Innovations in Health Funding – Global Horizon Scan

22 September 2019

Table of Contents

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1 Introduction

Around the world, health systems are looking to reform the way that they fund, organise and pay for health care. This is a response to the challenge of ensuring the sustainability of health care systems in the face of rising demand, as well as recognition that there needs to be a sharper focus on the outcomes that matter most to patients. These two elements inform the move towards value-based approaches to health care.

Australians enjoy good access to high quality health care. On most measures, Australia's system of health care is affordable, and delivers care that is appropriate and high quality. This is not to say that the Australian system is perfect; no health system is. Australia faces challenges that are similar to many confronting OECD economies – population growth, ageing, the challenges associated with higher rates of chronic disease, rising costs associated with advancing medical technology and workforce shortages. In addition, Australia faces the significant challenge of improving health outcomes for Aboriginal and Torres Strait Islander people.

There is growing interest from policy makers about whether the current arrangements for organising, delivering and funding health care in Australia are best suited to meet the current and emerging health care challenges. Against a backdrop of increasing prevalence of chronic disease, ageing populations and a health care system built around delivering care in discrete episodes, it is imperative that policy makers consider whether current payment mechanisms are best suited to efficient, effective and sustainable health care delivery into the future.

The way health services are funded and paid for forms a crucial element of this equation. In many respects, diagnosing the problems is an easier task than defining solutions. The complex structure of Australia's health system is reflected in its funding arrangements. The health system is funded by all levels of government. Funding also comes from non-government organisations, private health insurers, and individuals when they pay for some products and services without full, or with only partial, reimbursement.[1] This complexity should not deter investigation of alternative funding models that improve on the current arrangements and do not lead to unintended consequences or greater complexity without commensurate benefit.

The Independent Hospital Pricing Authority (IHPA) is responsible for the national approach to funding for public hospital services across Australia. Its primary responsibility is to determine the National Efficient Price (NEP) for public hospital services funded on an activity basis and the National Efficient Cost (NEC) for block funded services. The NEP has two key purposes[2]:

1. determine the amount of Government funding for public hospital services
2. provide a price signal or benchmark about the efficient cost of providing public hospital services.

Costing information used to determine the NEP is drawn from the National Hospital Cost Data Collection (NHCDC) as provided by States and Territories on an annual basis. Approximately 460 public hospitals nationwide, including all of the large metropolitan hospitals, receive funding based on their activity levels.[3]

IHPA recognised in the *2018-19 Pricing Framework*[4] that there is tension between an activity based funding system oriented to treating health care episodically, and the increasing prevalence and financial significance of patients with chronic conditions, whose interaction with health services is far from episodic. IHPA also has a role to advise Australian Governments on alternative approaches to health

[1] AIHW (2018), *Australia's Health 2018*.
[2] Independent Hospital Pricing Authority (2019). *National Efficient Price Determination 2019-20*.
[3] *ibid*
[4] Independent Hospital Pricing Authority (2017). *Consultation Paper on the Pricing Framework for Australian Public Hospital Services 208-19*.

funding and has identified the growing interest in value-based approaches to health funding as an issue requiring detailed consideration.

Value-based programs are a broad set of performance-based payment strategies that link financial incentives to providers' performance on a set of defined measures, in an effort to achieve better value by driving improvements in quality and slowing growth in health care spending. This report presents the findings of a global horizon scan of value-based approaches to health care informed by a review of the published literature and case studies from the United States of America.

2 Current funding approaches in Australia

Total expenditure on health goods and services in Australia was $180.7 billion in 2016-17.[5] This represents around $7,400 per person and 10 per cent of overall economic activity. In 2016–17, governments spent $124.2 billion on health, or 68.7 per cent of total health expenditure in Australia. The proportion of expenditure by governments has remained relatively stable over recent years, increasing by 1.5 percentage points between 2015–16 and 2016–17.

In 2016–17, overall government contributions grew by 8.3 per cent, including a 6.1 per cent increase in the Australian Government contribution ($74.6 billion or 41.3 per cent of total health expenditure) and an 11.7 per cent increase in the State and Territory contribution ($49.6 billion or 27.4 per cent of total health expenditure). Non-government sources (individuals, private health insurance and other non-government sources) provided the remaining $56.5 billion—about one-third of total health expenditure.

Expenditure on public hospital services was $53.5 billion in 2016–17. This was up from $52.0 billion the previous year—a real growth of 2.9 per cent—below the average annual real growth over the decade of 4.1 per cent. In 2016–17, Australian Government expenditure on public hospital services ($21.7 billion) was up by 6.2 per cent in real terms from 2015–16—1.6 percentage points above the 10-year average annual growth of 4.6 per cent. State and Territory and local government expenditure was $27.3 billion—a 0.1 per cent real increase from 2015–16, well below the 10-year average annual growth of 3.4 per cent.

The responsibility for delivering health care for Australians is jointly shared by the Commonwealth, State and Territory governments. The complex structure of Australia's health system is reflected in its funding arrangements. Commonwealth, State and Territory governments have a funding and delivery role across different care settings. Funding for health care also comes from non-government organisations, private health insurers, and individuals when they pay for some products and services without full, or with only partial, reimbursement.

Australia's national public health insurance scheme, Medicare, funded and administered by the Australian Government, comprises of three components – medical services (including visits to general practitioners (GPs) and other medical practitioners), prescription pharmaceuticals, and hospital treatment as a public patient. The latter is jointly funded by the Australian and State/Territory governments.[6]

The health care system has multiple settings, often described as:

- **Primary Care** – broadly encompasses care that is not related to a hospital visit, including activities undertaken by general practitioners (GPs) and health promotion.[7]
- **Secondary Care** – medical care provided by a specialist or facility upon referral by a primary care physician (e.g. GP) and that requires more specialised knowledge, skill or equipment than that which the primary care physician can provide.[8]

[5] Australian Institute of Health and Welfare (2018). *Health and welfare expenditure series no. 64. Cat. no. HWE 74.* Canberra: AIHW.
[6] *ibid*
[7] Australian Institute of Health and Welfare (2016). *Australia's Health 2016. Australia's Health series no.15. Cat. no. AUS199. Canberra: AIHW.*
[8] Merriam-Webster (2018). *'Secondary Care' - accessed at https://www.merriam-webster.com.*

- **Hospitals** – deliver a range of services to admitted and non-admitted patients (emergency department and outpatient services). Public hospitals are primarily run by State and Territory governments with the Australian government providing funding through the National Health Reform Agreement between the Australian Government and the States and Territories.

In the public hospital setting, the Commonwealth, States and Territories contribute to hospital services using activity based funding where practicable and block funding in other cases.[9]

Payment mechanisms utilised for primary care and public hospitals are outlined in Table 1 below.

Table 1 - Australia's health care payment mechanisms – primary care and public hospitals

Payment method	Description	Setting
Fee-for-service	Retrospective payment for individual services and patient contacts. Under this model, consumers pay providers directly for services received.	Predominant mode of payment for GPs
Case payment	In Australia, Activity Based Funding (ABF) is a way of funding hospitals whereby they get paid for the number and mix of patients they treat. If a hospital treats more patients, it receives more funding. Because some patients are more complicated to treat than others, ABF also takes this into account.[10]	Payment for public hospital inpatient cases

A number of reforms are tackling the complexities of Australia's health care system. This includes addressing the fragmentation of health system and accountabilities between different layers of government. The February 2018 Heads of Agreement between the Commonwealth and the States and Territories on Public Hospital Funding (the Heads of Agreement), establishes the basis of negotiation for a new five-year, national health agreement commencing in July 2020.[11]

The Heads of Agreement is based on four strategic pillars of health reform, including:

1. improving efficiency and ensuring financial sustainability
2. delivering safe, high quality care in the right place at the right time
3. prioritising prevention and helping people manage their health across their lifetime
4. driving best practice and performance using data and research.

The Heads of Agreement also articulates a number of key areas of focus for longer term reform. This includes new long-term, system-wide reforms focused on, among other areas, paying for value and outcomes.

Changing patterns of illness, increasing demand for health services, and growing health expenditure are providing the impetus to consider the effectiveness of Australia's current hospital payment mechanisms. While health systems around the world face similar problems, the approaches they have taken to addressing them, particularly with reference to the way that health services are funded, are widely different.

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[9] Council of Australian Governments (2018). *Heads of Agreement between the Commonwealth and the States and Territories on public hospital funding and health reform* https://www.publichospitalfunding.gov.au/national-health-reform/agreement

[10] Independent Hospital Pricing Authority (2019). *Activity based funding*, https://www.ihpa.gov.au/what-we-do/activity-based-funding.

