDonald, R., White, J. and Marmor, T. R. "Paying for Performance in Primary Medical Care: Learning about and Learning from "Success" and "Failure" in England and California". *Journal of Health Politics Policy and Law* 34.5, pp. 747–776.
- McGeoch et al. (2015). McGeoch, G., McGeoch, P. and Shand, B. "Is HealthPathways effective? An online survey of hospital clinicians, general practitioners and practice nurses". *NZ Med J* 128.1408, pp. 2010–2019.
- McGowan et al. (2013). McGowan, C., Gregory, A. and Atkinson, L. *Non-hospital based health services in South Australia*. Silver Chain. <https://web.archive.org/web/20150323132721/http://silverchain.org.au/assets/GROUP/publications/Non-hospital-based-health-services-in-SA.pdf>.
- McNab et al. (2013). McNab, J., Mallitt, K.-A. and Gillespie, J. *Report of the Evaluation of HealthOne Mount Druitt*. Menzies Centre for Health Policy. <http://sydney.edu.au/medicine/public-health/menzies-health-policy/research/homd.php>.
- National Health Performance Authority (2015). *Healthy communities: frequent GP attenders and their use of health services in 2012-13*. National Health Performance Authority. <http://www.myhealthycommunities.gov.au/our-reports/frequent-gp-attenders-use-health-services/march-2015>.
- National Prescribing Service (2008). "General practice clinical data and quality prescribing: Islands of information in an ocean of opportunity". *Report on proceedings, National Prescribing Service Stakeholder Forum*. National Prescribing Service. http://www.nps.org.au/__data/assets/pdf_file/0004/64543/NPS_Stakeholder_Forum_Report.pdf.

- NHS Employers (2016). *2016/17 General Medical Services (GMS) contract Quality and Outcomes Framework (QOF)*.
<http://www.nhsemployers.org/~media/Employers/Documents/Primary%20care%20contracts/QOF/2016-17/2016-17%20QOF%20guidance%20documents.pdf>.
- OECD (2015). *Health at a Glance 2015: How does Australia compare?* Organisation for Economic Co-operation and Development.
<http://www.oecd.org/australia/Health-at-a-Glance-2015-Key-Findings-AUSTRALIA.pdf>.
- (2016). *Better Ways to Pay for Health Care*.
<http://www.oecd.org/publications/better-ways-to-pay-for-health-care-9789264258211-en.htm>.
- Oliver-Baxter, J. and Brown, L. (2013). *Primary Health Care Funding Models*. Primary Health Care Research & Information Service.
- Osborn et al. (2016). Osborn, R., Squires, D., Doty, M. M., Sarnak, D. O. and Schneider, E. C. "In New Survey Of Eleven Countries, US Adults Still Struggle With Access To And Affordability Of Health Care". *Health Affairs*, pp. 10–1377.
- Parker, S. and Fuller, J. (2016). "Are nurses well placed as care co-ordinators in primary care and what is needed to develop their role: a rapid review?" *Health & social care in the community* 24.2, pp. 113–122.
- PBO (2015). *Medicare Benefits Schedule: Spending trends and projections*. Report no. 04/2015. Parliamentary Budget Office.
http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Budget_Office/Reports/Research_reports/Medicare_Benefits_Schedule?CalendarWidgetTarget=31-01-2016&tab=tab2bt.
- Pimperl et al. (2017). Pimperl, A. F., Rodriguez, H. P., Schmittiel, J. A. and Shortell, S. M. "The Implementation of Performance Management Systems in U.S. Physician Organizations". *Medical Care Research and Review*. In press.
- Purdy, S. (2010). *Avoiding hospital admissions: What does the research evidence say?* The King's Fund.
<https://www.kingsfund.org.uk/sites/files/kf/Avoiding-Hospital-Admissions-Sarah-Purdy-December2010.pdf>.
- RACGP (2015). *RACGP Submission to the Standing Committee on Health Inquiry into chronic disease prevention and management in primary healthcare*. Royal Australian College of General Practitioners.
<http://www.racgp.org.au/yourracgp/news/reports/20150814chronic/>.
- (2016). *Government fails to deliver on Health Care Homes*. Royal Australian College of General Practitioners.
[http://www.racgp.org.au/yourracgp/news/media-releases/government-fails-to-deliver-on-health-care-homes-\(1\)/](http://www.racgp.org.au/yourracgp/news/media-releases/government-fails-to-deliver-on-health-care-homes-(1)/).
- Ranmuthugala et al. (2011a). Ranmuthugala, G., Plumb, J. J., Cunningham, F. C., Georgiou, A., Westbrook, J. I. and Braithwaite, J. "How and why are communities of practice established in the healthcare sector? A systematic review of the literature". *BMC Health Services Research* 11.273.
- Ranmuthugala et al. (2011b). Ranmuthugala, G., Cunningham, F. C., Plumb, J. J., Long, J., Georgiou, A., Westbrook, J. I. and Braithwaite, J. "A realist evaluation of the role of communities of practice in changing healthcare practice". *Implementation Science* 6.49.
- Reeve et al. (2015). Reeve, C., Humphreys, J., Wakeman, J., Carter, M., Carroll, V. and Reeve, D. "Strengthening primary health care: achieving health gains in a remote region of Australia". *Med J Aust* 202.9, pp. 483–487.
- Rothman, A. A. and Wagner, E. H. (2003). "Chronic illness management: what is the role of primary care?" *Annals of Internal Medicine* 138.3, pp. 256–261.
- Russell, L. (2013). *Primary care and general practice in Australia 1990-2012: A Chronology of Federal Government strategies, policies, programs and funding*. Australian Primary Health Care Research Institute.

