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Key messages

- Value in health care has been defined as the health outcomes that matter to patients relative to the resources or costs required. The health outcomes that matter are multidimensional, including factors much broader than traditional clinical indicators. The resources or costs must reflect the actual costs of the care delivered to a patient over a full cycle of care. This recognises that a patient's full course of care can be provided by multiple providers and over a period of time involving multiple episodes of care.
- A value-based approach to health care provides a patient-centric way to design and manage health systems; it offers a frame of reference for dialogue between stakeholders when working towards improving value delivered to a defined patient group or segment of the population. This paper proposes inclusions of societal value in the concept of value-based health care, and greater consideration of the balance between clinically relevant outcomes and outcomes that matter to patients.
- Actions taken to improve value will be determined not only by evidence and the needs of a particular population, but also by the pattern of services and infrastructure that has evolved during decades of growth.
- Alignment with a value-based approach to health care was assessed by the Economist Intelligence Unit (2016) for 25 countries, including Australia. A country's alignment was considered with reference to progress in:
 1. Enabling context, policy and institutions for value in health care (8 indicators)
 2. Measuring outcomes and costs (5 indicators)
 3. Integrated and patient-focused care (2 indicators)
 4. Outcome-based payment approach (2 indicators).
- While the international perspective is perhaps more optimistic than might be supported from a national perspective, this paper does highlight that important enablers of value-based health care are already present in Australia.
- A key hindrance to greater alignment in Australia is that the components of value-based health care are being implemented individually and not as part of a coordinated strategy involving all tiers of government, health care providers and consumers.
- Sustained cultural change is needed at all levels and across all sectors. This requires: an aligned vision and action; incremental changes made within a comprehensive transformation strategy; distributed leadership being fostered; staff engagement being promoted; collaborative relationships being created; and the continual assessment and learning from change.
- While there is a developing body of literature and case studies internationally, there is a need to invest in the development of evidence in the Australian context, and which considers value in the context of universal health care, and broadly across the health system.

Executive summary

Australians have had access to universal health care for more than 30 years. However, our health care system is not immune to pressures of an ageing population, a growing burden of chronic disease, increasing life expectancy, increasing individual and community expectations, and escalating healthcare costs associated with new technology and treatments.

Many health care systems around the world are facing similar challenges and are looking to maximise the value of health care for populations, narrowing the gap between need and demand on one hand, and resources on the other.

This paper considers how value in health care is defined, outlining the opportunities that a value-based approach to health care offers in transforming health system focus from volume to value. It highlights the important enablers of value-based health care that are already present in Australia, and the barriers to adoption. It considers the application of international experience in value-based health care in an Australian context. In particular, it considers the unique challenges of translating learnings from other national health systems to Australia and its universal health system with objectives relating to equity and affordability.

The creation of value in partnership with patients is acknowledged as being central to implementation of value-based health care, and includes both agreeing on and measuring outcomes. Data to enable measurement of outcomes, cost and variation, are key to the creation of value, and also to establishing funding mechanisms that support a value-based approach to care. Case studies describe some current initiatives under way in Australia, but international experience suggests that a national strategy is required to effect transformation at scale.

The paper makes recommendations for enabling value-based health care through public policy in Australia. These include:

1. A national, cross-sector strategy for value-based health care in Australia
2. Access to relevant and up-to-date data
3. Evidence for value-based health care in the Australian context
4. Health workforce strategies supporting models of care that embrace a value-based approach
5. Funding systems that incentivise the delivery of value-based health care.

1 Defining value in health care

1.1 *Defining value from the patient's perspective*

Value in health care has been defined as the health outcomes that matter to patients relative to the resources or costs required (WEF 2017). This reflects the seminal work of Porter and Teisberg (2006). However, the term has become a buzzword, and, depending on who is setting the agenda, its meaning can be unclear and shifting (Pendleton 2018).

The concept of value should not be thought of as a simple equation. The health outcomes that matter to patients are multi-dimensional. The focus is not only traditional clinical indicators, but also includes broader factors such as the patient's quality of life and ability to work, and over a full cycle of care (WEF 2017). No single indicator captures the outcome of care (Porter 2010), and to be truly indicative of what matters to patients, patient involvement in the design and development of measures is essential (Wiering et al. 2017). In this respect, outcomes that matter to patients envisages a broader reflection of the patient experience across the course of their care, both clinically and personally assessed.

Similarly, the resources or costs must reflect the actual costs of the care delivered to a patient over a full cycle of care. These costs are often distributed across many providers (and divisional units within providers) as well as the patient and their family or carers.