[11] Council of Australian Governments (2018). *Heads of Agreement between the Commonwealth and the States and Territories on public hospital funding and health reform. Accessed at: https://www.coag.gov.au/about-coag/agreements/heads-agreement-between-commonwealth-and-states-and-territories-public-0*

While activity based funding provides a price signal for public hospitals to provide services more efficiently (technical efficiency[12]), it does not consider whether the provision of that service is the most effective way to care for the patient (allocative efficiency). It also has the potential to provide a financial incentive for hospitals to prioritise service volume over patient outcomes.[13] While measures of cost are definitive, benefit measures are more complex to construct. As countries grapple with issues facing their health systems, including the rising costs of health care, there has been a push to implement financial incentives linked to value-based programs.

The Productivity Commission estimates the benefits of better integration of health services to be in the order of over $200 billion over 20 years.[14] Reform of payment systems offer the potential to address some of the systemic problems in the Australian health system. The way health is funded, paid for and the alignment of incentives across the health system are vital contributors to health system performance and outcomes.

It is important however to recognise that, while they are important, payment systems form part of a wider system of health care organisation and delivery. Payment reform on its own is unlikely to deliver transformational change to the Australian health system. Payment reform should be considered as part of a suite of policy responses available to improve the way care is organised and delivered according to a broader policy objective (e.g. reducing fragmentation of service delivery, improving integration of care across the primary and hospital based servies or improving patient outcomes in a particular clinical area).

Being clear about policy objectives, whether they be broad or quite specific, is an important ingredient for success. Any effort to reform payment systems to deliver better "value" from health care spending needs to be clear about:

- the objectives of the reforms, ie how value is defined, measured and delivered
- a detailed analysis of the likely benefits of the reform, including the impacts on patient outcomes, quality of health care services and the patient experience of health care and costs of implementation
- consideration of potential unintended consequences of the reform.

Just as there is no perfect health system, there is no perfect health payment model. Importing payment models from other systems is far from easy. We need to consider how well the schemes from other jurisdictions fit to the Australian context and assess how well they are likely to work in practice.

There have been a handful of pay for performance programs trialled in Australia, and a number of jurisdictions are undertaking detailed consideration of value-based approaches. IHPA has previously considered the introduction of a bundled pricing approach for maternity services before deciding that data limitations, particularly in relation to a paucity of data in relation to shared antenatal care, were such that a robust model could not be put forward with confidence, at this stage.

As noted in the *Pricing Framework for Australian Public Hospital Services 2019-20*, some State and Territory governments are developing funding models for some patient groups to drive the adoption of patient-centred models of care. The Victorian 'HealthLinks: Chronic Care' program was included on the General List of In-Scope Public Hospital Services for 2018–19, and IHPA is block funding the program on a trial basis with a number of conditions specified by the Pricing Authority for NEP18. The program is a capitation funding model for patients with chronic disease and aims to reduce avoidable readmissions and presentations to emergency departments. It is expected that States and Territories will continue to trial innovative funding models alongside the current ABF system, with IHPA continuing to explore new developments in health funding nationally and internationally and opportunities to explore their impact on providing efficiency and transparency in public health systems.

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[12] **Technical efficiency** is a measure of how well an input is converted into an output. It is measured as the ratio of physical output to physical input. **Allocative efficiency** is a measure of how well the available resources are allocated to production that meets the preferences of the population. It is measured as a change in net benefits (broadly defined). *Productivity Commission 2013 On efficiency and effectiveness: some definitions*, Staff Research Note, Canberra.

[13] Independent Hospital Pricing Authority (2017). *Bundled pricing for maternity care: Final report of IHPA and the Bundled Pricing Advisory Group*. Accessed at : https://www.ihpa.gov.au/publications/bundled-pricing-maternity-care

[14] Productivity Commission (2017). *Shifting the Dial: 5 Year Productivity Review, Report No. 84, Canberra*

There is evidence that the national introduction of activity based funding in 2011-12 has slowed the growth in the costs of providing public hospital services across Australia.[15] The activity based funding approach is also reviewed annually through a public consultation process, and there is scope for it to be refined and improved in response to changing health needs.

[15] Independent Hospital Pricing Authority (2018). 2017-18 Annual Report.

3 Approach

3.1 Literature review

A review of the published academic and 'grey' literature was undertaken to identify how health systems around the world were reforming their approaches to health funding and payment systems. The focus was on value-based purchasing, pay for performance, accountable care organisations, bundled payments, capitation payments and block funding. The review included English-language literature published from 1st January 2008 using the PubMed electronic database.

This literature scan[16] highlighted that many programs of payment reform are yet to mature. This makes evaluating their impact on health outcomes difficult to assess. The level of detail available regarding program design also varied considerably and understanding how programs work 'on the ground' was difficult to assess from the published reports. The evidence is summarised in Section 5 in this report.

It was clear from the scan that many of the programs recently introduced in different jurisdictions in the United States may provide valuable insights from an Australian perspective. Reform of payment approaches in the United States is being driven in large part by concerns regarding the sustainability of the health care system which is grappling with growth in the costs of health care as well as rising demand for services. The concerns, particularly in relation to cost and affordability, cut across both the public and private providers and payers.

There has been significant reform of the Medicare and Medicaid public insurance schemes which are overseen by the Centers for Medicare and Medicaid (CMS). The Center for Medicare and Medicaid Innovation was established within CMS to test and disseminate promising payment and service delivery models designed to reduce spending while preserving or improving quality. The Innovation Center supports the development and testing of innovative health care payment and service delivery models. CMS is testing more than 20 models under this authority that create new incentives for clinicians and organisations with the aim of delivering better care at lower cost. A key enabler to the payment reform program in the United States has seen CMS working with states as a convener for dialogue between multiple payers, clinicians and health care organisations, and other stakeholders in each state.[17]

3.2 Study tour

The concerns in the United States about containing the growth of health care expenditure, and the development of a range of value-based programs by the CMS, provides a useful comparison point for what might be possible in Australia.

A study tour undertaken by IHPA during March 2019 comprised visits to the Centers for Medicare and Medicaid in Baltimore, the Health Services Cost Review Commission in Baltimore, the New York State Health Department and the Staten Island Performing Provider System. The focus of these meetings with these organisations was to assess:

- how programs were being implemented on the ground
- barriers to implementation
- how outcomes from the programs are being evaluated.

The tour also included a visit to 3M to assess how coding and classification is being used to inform the development of indicator sets across various programs in the United States.

[16] KPMG (2018). *Global Horizon Scan: innovations in health funding literature review.* (unpublished)
[17] Rajkumar, R., Conway, P. and Tavenner, M. (2014). *CMS – Engaging multiple payers in payment reform,* Journal of the American Medical Association 311: 1967-8.

A meeting was held with the RAND Corporation to consider their research across the United States' health system, in particular work undertaken in relation to the evidence for value-based payment programs. A visit to the Commonwealth Fund provided insights into the overall direction of health policy in the United States as well as the examples of best practice in value-based approaches from around the country. Selected case studies, prepared following these visits, are presented in the Appendix to this report.

4 Literature review findings

A global horizon scan was undertaken to identify innovations in health service pricing, payments and funding that might be considered for implementation in Australia. A key component of the project is a literature review focusing on these key elements.

The objectives of the literature review were to identify international initiatives and innovations in health funding to inform consideration of innovative approaches in Australia and to provide IHPA with an analysis of the available evidence from the international literature.

The literature review was focused on five key approaches to value-based payment.

- **Value-based purchasing (VBP)**[18] refers to a broad set of performance-based payment strategies that link financial incentives to providers' performance on a set of defined measures. Both public and private payers are using VBP strategies in an effort to drive improvements in quality and to slow the growth in health care spending.
- **Pay-for-performance**[19] refers to a payment arrangement in which providers are rewarded (bonuses) and/or penalised (reductions in payments) based on meeting pre-established targets or benchmarks for measures of quality and/or efficiency. These financial incentives are intended to change provider behaviour to achieve a set of objectives specified by the payer.
- **Accountable care organisation (ACO)**[20] refers to a health care organisation composed of doctors, hospitals, and other health care providers who voluntarily come together to provide coordinated care and agree to be held collectively accountable for the overall costs and quality of care for an assigned population of patients. The ACO payment model ties provider reimbursements to performance on quality measures and reductions in the total cost of care. Under an ACO arrangement, providers in the ACO agree to take financial risk and are eligible for a share of the savings achieved through improved care delivery, provided they achieve quality and spending targets negotiated between the ACO and the payer.
- **Bundled payments**[21,22] are a method in which payments to health care providers are based on the expected costs for a clinically defined episode or bundle of related health care services. The payment arrangement includes financial and quality performance accountability for the episode of care. Episodes can be defined in different ways and cover varying periods of time (e.g. one year for a chronic condition, the period of a hospitalisation etc).
- **Capitation payments** involve paying a provider or group of providers to cover the majority (or all) of the care provided to a specified population across different care settings and time periods. The regular payments are calculated as a lump sum per patient.[23] Capitation models are used to control the use of health care resources by sharing risk between payer and provider, or putting the physician at financial risk for services provided to patients. To ensure that patients do not receive sub-optimal levels of care, in some systems, managed care organisations measure rates of resource utilisation in physician practices. These reports are made available to the public as a measure of health care quality, and can be linked to financial rewards, such as bonuses. Outcome measures can also be applied to assess safety and quality.