- Schattner et al. (2010). Schattner, P., Saunders, M., Stanger, L., Speak, M. and Russo, K. "Clinical data extraction and feedback in general practice: a case study from Australian primary care". *Journal of Innovation in Health Informatics* 18, pp. 205–212.
- Schluter et al. (2016). Schluter, P. J., Hamilton, G. J., Deely, J. M. and Ardagh, M. W. "Impact of integrated health system changes, accelerated due to an earthquake, on emergency department attendances and acute admissions: a Bayesian change-point analysis". *BMJ open* 6.5, e010709.
- W. Schofield et al. (2005). Schofield, W., Sindhusake, D., Lai, Y., Guo, Y., Campbell, D. and Rubin, G. *Evaluation: NSW Chronic Care Collaborative, February – November 2004*. Centre for Health Services Research at Westmead, Sydney West Area Health Service and University of Sydney School of Public Health.
http://pandora.nla.gov.au/pan/85742/20080617-0920/www.health.nsw.gov.au/pubs/2005/pdf/chronic_care_v2.pdf.
- D. Schofield et al. (2015). Schofield, D., Shrestha, R. N., Cunich, M., Tanton, R., Kelly, S., Passey, M. E. and Veerman, L. J. "Lost productive life years caused by chronic conditions in Australians aged 45-64 years, 2010-2030". *Medical Journal of Australia* 203.6, 260e1–e5.
- D. Schofield et al. (2016). Schofield, D., Shrestha, R. N., Cunich, M. M., Tanton, R., Veerman, L., Kelly, S. J. and Passey, M. E. "Economic costs of chronic disease through lost productive life years (PLYs) among Australians aged 45–64 years from 2015 to 2030: results from a microsimulation model". *BMJ Open* 6.9.
- Scott et al. (2016). Scott, A., Liu, M. and Yong, J. "Financial incentives to encourage value-based health care". *Medical Care Research and Review*, p. 1077558716676594.
- Select Committee on the Long-term Sustainability of the NHS (UK) (2017). *The Long-term Sustainability of the NHS and Adult Social Care*. House of Lords.
<https://www.parliament.uk/business/committees/committees-a-z/lords-select/nhs-sustainability-committee/news-parliament-2015/nhs-sustainability-under-threat/>.
- Sibbald et al. (2006). Sibbald, B., Laurant, M. G. and Reeves, D. "Advanced nurse roles in UK primary care". *Medical Journal of Australia* 185.1, p. 10.
- Sinaiko et al. (2017). Sinaiko, A. D. et al. "Synthesis Of Research On Patient-Centered Medical Homes Brings Systematic Differences Into Relief". *Health Affairs* 36.3, pp. 500–508.
- Smith et al. (2017). Smith, K. W., Bir, A., Freeman, N. L., Koethe, B. C., Cohen, J. and Day, T. J. "Impact Of Health Care Delivery System Innovations On Total Cost Of Care". *Health Affairs* 36.3, pp. 509–515.
- Swerissen et al. (2016). Swerissen, H., Duckett, S. and Wright, J. *Chronic failure in primary care*. Report No. 2016-2. Grattan Institute.
<https://grattan.edu.au/report/chronic-failure-in-primary-care/>.
- Timmins, N. and Ham, C. (2013). *The quest for integrated health and social care: A case study in Canterbury, New Zealand*. The King's Fund.
<https://www.kingsfund.org.uk/publications/quest-integrated-health-and-social-care>.
- Tsiachristas et al. (2013). Tsiachristas, A., Dikkers, C., Boland, M. R. and Rutten-van Mölken, M. P. "Exploring payment schemes used to promote integrated chronic care in Europe". *Health Policy* 113.3, pp. 296–304.
- Van Loenen et al. (2016). Van Loenen, T., Faber, M. J., Westert, G. P. and Van den Berg, M. J. "The impact of primary care organization on avoidable hospital admissions for diabetes in 23 countries". *Scandinavian journal of primary health care* 34.1, pp. 5–12.

- Verikios et al. (2015). Verikios, G., Dixon, P. B., Rimmer, M. T. and Harris, A. H. "Improving health in an advanced economy: An economywide analysis for Australia". *Economic Modelling* 46, pp. 250–261.
- Wagner et al. (2002). Wagner, E. H., Davis, C., Schaefer, J., Von Korff, M. and Austin, B. "A survey of leading chronic disease management programs: are they consistent with the literature?" *Journal of Nursing Care Quality* 16.2, pp. 67–80.
- Young et al. (2017). Young, R. A., Roberts, R. G. and Holden, R. J. "The Challenges of Measuring, Improving, and Reporting Quality in Primary Care". *The Annals of Family Medicine* 15.2, pp. 175–182.
- Zhang et al. (2015). Zhang, J., Donald, M., Baxter, K., Ware, R., Burrridge, L., Russell, A. and Jackson, C. "Impact of an integrated model of care on potentially preventable hospitalizations for people with Type 2 diabetes mellitus". *Diabetic Medicine* 32.7, pp. 872–880.