1.2 *Defining value from a systems perspective*

In the Porter and Teisberg definition of value in health care, the focus is always the value which is delivered to the patient, not the health system as a whole or to any entity or provider within it (Porter 2010).

In a universal health care system, the concept of social value or the price governments are prepared to pay for health care, may also be a defining feature of value.

Using the Porter and Teisberg definition of value can still provide a way to design and manage health systems that are patient-centric and support the goal of universal care. The Porter definition offers a frame of reference for dialogue between stakeholders when working towards improving value delivered to a defined patient group or segment of the population (WEF 2017) or agreeing social value. It also provides a frame of reference for the allocation of resources to different patient groups or segments of the population (Gray 2017). It does this while aligning stakeholder focus on a shared objective of achieving health outcomes that matter to patients at an acceptable cost.

1.3 *Alignment with other concepts in health care*

A number of concepts in health care align with the concept of value, but they differ in focus.

Quality health care is generally defined through domains that reflect health care that is:

- Effective – adhering to the evidence base to achieve a desired outcome
- Accessible and equitable– timely, geographically reasonable and in a setting appropriate to need, unvarying because of personal characteristics such as gender, race, ethnicity, geographical location or socioeconomic status

- Acceptable/Person-centred/Responsive – taking into account the preferences and aspirations of individuals and the cultures of communities
- Coordinated – providing continuity of care across programs, practitioners, organisations and levels over time
- Safe – minimising risk and harm to service users
- Efficient and sustainable – achieving results through maximising resource use and avoiding waste (WHO 2006; AIHW 2017a).

Quality across these domains is often defined in terms of standards, with indicators that reflect, directly or indirectly, the extent to which a standard is met. Indicators can measure outcomes, processes or structure. In practice, outcome indicators may not always be a direct measure of care. Process indicators are usually more sensitive to differences in quality than outcome measures and can be easier to interpret; such indicators may be preferable when the link between process and outcome is clearly established (AIHW 2009). Process measurement is a useful internal strategy for health care providers and entities, recognising that such aspects of care can still matter to the patient (e.g. time to diagnosis), but it is not a substitute for measuring outcomes (Porter 2010).

Health system performance has been described as requiring simultaneous pursuit of three dimensions, the 'Triple Aim', being:

- Improving the patient experience of care (including quality and satisfaction)
- Improving the health of populations
- Reducing the per capita cost of health care (IHI 2019).

There have also been recommendations to expand the Triple Aim to a Quadruple Aim, adding the goal of improving the work life of health care providers, including clinicians and staff (Bodenheimer & Sinsky 2014).

The Triple and Quadruple Aims align with the concept of value. However, as noted earlier, the focus of value, as defined by Porter and Teisberg, is the value which is delivered to the patient, which then provides a frame of reference for other stakeholders, whether that be addressing the needs of a defined patient group or segment of the population, the sustainability of the health system, or when considering issues around, for example, the wellbeing of the health care workforce.

2 Creating value in partnership with patients

Value for patients is created at the local level, by the combined efforts of providers over the full cycle of care and across the health sector. It requires:

1. Systematically agreeing and measuring outcomes that matter to patients, and costs required to deliver those outcomes over a full cycle of care
2. Tracking those outcomes and costs for defined population segments on an ongoing basis
3. Developing customised interventions to improve value for each population segment (WEF 2018a).

2.1 Defining patient groups or population segments and cycles of care

In using value as the frame of reference, patient groups and population segments must be carefully defined, by health condition and stratified according to risk profiles (WEF 2017).

For each condition, a care cycle must be defined, with a beginning and an end. This may be challenging when the frame of reference extends *upstream* to include preventive strategies and *downstream* to include long-term monitoring and management of chronic conditions. For chronic conditions, a care cycle for a period of time may be defined (e.g. one year) (Kaplan & Porter 2011). Consideration is also needed for how value is measured for patients with multiple health conditions.

2.2 Agreeing and measuring outcomes

For any condition or population, multiple outcomes achieved collectively will define success. These outcomes should include health circumstances *most relevant to patients*, and so be co-designed with patients and/or patient groups. They should:

- Incorporate both *near-term and longer-term aspects*, addressing a period long enough to encompass the ultimate result from the health care provided;
- Capture *health status* achieved or retained (e.g. functional level achieved, pain level achieved); the *process* of recovery (e.g. time to recovery and time to return to normal activities, disutility of care such as complications and adverse effects); and the *sustainability* of health (e.g. recurrence, long term consequences of therapy); and
- Include sufficient measurement of risk factors or initial conditions to allow for *risk adjustment and stratification* (Porter 2010).