[18] Damberg, Cheryl L., et al. (2014). *Success in Health Care Value-Based Purchasing Programs: Summary and Recommendations*, Santa Monica, Calif.: RAND Corporation, RR-306/1-ASPE, 2014. Access at: https://www.rand.org/pubs/research_reports/RR306z1.html
[19] *ibid*
[20] *ibid*
[21] *ibid*
[22] Other common terms used for bundled payment arrangements are episode-based payment, episode of care payment, case rate, evidenced-based case rate, global bundled payment and global payment.
[23] NHS (2016). *Capitation: an introduction.* Retrieved from https://www.gov.uk/guidance/capitation

The literature review was based on the following search strategy:

- a systematic search of English-language literature published from 1st January 2008 using the PuBMed database
- database searching supplemented by snowball searching
- search of relevant websites, including government, professional organisations and academic institutions.

The review involved screening of 1,127 published articles and, following assessment, 34 studies were included in the review. Most (29 studies) related to pay-for-performance programs in the United States and the United Kingdom. These studies involve a wide range of care settings, financial incentives and outcome measures.

The findings of the literature review support the findings from published systematic reviews of the evidence.

A systematic review of research published between 2000 and 2009 focused on the question of whether financial incentives impacted on the quality of care provided by primary care physicians. The review set out to identify the different types of financial incentives that have improved quality, the characteristics of patient populations for whom quality of care has been improved by financial incentives, and the characteristics of primary care providers who have responded to financial incentives.

The authors conclude that "there is insufficient evidence to support or not support the use of financial incentives to improve the quality of primary health care".[24]

A systematic review of value-based purchasing programs in health care was undertaken for the US Department of Health and Human Services by the RAND Corporation based on English language articles published between January 2000 and December 2012. The detailed review included 103 studies on pay-for-performance programs. The review found mixed evidence that pay-for-performance was associated with modest improvements in process-of-care outcomes but had little effect on patient outcomes.[25]

The RAND review was extended to include articles published over the period 2007 to 2016. This systematic review found 69 studies examining the effects of pay for performance programs targeted at the physician, group, managerial or institutional level on process-of-care and patient outcomes in ambulatory and inpatient settings. The review found:

- in the ambulatory setting, low-strength evidence that pay-for-performance programs may improve process of care outcomes over the short term (2-3 years)
- limited evidence of longer-term effects of pay-for-performance
- many of the studies reporting positive findings were conducted in the United Kingdom, where incentives are much larger than the incentives in the United States
- the largest improvements were observed in areas where the baseline performance was poor
- low-strength evidence that pay for performance had little or no effect on intermediate health outcomes, although there were inconsistencies among study results
- the evidence regarding patient health outcomes was insufficient because few methodologically rigorous studies reported these outcomes
- in the hospital setting, low strength evidence showed that pay for performance had a neutral effect on patient health outcomes and a positive effect on reducing hospital readmissions.[26]

[24] Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. (2011). *The effect of financial incentives on the quality of health care provided by primary care physicians.* Cochrane Database Syst Rev.

[25] Damberg, C et al. (2014). *Measuring success in health care value-based purchasing programs.* Rand Health Q. Dec 30; 4(3):9. eCollection 2014 Dec 30

[26] Mendelson, A. et al. (2017). *The Effects of Pay for Performance programs on Health, Health Care Use and Processes of Care: a systematic review.* Ann Intern Med. 2017; 166:341-353.

Defining value in health care

The literature also considered the definition of value in health care. *"20th Century healthcare was dominated by clinicians, effectiveness and efficiency. 21st Century healthcare will be dominated by patients, outcomes and value, because the challenges facing 21st Century healthcare in every society are massive and growing"*.[27]

Defining what is meant by "value" is an important first step in considering payment reform. Defining value is not straightforward and, as noted in Section 5 the the definition of 'value' is often opaque and the relationship between value and payment design is often not explained. There are different approaches to the meaning of value in health care.

Value is often defined as 'the health outcome per dollar of cost expended'. [28] [29]

The concept of the Triple Aim in health care, advanced by the Institute for Healthcare Improvement, is also gaining support in Australia. Value is constructed as the 'maximum health benefit at minimum cost, and—operationally—better value translates into a combination of improved health outcomes and processes of care (clinical quality), better patient experience, and reduced costs of care'. [30] [31]

The definition of value also reflects the subjective judgements regarding what matters to whom in the health system. This will vary depending on the perspective of the patient, provider or payer. In outlining a theoretically preferred design for value-based provider payment, Cattel et al. (2018) identified five dimensions of value:[32]

1. **High-quality care:** Care is safe, effective, patient-centred and timely. High quality comprises 'technical' or clinical quality as well as patient reported measures and outocmes (e.g. PROMS).
2. **Cost-conscious behaviour:** Scarce resources are efficiently used (i.e. no misuse or overuse).
3. **Well-coordinated care:** Multidisciplinary providers communicate and cooperate well in order to realise integrated, well-orchestrated care across the continuum of care.
4. **Cost-effective innovation:** Cost-saving services result in equal or better health and health-promoting innovations are worth the additional costs.
5. **Cost-effective prevention:** Deteriorations of health problems are prevented in a cost-effective way.

Establishing the definition of "value:" is critical in informing the payment program design, particularly in developing relevant measures, during implementation and engagement, and evaluation.

[27] Muir Gray, J. A. (2011). *How to Get Better Value Healthcare* Offox Press
[28] Porter, M, and Teisburg, E. (2006). *Redefining Health Care: Creating Value-Based Competition on Results*. Harvard Business Press
[29] Moriates, c., Arora, V. & Shah, N. (2015). *Understanding value-based healthcare.* McGraw Hill: United States of America.
[30] Berwick DM, Nolan TW and Whittington J. (2008). *The triple aim: care, health, and cost,* Health Affairs, 27(3): 759–769.
[31] Conrad, D. (2015). *Health Services Research;* Dec 2015; 50; p2057-p2089
[32] Cattel, D., Eijkenaar, F., and Schut, F., (2018). *Value-based provider payment: towards a theoretically preferred design.* Health Economics, Policy and Law.

5 Options for consideration

This section summarises the developments in health funding observed during the study tour and consideration of the opportunity for their application to the Australian health payments system. The disucssion recognises that IHPA and several jurisdictions are already undertaking detailed consideration of value-based payment reform.

These options are not exhaustive; they are presented based on consideration of the challenges facing the Australian health care system, the existing funding and health system policy architecture and lessons from the literature. The approaches aim to refocus health financing arrangements away from payments based on the type and volume of services delivered and towards payments which are based on the value of care which is actually provided to patients. However, these trends have implications for how IHPA will count, classify, cost and price public hospital services.[33]

Bundling

Current trends and evidence

Bundled payment schemes are gaining traction in the United States. For example, the Centers for Medicare and Medicaid have developed bundled pricing programs across 48 areas of clinical practice. Among those programs, the Comprehensive Joint Replacement Payment Reform Program (the Program) in Maryland illustrates how the state of Maryland is using bundled pricing to incentivise hospitals to reduce costs while maintaining or improving quality (see Appendix for a more detailed description).

The Program provides evidence for a bundle or episode-based payment in which costs of a patient's office visits, tests, treatments and hospitalisations associated with a patient's illness, medical event, or condition are grouped together. Under such arrangements, the value-based payment 'contractor' assumes responsibility for both the outcomes and the costs of the care across the continuum of the patient's trajectory for that condition.[34]

Considerations

In an episode-based arrangement, several related episodes can be brought together. This requires data to be available, linked and of quality. Key enablers of the Comprehensive Joint Replacement payment reform program were robust data collection systems and clinician buy-in and engagement.

Bundled pricing offers particular benefit with regard to hospital based services, but it has also been used in relation to mental health and for chronic conditions such as diabetes. Bundled payments aim to incentivise efficient use of resources across the pathway, effective care co-ordination, appropriate treatment and reduction in avoidable activity.

Australian context

IHPA has previously detailed the potential benefits of the bundled pricing approach, the practical difficulties associated with designing a bundle and recommendations regarding how these difficulties might be overcome. IHPA's work to develop a bundled pricing approach for maternity care concluded that a single person identifier was a precondition to implementation, as a robust person identifier would

[33] Independent Hospital Pricing Authority (2019). *Pricing Framework for Australian Public Hospital Services 2019-20*
[34] New York Department of Health (2017). *DSRIP Program Roadmap (November 2017).*

allow IHPA to accurately identify service delivery to patients across settings of care, financial years and hospitals.[35] This is an important difference when comparing the US and Australian health systems.

Consideration should be given to revisiting the options for bundling in maternity care, joint replacement and some areas of cancer treatment. There are two important issues that need to be resolved in the design phase:

- the clinical 'buy-in' and agreement on what constitutes good quality care
- data linkage to enable full understanding of the relationships between primary care, secondary care and hospital-based care and to enable better measurement of meaningful clinical outcomes. Effective data linkage is more complicated when data is fragmented among different payers and providers.

Capitation models

Current trends and evidence

Capitation models involve paying a provider or group of providers to cover the majority (or all) of the care provided to a specified population across different care settings and time periods. The regular payments are calculated as a lump sum per patient.[36]

Considerations

This approach presents some challenges that would need to be considered and managed. The challenges include:

- a risk that the payment mechanism may create an incentive to reduce appropriate care for patients
- difficulties associated with prospectively setting appropriate resource use and defining the capitation price
- adjusting for severity of illness across different cohorts of patients to ensure fairness across different regions
- defining how risks and gains are shared and managed between funders and providers (noting that a capitation based-model for community-based chronic disease management would likely require multiple providers to work collaboratively).

These challenges can be addressed through careful design and need to be set against the potential for this payment reform to drive better integration of care for patients with chronic disease.

Australian context

In the Australian context, implementation of capitation models could involve a prospective payment to a local health authority (or some other vehicle or organisation) to manage care across different settings on behalf of a defined cohort of patients with an inherent incentive to provide the care at the lowest cost. Consideration could be given to whether this might be jointly managed by a Local Health Network and a Primary Health Network with an appropriate governance agreement setting out responsibilities, data sharing arrangements and reporting requirements. HealthLinks provides a useful example and future evidence-base to further develop capitation models across different settings.

[35] Independent Hospital Pricing Authority (2019). *Pricing Framework for Australian Public Hospital Services 2019-20*
[36] NHS (2016). *Capitation: an introduction.* Retrieved from https://www.gov.uk/guidance/capitation

In Victoria, HealthLinks: Chronic Care ('HealthLinks') enables health services to use funding for a specific cohort of patients with chronic and complex health needs more flexibly to deliver a different suite of services to better meet their needs. There is no new HealthLinks funding stream – the trial is funded from the current total weighted inlier equivalent separation (WIES) funding pool.

Health services have the flexibility to use projected inpatient activity-based WIES funding to design packages of care around the needs of some of their highly complex patients. The projected funds are converted into a separate funding pool ('HealthLinks capitation grant'). Although health services may choose to design packages for a subset of the enrolled patients, funding is based on the predicted average number of HealthLinks-enrolled patients.[37]

Regionally-coordinated service responses to improve system-wide outcomes

Current trends and evidence

The Staten Island Performing Provider System (SI PPS) provides insight into how groups of providers can work together to tackle community-level challenges and proactively address service demand influenced by social determinants. The SI PPS focuses on improving the quality of care and overall health for Staten Island's Medicaid and uninsured populations, which include more than 180,000 Staten Island residents. Its goals are to:

- improve access to high quality, culturally sensitive care
- improve population health and health literacy
- reduce avoidable emergency room visits by 25 per cent
- reduce preventable hospital admissions and readmission.

Through partnership agreements, each PPS partner is collectively accountable for measurable improvements in clinical outcomes, system utilisation, population health and patient experience. Participating providers receive incentive payments for achieving project milestones via a managed care contract, with PPSs determining the method for distributing these funds.

Considerations

The successful application of the PPS program in Staten Island can be attributed to, among other things, the way its governance mechanisms facilitate provider collaboration, use of data and analytics to deliver real insights, its commissioning approach, and access to dedicated funding streams aligned to achievement of outcomes. These enablers to success are explored further below:

- **Health information exchange:** A critical underpinning of SI PPS is the use of health information exchange capabilities to support team-based care across PPS members and health care settings. This enables members to securely access patient data, and for members to view notifications of patient events, such as admissions and emergency department visits. This infrastructure is a fundamental component of the PPS program achieving its intended project outcomes, where the main interventions require robust, collaborative care planning and documentation[38]. Moreover, patient-level data linked through the health information exchange provides a powerful, analytical basis for targeted interventions.
- **Turning data into business intelligence:** SI PPS operates on the philosophy that data is fundamental in delivering system reform. SI PPS and its partners leverage an integrated platform that gathers data from multiple sources, including claims data, core reports (including ambulance, schools and community data), Department of Health information and public data which feeds

[37] DHHS (2019). HealthLinks, https://www2.health.vic.gov.au/about/publications/Factsheets/Healthlinks-factsheet
[38] Medicaid (2017).*Achieving Coordination of Care to Improve Population Health: Provider collaboration in Delivery System Reform Incentive Payment Programs,* https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/1115-ib2-508-dsrip-provider-collaboration.pdf

directly into the electronic data warehouse. With geospatial-mapping, SI PPS can identify areas lacking in key services, filter in on specific conditions, and undertake trend and predictive analysis. This includes utilisation trends (including hospitalisation and medication usage) and claims data trends. Analysis can be filtered by demographics, chronic illness, and other key variables. This supports SI PPS and its partners to design and implement projects which are evidenced-based, and provide the basis to test and monitor innovative service delivery models.

- **Governance:** SI PPS is co-led by Staten Island University Hospital and Richmond University Medical Center, with a network of over 70 partners which includes skilled nursing facilities, behavioural health providers, home health care agencies and a wide range of community-based clinical facilities. A key enabler for SI PPS has been a strong governance structure and central staff that support all providers in the network to provide services in a coordinated manner that directly impacts system outcomes. This approach is also facilitated through the partnership agreement and funding mechanisms.
- **Funding mechanism:** A key focus in implementing SI PPs was to include a base payment, in addition to incentive funding to provide an impetus for providers to work collaboratively together to deliver community-level outcomes. Funding was also leveraged to build capability for all providers to deliver coordinated care. This included undertaking a comprehensive inventory of the health workforce to identify capability, supply and demand issues, and emerging job categories.
- **Building the capacity of the whole system:** A key focus for SI PPS has been on building capacity across the health care system with its partners at the organisation and workforce level. This has been undertaken through joined up training programs, regular symposiums, establishment of project working groups with clear governance arrangements, and partnership reporting. SI PPS has also prioritised engaging with patients in the design and implementation of projects and their active monitoring.

Australian context

The SI PPS case study provides a compelling case study in understanding how financial and regulatory levers can be used to collaboratively transform the delivery of health services within a defined region to deliver better outcomes. In the Australian health system, while existing service-delivery and governance structures have some of the same objectives, there is no obvious comparator. For example, while Primary Health Networks (PHNs) play a key commissioning role, and often work closely with other care providers within a given region, they are established and resourced to influence rather than manage the regions they govern. Specific challenges are outlined below.

- Shorter term funding cycles prevalent in the PHN funding environment create significant limitations in achieving sustainable community-level outcomes.[39] The SI PPS case study highlights the need for non-transactional approaches to commissioning to develop coordinated and collaborative models.
- While an overarching objective in its commissioning approach, co-commissioning requires significant effort to develop a shared understanding and objectives, navigate funding allocations, share data and commence co-planning.[40]

As a major policy initiative, PHNs have significant potential to impact the integration of care and to improve the health of populations through devolving responsibilities for health planning and commissioning to the regional level.[41] However, to achieve the outcomes associated with the SI PPS program, the following areas require consideration:

[39] *ibid*
[40] University of New South Wales et al. (2018). *Evaluation of the Primary Health Networks Program,* https://www.health.gov.au/internet/main/publishing.nsf/Content/69C162040CFA4F7ACA25835400105613/$File/PHN%20Evaluation%20Final%20Report.pdf
[41] University of New South Wales (2019). *The National Evaluation of the Primary Health Network Program* https://cphce.unsw.edu.au/research/health-system-integration-and-primary-health-care-development/national-evaluation-primary

- An effective and supported health information exchange which provides service providers with access to a real-time data and analytical capability. The integration of data from multiple sources requires the resolution of a range of technical, privacy and security aspects
- Funding mechanisms which incentivise providers to deliver services in a coordinated and collaborative manner commensurate with the health needs of the community
- Governance structures which provide an impetus for coordinated and collaborative care delivery
- Redefined role of PHNs to enable them to intervene at the regional level to positively impact social determinants of health. This includes supporting legal instruments and agreements with partners.