The complexity of health care means that competing outcomes must often be weighed against each other, e.g. immediate safety aspects versus long-term functionality (Porter 2010). A single composite measure has been proposed, composed of multiple outcomes weighted by empirical criteria such as the reliability, validity, impact or evidence of the measure, or weighted by a value judgement determined with input from patients, providers and funders (Lee et al. 2016). However, methods to combine scores are under-developed.

The International Consortium for Health Outcomes Measurement (ICHOM) works with health leaders and consumers internationally to develop sets of standardised outcomes for health conditions or patient groups, together with measurement tools and time points and risk adjustment factors. These Standard Sets are developed through a multidisciplinary group of patient

representatives, and clinical and registry leaders considering the outcomes from different treatments and prioritising a core set of outcomes (ICHOM 2019).

Internationally-agreed standards for health outcomes will create ‘an unparalleled opportunity to learn from high-performing clinical teams and innovators, no matter where they operate’ (WEF 2017). This would represent a development from the sharing of process indicators, such as currently occurs through the Organisation for Economic Cooperation and Development (OECD), to the sharing of outcome indicators, such as the initiative now being pursued by the OECD with the Patient-Reported Indicators Survey (PaRIS) (OECD undated).

Sets of patient-centred outcome measures have also been developed for use within local environments, for care organised around a patient group or population segment and for a cycle of care. For example, King’s Health Partners Academic Health Sciences Centre in London publishes Outcomes Books for a broad range of conditions and population segments. These are implemented in routine clinical practice and research through its three partnering NHS Foundation Trusts (King’s Health Partners 2019), with support to integrate outcome measures into clinical practice to improve care as it happens. Similarly, Santeon, a network of seven teaching hospitals in the Netherlands, has used multidisciplinary teams (including patients) to develop outcome metrics for five patient groups in order to support a structured approach to implementing value-based health care.

In Australia, Dental Health Services Victoria, in collaboration with ICHOM, has developed a standard set of patient-relevant outcome measures for oral health care. Together with population-level outcomes, these are being used to re-design the way public dental services are delivered (VBHC Prize 2019).

2.3 Measuring costs

Valid value-based comparisons require consensus around how to calculate costs for health conditions. However, methods to do this are under-developed (Lee et al. 2016).

Time-driven activity-based costing (TDABC) has been proposed to calculate the cost component of value. It calculates the costs of health resources consumed as a patient moves along a care process and is considered well-suited to accommodate the complexity of cost accounting in the health care setting (Keel et al. 2017).

TDABC requires two key parameters: the capacity cost rate and the time required to perform activities in service delivery. It is applied in the health care setting through a seven-step process:

1. Select the health condition (patient group or population segment)
2. Define the care delivery value chain (i.e. chart all key activities performed within the entire care cycle)
3. Map the process, including each activity in patient care delivery and incorporating all direct and indirect capacity-supplying resources
4. Obtain time estimates for each process (i.e. for activities and resources used)
5. Estimate the cost of supplying resources for patient care (i.e. cost of all direct and indirect resources involved in care delivery)
6. Estimate the capacity of each resource to calculate the capacity cost rate (which is the cost of capacity-supplying resources divided by the practical capacity of those resources)
7. Calculate the total cost of patient care (Kaplan & Porter 2011; Keel et al. 2017).

This approach to measuring costs also benefits from actively engaging everyone involved in the care cycle (clinicians, administrative staff, finance professionals) in creating the process maps, providing a shared understanding of actual processes of care and their costs, and improving value together (Kaplan & Porter 2011).

TDABC can help efficiently cost processes, overcoming challenges associated with current cost-accounting methods. However, the ability of TDABC to inform coordination of care delivery across sectors and reimbursement systems has not yet been demonstrated (Keel et al. 2017).

Rather than replacing existing systems with TDABC, consideration could instead be given to how this methodology can be gradually incorporated into current systems, progressively bringing stable and reliable process-level cost-accounting practices to health care delivery (Keel et al. 2017).

Case 1: Applying TDABC in the operating theatre

Time-driven activity-based costing (TDABC) has been used by the Peter MacCallum Cancer Centre, Melbourne, to model anaesthetic personnel costs for a high-turnover operating list comprising predominantly breast and melanoma surgery (Basto et al. 2019). These costs were then used to assess the value of a process re-design, comparing serial design (with induction of anaesthesia within the operating room) with parallel design (with induction of anaesthesia within adjacent induction rooms). Application of this model demonstrated that a significant increase in efficiency, at minimal expense for additional resources and without impacting patient safety, could be achieved.