Appendix

Appendix A: Case Studies

A.1 Innovative funding approaches in the United States

No country spends more on health than the United States. In 2017, health care expenditure was $3.7 trillion.[42] This represents around 17.2 per cent of Gross Domestic Product. This compares with the OECD average of 8.8 per cent and the 9.1 per cent in Australia. The expenditure per person in 2017 was $10,209 in the United States, compared with the OECD average of $3,992 and the Australia per person expenditure of $4,543.[43]

This expenditure on health care is not reflected in better health outcomes. On a range of health outcome measures, the United States does not perform as well as might be expected. The performance of the United States' health care system consistently rates last among high income countries. The major challenges facing the United States' health system include:

- Lack of access to health care for a large proportion of the population which do not have access to health insurance or who are under-insured
- Relative under-investment in primary care in the United States compared with other countries
- Administrative inefficiency of the United States' health care system resulting from the complexity of obtaining care and paying for it.[44]

Addressing these challenges is complex and made doubly so by the 'hyper partisan' nature of health policy debate in the Unites States. The concerns regarding rising health care costs for both public payers and private payers (insurers), access to health care for a significant proportion of the population and the complexities of the organisation and delivery of health care are driving reform. While many of the issues confronting policy makers in the United States are different to those in Australia, the similarities with regard to the federal system of health care and the concerns about sustainability mean that the reform programs being pursued within the United States hold lessons for policy makers in Australia.

The *Affordable Care Act*, enacted in 2010, led to significant insurance and health systems reforms. The *Medicare Access and CHIP Reauthorization Act* of 2015 (MACRA) was intended to align financial incentives for providers with high-value care. The reforms under the MACRA are designed to support the transition of the US health care system from fee-for-service payment to payments based on the value and quality of care delivered. The Trump Administration has changed aspects of the way programs are delivered under the *Affordable Care Act*, particularly the role of the State and Federal governments but has continued to 'by and large' enforce the law as written. Key programs are:

- Medicare is financed through a combination of payroll taxes, premiums, and federal general revenues.
- Medicaid is tax-funded and administered by the states, which operate the program within broad federal guidelines. States receive matching funds from the federal government for Medicaid at rates that vary based on their per-capita income. The expansion of Medicaid under the *Affordable Care Act* was fully funded by the federal government through 2017, after which the government's funding share will be phased down to 90 per cent by 2020 (subject to change under the new administration and Congress).

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[42] Martin A, Hartman M, Washington B, Catlin A et al. (2018). *National Health Care Spending In 2017: Growth Slows To Post–Great Recession Rates; Share Of GDP Stabilizes* Health Affairs 38 (1)
[43] *All figures in US dollars and updated in November 2018.* OECD data obtained from http://www.oecd.org/els/health-systems/health-data.htm
[44] Commonwealth Fund (2019). The US Health Care System https://international.commonwealthfund.org/countries/united_states/ Accessed 4 May 2019.

A number of reforms included in the *Affordable Care Act* attempt to develop payment methods in the Medicare and Medicaid programs that reward high-quality, efficient care. Some of these use pay-for-performance mechanisms, whereas others rely on bundled payments, shared savings, or global budgets to incentivise integration and coordination among health care providers.

In 2015, the U.S. Department of Health and Human Services announced a goal to move 50 per cent of Medicare payments to alternative payment models, including Accountable Care Organisation based arrangements.

A.2 Center for Medicare and Medicaid Innovation

In 2015, the Department of Health and Human Services established a goal to move to 50 per cent of Medicare payment to alternative payment models by 2018. The *Affordable Care Act* included a series of reforms to payment systems and established the Center for Medicare and Medicaid Innovation within CMS to test and disseminate promising payment and service delivery models designed to reduce spending while preserving or improving quality.

The Innovation Center within CMS supports the development and testing of innovative health care payment and service delivery models. CMS is testing more than 20 models under this authority that create new incentives for clinicians and organisations that deliver medical care through CMS programs to deliver better care at lower cost. The Innovation Center's Innovation Models are organised into seven categories:

1. Accountable Care
2. Episode-based Payment Initiatives (e.g. Comprehensive Care for Joint Replacement Model – see following section for a case study)
3. Primary Care Transformation
4. Initiatives Focused on the Medicaid and CHIP Population
5. Initiatives Focused on the Medicare-Medicaid Enrollees
6. Initiatives to Accelerate the Development and Testing of New Payment and Service Delivery Models
7. Initiatives to Speed the Adoption of Best Practices.

A key enabler to the payment reform program in the United States has been CMS working with states to act as a convener for multiple payers, clinicians and health care organisations, and other stakeholders in each state.[45]

Table 2: Payment taxonomy framework

Payment method	Description	CMS models
1. Fee-for-service: no link to quality	Payments are based on volume of service and not linked to quality or efficiency	• Limited in Medicare Fee for Service; majority of payments are now linked to quality
2. Fee-for-service: link to quality	At least a portion of payments vary based on the quality or efficiency of health care delivery	• Hospital Value-Based Purchasing • Physician value-based modifier

[45] Rajkumar, R., Conway, P. and Tavenner, M. (2014). *CMS – Engaging multiple payers in payment reform,* Journal of the American Medical Association 311: 1967-8.

Payment method	Description	CMS models
		• Readmissions/hospital acquired condition reduction program
3. Alternative payment models built on fee-for-service architecture	Some payment is linked to the effective management of a population or an episode of care. Payments still triggered by delivery of services, but opportunities for shared-savings or two-sided risk.	• Accountable care organisations • Medical homes • Bundled payments • Comprehensive primary care initiative
4. Population-based payment	Payment is not directly triggered by service delivery, so volume is not linked to payment. Clinicians and organisations are paid and responsible for the care of a beneficiary for a long period.	Eligible Pioneer Accountable Care Organisations in years 3-5

Source: Based on Rajkumar, R., Conway, P. and Tavenner, M. (2014). CMS – Engaging multiple payers in payment reform, Journal of the American Medical Association 311: 1967-8.

The models being tested are directly layered on top of fee-for-service architecture. In the case of Medicare, the base architecture is the Medicare Physician Fee Schedule, which also underlies the fee schedules in use in private insurance and Medicaid programs.[46]

Program evaluation, results and implications

Four operational features affect the design and evaluation of new CMS payment and delivery models.[47] First, for most models, participation by hospitals, physicians and other clinicians, and community-based organisations is voluntary. As such, the design, scope, and implementation of the models are influenced by the need to engage willing partners.

Second, many models are designed to foster multi-payer participation. CMS finances only a portion of health care delivery in the United States. To achieve its aims, CMS must work with other payers to align incentives.

Third, CMS models are not static. Every model is designed with the intent that CMS will make changes incrementally and refine interventions and incentive structures as more is learned about the performance of models. That is, these models have feedback and learning systems embedded into their design to allow them to adapt to better meet their core objectives.

Fourth, the institutional, local, and market context in which model participants operate can vary substantially. It is important to determine how and why model participants succeed or fail in order to provide an accurate sense of what will happen if models are expanded and to inform how best to structure potential expansion activities.

Collectively, these four operational features make CMS models complex to evaluate. Many traditional research designs that may provide a high degree of rigor in evaluating "conceptually neat components of clinical practice," such as randomised clinical trials, provide minimal insight when applied to complex, multi-component interventions. In short, the optimal evaluation approach varies according to both what

[46] Berenson, Robert A.; Ginsburg, Paul B. (2019). *Improving The Medicare Physician Fee Schedule: Make It Part Of Value-Based Payment.* Health Affairs. Febv2019, Vol. 38 Issue 2, p246-252. 7p. DOI: 10.1377/hlthaff.2018.05411

[47] Howell BL, Conway PH, Rajkumar R. (2015). *Guiding Principles for Center for Medicare & Medicaid Innovation Model Evaluations.* JAMA. 2015; 313(23):2317–2318. doi:10.1001/jama.2015.2902

information needs to be learned and what evidentiary threshold will be acceptable for action on evidence.

To manage this complexity, CMS applies three guiding principles when evaluating models:

- examine model progress frequently and in a timely manner so that both CMS and model participants can improve their performance over the life of the model
- apply the most rigorous evaluation methods possible to provide policy makers with the best information available
- evaluate comprehensively to determine whether a model is successful and to describe the drivers of that success.

CMS contracts with external evaluators for all Innovation Center Models to ensure the independence of evaluation results.

One of the models introduced by the CMMI is the Comprehensive Care for Joint Replacement.

Comprehensive Care for Joint Replacement model

The Comprehensive Care for Joint Replacement (CJR) model tests whether an episode-based payment approach for lower extremity joint replacement can incentivise hospitals to reduce costs while maintaining or improving quality.

Participating hospitals are financially accountable for the quality and cost of health care services during the 90 day episode. At the end of each performance year, the hospital's actual episode spending is compared to the hospital's quality adjusted target price, and hospitals can earn or lose money based on their performance. All hospitals in selected areas were required to participate. The mandatory, randomised design allows insights that would not be possible from voluntary models due to the ability to observe results in a wide variety of hospitals and markets.

Table 3: CJR Program Design

CJR strategies	Model Implementation	Model intended impacts
• Mandatory, randomised design to observe results in a wide variety of hospitals and markets. • CJR hospitals receive separate episode target prices for MS-DRGs 469 and 470, reflecting the differences in spending for episodes initiated by each MS-DRG. • Simple risk stratification methodology to set different target prices for patients with hip fractures within each MS-DRG. • Participating hospitals receive bonuses or pay penalties based on Medicare spending per hip- or knee-replacement episode (defined as the hospitalisation plus 90 days after discharge). • Hospitals share savings with Medicare if spending falls below the benchmark or, starting in 2017, they pay a penalty if spending exceeds the target. As with the accountable care organisation programs in Medicare, the savings or losses of hospitals are adjusted according to their performance in a mix of hip- or knee-replacement quality measures such as rates of complications.	• CJR implemented in 67 geographic areas, defined by metropolitan statistical areas (MSAs). • On 1 December 2017, participation for all rural and low volume providers in CJR became voluntary as did participation for all providers located in 33 of the 67 MSAs. • During a CJR episode, fee-for-service payments are made as usual to all providers. Participating hospitals then undergo an annual retrospective reconciliation process in which their average spending per episode is compared with a hospital-specific benchmark. • The episode benchmark prices used to calculate hospitals' target prices are based on a blend of a hospital's own historical standardised spending and regional historical standardised spending on LEJR episodes, moving towards 100% regional pricing for Performance Years 4 and 5.	• Reduce spending without compromising quality across an entire episode of care during the index hospitalisation and after discharge.

Source: Based on CMS (2018), Comprehensive Care for Joint Replacement Model, retrieved from: https://innovation.cms.gov/initiatives/CJR and CMS Comprehensive Care for Joint Replacement Model: Performance Year 1 Evaluation Report, retrieved from: https://innovation.cms.gov/Files/reports/cjr-firstannrpt.pdf

An evaluation of the first two years of the program identified modest reduction in spending per hip- or knee-replacement episode, without an increase in rates of complications.[48] While the program yielded a three per cent reduction in payments, this was significantly offset by bonuses paid by Medicare to hospitals with spending below their benchmark.

Decreased Medicare spending on hip- and knee-replacement episodes at participating hospitals was almost exclusively related to reductions in the use of post–acute care services in skilled nursing facilities and inpatient rehabilitation facilities. The two year evaluation results were consistent with previous data demonstrating savings in bundled-payment models, and other alternative payment models have been concentrated in changing the use of post–acute care services.[49,50] Post–acute care services may be the easiest target for hospitals to decrease episode-level spending because it is often unclear when these services are beneficial or what intensity of post–acute care is most appropriate.

The CJR program is unique in that it is one of the only payment models in Medicare implemented as a mandatory randomised trial. The mandatory participation in the CJR program generated considerable debate, culminating in the Trump administration transitioning the program to a partly voluntary model as of March 2018.[51]

While the future of mandatory payment models is uncertain, the CJR program was useful in addressing the question of whether savings seen in previous evaluations of bundled-payment programs were attributable to the select nature of the hospitals that volunteered.

A primary concern about current bundled-payment programs is that they create a financial incentive to treat healthier patients rather than those who are sicker and whose care may be more costly. There has been inconsistent evidence on risk selection in previous evaluations of voluntary bundling and the CJR program. While the CJR program evaluation did not identify any substantive changes in primary risk selection, in treatment areas, researchers found evidence of differential reductions in the percentage of disabled patients undergoing hip- or knee-replacement procedures. Adjustment for these and other observable characteristics of the patients had a minor effect on estimates of savings. However, the authors could not examine whether changes in other unobserved risk factors for high spending after surgery may have contributed to study results. Risk selection under the CJR program therefore requires further investigation.[52]

Summary

- The CJR payment reform program focused on incentivising hospitals to reduce costs while maintaining or improving quality.
- The model provides evidence for a bundle or episode-based payment in which costs of a patient's office visits, tests, treatments and hospitalisations associated with a patient's illness, medical event, or condition are grouped together. Under such arrangements, the value-based payment 'contractor' assumes responsibility for both the outcomes and the costs of the care across the continuum of the patient's trajectory for that condition[53].
- In an episode-based arrangement, several related episodes can be brought together. This requires robust data quality and availability. A key enabler for CJR was robust data collection systems and clinician buy-in and engagement.

[48] Barnett, M et al. (2019). *Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement,* New England Journal of Medicine; 380:252-262.
[49] *Ibid*
[50] Damberg, C et al. (2014). *Measuring success in health care value-based purchasing programs.* Rand Health Q. Dec 30; 4(3):9. eCollection 2014 Dec 30
[51] Barnett, M et al. (2019). *Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement,* New England Journal of Medicine; 380:252-262.
[52] *ibid*
[53] New York Department of Health (2017). *DSRIP Program Roadmap.*

- Internationally, more and more countries are implementing emerging best practices to treat chronic conditions as full-year-of-care bundles, emphasing the continuous nature of this care, including all condition-related care costs.[54]
- New York State has prioritised the Maternity Care Arrangement (spanning the pregnancy, delivery, 60 days postpartum for the mother, and the first month of the baby's care) for bundle-payment.[55]
- In Australia, several of the necessary preconditions for the successful implementation of bundled pricing for maternity care, and bundled pricing schemes generally within Australian public hospitals, was considered by IHPA in 2017.[56]

A.3 The Maryland All Payer System

The state of Maryland has operated an all-payer hospital rate-setting system since the mid-1970s. It is the only state in the United States that was exempt from Medicare's Inpatient Prospective Payment System and Outpatient Prospective Payment System. Until the All-Payer Model took effect in 2014, Maryland maintained these exemptions by meeting the requirement that cumulative growth in Medicare inpatient payments per admission since January 1981 remain below cumulative growth nationally.

However, in recent years, the cost per admission grew at a faster rate in Maryland compared to the rest of the United States. This created concerns that without a change in cost trajectory, Maryland's long-standing waiver could be at risk. Furthermore, the focus on cost per admission was poorly aligned with other health care delivery system reforms underway in Maryland and across the United States that focused on comprehensive, coordinated care across delivery settings.[57]

In response to these concerns, Maryland proposed a new hospital payment model which focused on a move from controlling payments per inpatient admission to controlling total payments for hospital services. On 1 January 2014, Maryland implemented its All-Payer Model for hospitals. This transitioned the state's hospital payment structure to an all-payer, annual, global hospital budget that encompasses regulated inpatient and outpatient hospital services.

Maryland adopted the All-Payer Model as the first step toward a population-based payment model that would hold hospitals responsible for use of all health care services by the populations they serve. Under the new agreement with the CMS, Maryland must do the following:[58]

- limit all-payer per capita inpatient and outpatient hospital cost growth to the previous 10-year growth in gross state product, set at 3.58 per cent annually for the first 3 years of the model, with an opportunity to adjust the rate for Years 4 and 5 based on more recent data
- generate $330 million in savings to Medicare over five years based on the difference in the Medicare per-beneficiary total hospital cost growth rate between Maryland and that of the nation overall
- reduce its 30-day readmission rate to the unadjusted national Medicare average over five years
- reduce the rate of potentially preventable complications by nearly 30 per cent over five years
- limit the annual growth rate in per-beneficiary total cost of care for Maryland Medicare beneficiaries to no greater than 1.0 percentage point above the annual national Medicare growth rate in that year
- limit the annual growth rate in per-beneficiary total cost of care for Maryland Medicare beneficiaries to no greater than the national growth rate in at least one of any two consecutive years

[54] de Bakker, D. H., J. N. Struijs, C. B. Baan, J. Raams, J. E. de Wildt, H. J. Vrijhoef and F. T. Schut. (2012). *"Early results from adoption of bundled payment for diabetes care in the Netherlands show improvement in care coordination."* Health Aff (Millwood) 31(2): 426-433; De Brantes, F., A. Rastogi and M. Painter (2010). "Reducing potentially avoidable complications in patients with chronic diseases: the Prometheus Payment approach." Health Serv Res 45(6 Pt 2): 1854-1871.
[55] *ibid*
[56] Independent Hospital Pricing Authority *(2017). Bundled pricing for maternity services – Final report.*
[57] Haber, S. et al. (2018). *Evaluation of the Maryland All-Payer Model: Third annual report.*
[58] *ibid*

- submit an annual report demonstrating its performance along various population health measures.

By July 2014, all 46 general acute-care hospitals in the state were operating under a global budget, with global budgets encompassing 95 per cent of hospital revenue. Under the Maryland All-Payer Model, the Health Services Cost Review Commission establishes an annual global budget, or allowed revenues, for each hospital.

The annual budget is built from revenues during a base period (2013), which are adjusted for future years using a number of factors, both hospital specific and industry wide. Each year the hospital's global budget is updated to reflect an allowed rate of hospital cost inflation, approved changes in the hospital's volume based on changes in population demographics and market share and additional adjustments related to reductions in potentially avoidable utilisation, quality performance, uncompensated care and changes in various adjustments (e.g. user fees).

The Health Services Cost Review Commission then sets rates for services that Maryland hospitals use to bill all payers so that total payments (based on expected utilisation) will match the global budget. Public payers (Medicare and Medicaid) are allowed a 6 per cent discount on charges, which was also in place before the implementation of the All-Payer Model. As under Maryland's previous hospital payment system, each hospital bills payers for services provided using the hospital's service-specific rates. Unlike the previous system, the global budget establishes a ceiling on hospital revenues. Except for certain hospitals, the global budget cap applies to services provided to both Maryland residents and non-residents. In addition to services provided to non-residents at hospitals with an exemption for non-resident services, hospitals are permitted non-regulated revenues for other specified services (for example, home health, outpatient renal dialysis, and skilled nursing facility services).

Hospitals have an incentive to ensure that revenues do not fall short of or exceed their budgets. To the extent that actual utilisation deviates from projected utilisation and hospital revenues vary from the global budget, a one-time adjustment to the approved budget for the following year is made to compensate hospitals for charges less than the approved budget and to recoup charges in excess of approved revenues.

Table 4: Maryland Program Design

Maryland All-Payer Model Strategies	Model Implementation	Model intended impacts
• Hospital global budgets • All-payer rate setting • Quality based reimbursement • Maryland hospital acquired condition program • Care Redesign Program • Workforce transformation • Population health initiatives • Other health system reform initiatives (CRISP, SHIP, PCMHs, ACOs, SIM Model Design grant, HCIA)	• Updates to hospital budgets, including penalties for billing in excess of budget, market share adjustments, penalties for potentially avoidable utilisation, and other performance-based payments • Changes in charges to meet hospital budget target • Investment in hospital infrastructure to support care management and population health improvement • Participation in care coordination initiatives and community partnerships for population health improvement • Participation in Care Redesign Program	**Hospital Financial Performance** • Changes in hospital revenue, operating expenses, and operating margins **Hospital Market Dynamics and Service Mix** • Hospital-physician alignment • Hospital alignment with unregulated providers • Hospital mergers, acquisitions, and system alignments • Hospital openings and closures • Changes in hospital service lines **Quality of Care** • Reduction in 30-day readmission rate • Reduction in rate of admissions for potentially preventable conditions • Reduction in occurrence of patient safety events • Increase in rate of 14-day post discharge follow-up • Improvement in patient experience of care • Improvement in health outcomes **Health Care Utilisation** • Reduction in hospital admissions • Reduction in preventable emergency department visits • Decrease in hospital length of stay • Increase in outpatient utilisation in unregulated settings • Increased use of preadmission and post-acute care services **Health Care Costs** • Reduction in Medicare hospital payments • Reduction in all-payer per capita hospital cost growth • Reduction in per capita total health care expenditures • Reduction in beneficiary cost sharing

Source: KPMG analysis based on Haber, S. et al. (2018), Evaluation of the Maryland All-Payer Model: Third annual report.

Three recent studies have sought to understand more about the effect of Maryland's payment reforms on the delivery of care. One study reported on the experience of areas served by seven rural hospitals in the pilot period,[59] a second on the experience of eight counties not previously part of the pilot program during the first two years of the statewide model[60] and a third on all 24 Maryland counties through the first three years of the model.[61]

1. In terms of absolute changes that occurred during the intervention, the three studies all found similar experiences for the Medicare population in Maryland: reductions in hospital admissions and increases in emergency department use without admission.
2. Hospitals moved 100 percent of their revenue across all payers into population-based payments in just three years, and the state surpassed its cumulative savings target of $330 million in reduced Medicare hospital expenditures, generating $916 million in savings, relative to what was the estimated projected Maryland spending based on the national growth rate, through 2017.[62]
3. Hospitals also improved quality, reducing by half the rate of potentially preventable conditions that comprise Maryland's Hospital Acquired Condition program.[63]

In the proposed next phase of the model, Maryland plans to commit to achieving savings in the total cost of care delivered to patients, whether in the hospital or the ambulatory setting.[64] The Maryland Total Cost of Care model, under the authority of the Innovation Center, marks the first time that CMS will hold a state accountable for the total cost of care incurred by resident Medicare fee-for-service beneficiaries.[65]

Summary

- The focus of the Maryland All-Payer Model was on reducing hospital expenditure, primarily through hospital diversion and reduced utilisation.
- A fundamental component of the program was the close coordination between federal and state partners, from program design to execution. It also required extensive resource investment from CMS and the state, given the joint responsibility for administering the model's programs.

[59] Roberts ET, Hatfield LA, McWilliams JM, et al. (2018). *Changes in hospital utilization three years into Maryland's global budget program for rural hospitals.* Health Aff (Millwood). 2018; 37(4):644-653.
[60] Roberts ET, McWilliams JM, Hatfield LA, et al. (2018). *Changes in health care use associated with the introduction of hospital global budgets in Maryland.* JAMA Intern Med. 2018; 178(2):260-268.
[61] Haber S, Beil H, Amico P, et al; RTI International. (2018). *Evaluation of the Maryland all-payer model: third annual report.* https://downloads.cms.gov/files/cmmi/md-all-payer-thirdannrpt.pdf. Published March 2018. Accessed April 12, 2018.
[62] Health Services Cost Review Commission (2017). *All-payer model results,* CY 2014-2017. Retrieved from: https://hscrc.state.md.us/Documents/Modernization/Updated%20APM%20results%20through%20PY4.pdf.
[63] *Ibid*
[64] Sapra, K., Wunderlich, K., and Haft, H. (2019). *Maryland total cost of care model,* Journal of the American Medical Association, 321:10, 939-40.
[65] *Ibid*

A.4 New York State Delivery System Reform Incentive Payment

There are approximately six million Medicaid beneficiaries across New York State and Medicaid expenditure is around USD$6 billion each year. In the period from 2003-2011, spending on Medicaid was rising at 10 per cent annually, reaching USD$50 billion in 2011. Despite the spiraling expenditures, quality measures were declining.

New York embarked on a wide ranging program of Medicaid Redesign designed to improve health outcomes, efficiency of service delivery and value for money over a nine year period commencing in 2011. Through the Medicaid Redesign program, the state was able to curb the growth in spending and demonstrate projected saving of around USD$17 billion. In 2014, the federal government approved a waiver which enabled New York State to reinvest $8 billion of the future savings back into the system in the form of the Delivery System Reform Incentive Program (DSRIP). The DSRIP is running over the period 2014–2020.

One of the major components of this program is instituting a new payment model with the goal of converting 80-90 per cent of payments from fee-for-service to value-based by 2020. DSRIP is a major collective effort to transform New York State's Medicaid health care delivery system from a fragmented inpatient care focused system, to an integrated and community based system focused on providing care in or close to the home.[66]

The guiding principles of the New York approach are shown in Table 6.

Table 6: Payment reform guiding principles

- Transparent and fair, increase access to high quality health care services in the appropriate setting, and create opportunities for both payers and providers to share savings generated if agreed benchmarks are achieved
- Be scalable and flexible to allow all providers and communities, regardless of size, to participate, reinforce health system planning, and preserve an efficient and essential community provider network
- Allow for a flexible multi-year phase to recognise administrative complexities including system requirements (i.e. information technology)
- Align payment policy with quality goals
- Reward improved performance as well as continued high performance
- Incorporate a strong evaluation component and technical assistance to assure successful implementation
- Engage in strategic planning to avoid the unintended consequences of price inflation, particularly in the commercial market
- Financially reward, rather than penalise, providers who deliver high value care through emphasising prevention, coordination, and optimal patient outcomes, including interventions that address underlying social determinants of health

Source: New York Department of Health (2017), *DSRIP Program Roadmap.*

Over the last two years of the program, New York has designed 11 different payment reform options ranging from mental health to diabetes to long term care. New York has put together a distinctly flexible 'menu of options' for providers to engage in payment reform. They have clearly articulated that by the end of the program, all providers' performance will be evaluated on a 'value basis' (i.e. reference to quality outcomes and efficiency of spend).

[66] New York Department of Health (2017). *DSRIP Program Roadmap.*

However, realising that there is a wide range of capability and appetite for adopting a new payment model, New York is allowing providers to 'opt in' when they want, how they want and with varying levels of risk sharing. Providers can select between options such as a capitated budget for a general population (e.g. based on a registered GP list) to a condition-specific bundle (e.g. maternity) to a capitated budget for a specific demographic (e.g. learning disabilities).

Therefore, multiple payment reform options can co-exist and be tailored to a provider's scale and care focus. Providers may also choose to adopt these arrangements virtually, with limited risk sharing for the first year or two to allow them to build up their capacity for risk bearing.

The scheme covers all Medicaid services for patients in the state, including primary, community and hospital care. The only exclusions are high cost drugs and transplantation services which continue to be paid for on a pass-through and fee-for-service basis respectively. All health care providers delivering Medicaid reimbursed services are encouraged to opt in to value-based payments. There is no tendering but there is a range of alternative providers and patient choice.

Providers are given a 'target budget' for a specific population or condition. If they are more cost efficient than the target budget and meet pre-determined quality measures, they are eligible for 'shared savings' which is split between the provider and commissioner. The more risk the provider bears, the higher proportion of the savings it keeps.

While New York is allowing providers to 'opt in' at their own discretion, there are a number of bonus incentive payments to increase early implementation of value-based payment. For example, providers who pilot value-based payment arrangements receive a bonus as do providers who quickly move up in levels of risk sharing.

In addition to the incentivising bonus payments for certain providers, New York also will be enforcing penalties (e.g. decreased future budget) to those providers who by Year 5 are exceeding their target budget and missing their quality measures. Providers who are partnering with others are responsible for coordinating amongst themselves how to distribute both risk sharing and any potential shared savings.

Patients can choose a range of competing systems for Medicaid services and switch away from one system for services when they wish to do so. This means that there is an additional constraint preventing providers from reducing access to or quality of care within a capitated system, alongside the measurement of access and quality standards as part of the scheme.

There is little publicly available information on the costs for purchasers and providers of administering the scheme. These may be quite high, given the costs of billing for reimbursement of services and the costs of monitoring providers' performance.

Since the New York DSRIP is ongoing, there are only preliminary results. Some early results show promise. On national comparisons of avoidable hospital use and cost, for example, New York has moved from 50th to 26th in the last six years. Over the period 2009 to 2015, New York's overall health system quality of care has also improved from 21st to 13th in the country. New York has garnered significant provider and stakeholder buy in with an estimated 15 value-based payment pilots beginning this year.

The scheme gives providers flexibility for providers to decide how to phase in new payments and incentives, allowing more advanced providers to excel and giving struggling providers time to adjust to the new reimbursement method. Many of the payment reform options can be piloted virtually with incremental risk transfer to help build up data on costs and performance and develop providers' capability to operate the new system. The opportunity for shared savings is more attractive to providers than an outcomes-based approach where the budget is top sliced and payment withheld until the achievement of the desired outcomes.

The approach requires strong system leadership, robust governance and a pragmatic timeline to implement multiple payment options. New York had a significant amount of upfront investment from the federal government to help implement this program. Many of the payment reforms focus on promoting prevention and primary care efforts, however it may take many years to truly realise the effects of these efforts. It may require a robust data and analytics capacity to implement the system.

One of the objectives of the DSRIP is to bridge the gap between health and social sectors through value-based payment arrangements in areas such as learning disabilities. They are doing this by incentivising

holistic outcomes (e.g. meaningful day measures) and also by looking at total expenditure across health and social care.

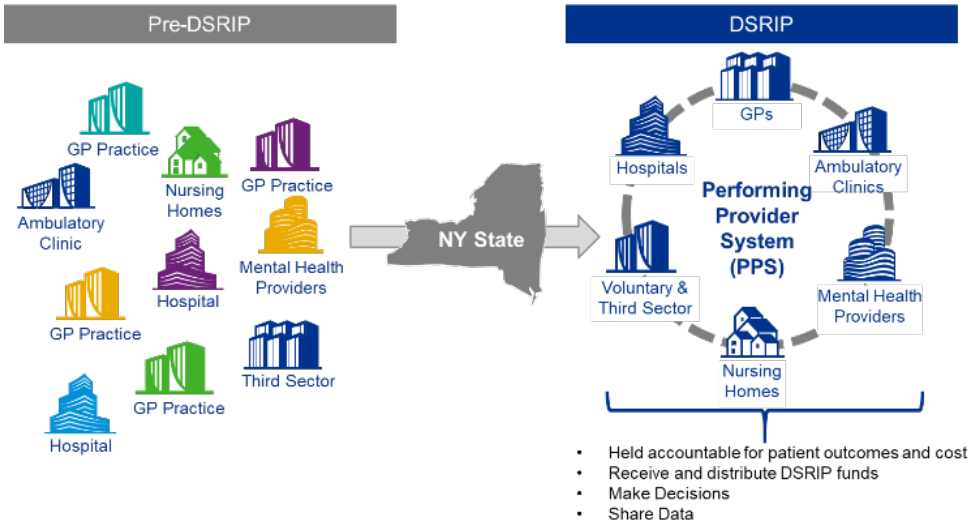
Overall, the New York program is also a good example of how to implement large payment reform across a varied provider landscape. By using a mix of 'carrots and sticks' to incentivise providers to adopt value-based payment arrangement, it simultaneously allows for progressive providers to move forward and lagging providers time to adjust.

New York organised its DSRIP by selecting lead entities through an application process to create Performing Provider Systems. The Performing Provider Systems are the provider clusters that are engaged in the Medicaid DSRIP.

A total of 25 Performing Provider Systems have been established in New York State to implement innovative projects focused on system transformation, clinical improvement and population health improvement. All DSRIP funds are based on achievement of performance goals and project milestones.

Performing Provider Systems were required to select between five and 11 clinical projects to implement from a menu of 44 projects curated by the state, in consultation with CMS. The range of projects addresses system transformation, clinical improvement, and population health. Projects are based in hospital, primary care, behavioural health, skilled nursing, and other home- and community-based settings. Performing Provider Systems are responsible for reporting to the state a robust set of process metrics and are accountable for meeting performance metrics, such as reductions in potentially avoidable emergency room visits, potentially avoidable readmissions, and Healthcare Effectiveness Data and Information Set metrics.[67]

Figure 2: Pre and post DSRIP ecosystem



The Staten Island Performing Provider System below provides an example of how Medicaid programs are being delivered on the ground under the DSRIP.

[67] Bachrach, D. et al. (2016). *Implementing New York's DSRIP Program: Implications for Medicaid Payment and Delivery System Reform, Commonwealth Fund.*

A.5 Staten Island Performing Provider System

The Staten Island Performing Provider System (SI PPS) is an alliance of clinical and social service providers focused on improving the quality of care and overall health for Staten Island's Medicaid and uninsured populations, which include more than 180,000 Staten Island residents.

Staten Island Performing Provider System are co-led by Staten Island University Hospital and Richmond University Medical Center. It includes a network of over 70 partners of skilled nursing facilities, behavioural health providers, home health care agencies and a wide range of community-based clinical facilities, treatment centres, social service and community organisations, primary care physicians and medical practices across the island.

Through a Community Needs Assessment, Staten Island Performing Provider System focus on 11 DSRIP projects which address the following health care issues: Primary Care, Mental Health, Substance Abuse, Chronic Disease, Long Term Care and Population Health.

Table 5: Overview of the SI PPS implementation

Implementation of SI PPS	Activities
1. Community Needs Assessment	• Review of the Staten Island Medicaid and uninsured population to be served. • Assessment of the population's health status and needs. • Analysis of the health care resources and community-wide infrastructure available to address these needs. • Assessment of the health care environment from the perspective of community stakeholders. • Identification of the critical health challenges facing the community.
2. Project identification	Development and implementation of 11 projects focused on: • behavioural Health • care management • primary care • continuing care.
3. Ongoing monitoring and evaluation	Development of ongoing monitoring tools to identify outcomes and lessons learnt: • interactive data maps • evaluation and outcomes reporting.

Source: NY DoPH (2014), Staten Island CNA report
https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/pps_applications/docs/richmond_med_ctr_staten_island_hospital/3.8_richmond_cna.pdf

A number of projects implemented and evaluated by the SI PPS have demonstrated positive impacts. More generally, in the context of the payment model, key findings from the most recent evaluation report regarding PPS include the following:[68]

- Almost all the Performing Provider Systems reported major preparatory activities for the shift to value based payments with their partners. These activities included building educational tools.
- Some Performing Provider Systems began with many partners already having value based payment-equipped models and others with few partners equipped to implement value based payment. Community-based organisations needed more assistance in preparing for value based payments.
- Most stakeholders identified value based payment as fundamental to the DSRIP transformation of health care.
- Performing Provider System did not have full access to all State-wide Health Information Network for New York during Demonstration Years 0-2, which made it difficult to obtain the information they needed to develop projects and track progress.
- Many Performing Provider Systems moved funds to partners quickly and felt that this improved their partnership relationships. Others took a more conservative approach in order to maintain accountability for how funds were spent.

[68] Dewar, D. et al. (2018). *State-wide Annual Report by the Independent Evaluator for the New York State Delivery System Reform Incentive Payment (DSRIP) Program.* Retrieved from https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/eval/docs/2018-final_eval_rpt.pdf

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