It has been proposed that less comprehensive approaches based on the most significant and easiest-to-measure cost drivers for a given patient group or population segment can be embraced as a starting point. This may incorporate length of stay, operating theatre time and cost of expensive purchased items (e.g. medicines, devices). Providers can then measure and manage those costs initially, while continuously improving the approach to become more comprehensive (WEF 2017).

2.4 Understanding variation to develop customised interventions

There are wide variations in health outcomes across hospitals, regions and countries, with no clear relationship between the costs associated with providing health care and the health outcomes delivered (OECD 2017a; OECD 2018; Rosenberg et al. 2016; ACSQHC & AIHW 2018). There can also be wide variations in outcomes and costs for different treatment approaches to the same condition.

Tracking outcomes and cost by population segment provides one lens by which comparisons can be made between health care providers or locations, or between interventions. Standardisation and visualisation of outcome and cost indicators, such as through radar charts, has been proposed to allow more comprehensive and collaborative discussions about the value of health care services (Thaker et al. 2016).

Interdisciplinary teams of clinicians can then use the data to:

- Facilitate patient-centred decision-making;
- Identify best practices in processes of care and levels of activity that contribute to the best outcomes for patients;
- Reduce the unwarranted variation in processes of care and levels of activity to improve outcomes across providers; and

- Recognise that variation in processes of care may be warranted and desirable to meet different patients' health needs or preferences, and develop increasingly customised interventions and treatment pathways, improving value for each segment over time (WEF 2018).

Clinical quality registries provide an effective mechanism for capturing and reporting process and outcomes data for specific clinical conditions or treatments and enabling comparisons.

Atlases of variation are being used to highlight variation in costs, outcomes and intervention rates. While not demonstrating the impact of unwarranted variation on patient outcomes, they act as a catalyst for change. They engage all participants in the health system to explore the reasons for variation and determine whether appropriate care is being delivered (Duggan et al. 2016).

However, when unwarranted variation is identified, actions taken to improve value will be determined not only by evidence and the needs of a particular population, but also by the pattern of services and infrastructure that has evolved during decades of growth (Gray 2017). A framework for analysing variation has been proposed (Sutherland & Levesque 2019).

3 Alignment of Australia's health system with a value-based approach

In 2016, a global assessment of 25 countries was undertaken to gain an understanding of the extent to which countries are aligned with a value-based approach to health care (EIU 2016a). Countries were classified into four categories (Low, Moderate, High or Very High) based on an assessment against 17 indicators, grouped according to their contribution towards:

1. Enabling context, policy and institutions for value in health care (8 indicators)
2. Measuring outcomes and costs (5 indicators)
3. Integrated and patient-focused care (2 indicators)
4. Outcome-based payment approach (2 indicators) (EIU 2016a).

Overall Australia, along with nine other countries, was classified as having Moderate alignment, with only Sweden (Very High) and the United Kingdom (High) being classified higher. The results as assessed for Australia are in Appendix 1. While the international perspective is perhaps more optimistic than might be supported from a national perspective, this report does highlight that some important enablers of value-based health care in Australia are already present.

A key hindrance to greater alignment in Australia, and which is typical for countries with Low and Moderate alignment, is that the components of value-based health care are being implemented individually and not as part of a coordinated strategy (EIU 2016a). Public policy has been identified as having a critical role in enabling value-based health care (WEF 2017).

Due to the scale of reform required to realise a value-based approach to health care, leadership also needs to transcend electoral and budgetary cycles, and jurisdictional and professional boundaries. Australia can view favourably the reforms made in the funding of public hospitals over the past decade, notwithstanding the complexity of achieving these reforms, for evidence of the feasibility of achieving broader system reform.

3.1 Enabling context, policy and institutions for value in health care

Realising the potential of value-based health care requires unprecedented cooperation, coordination and partnerships among all stakeholders – providers, funders and patients (WEF 2017; EIU 2016a).

A country's alignment with value-based health care (EIU 2016a) has been established by:

- The extent to which the population had health coverage (public or private health insurance).
- The existence of an explicit strategy or plan, expressed by the government or health ministry, to move away from a fee for service payment system to a health system that is organised around patient outcomes
- The extent to which the government or health ministry has taken action to promote and/or facilitate value-based health care
- The extent to which non-government stakeholders supported moving toward a value-based health care delivery system
- The extent to which value-based health care forms part of the training curriculum for one or more health professional roles
- The existence and independence of health technology assessment organisations
- The existence of an evidence-based guideline producing organisation, and the extent to which it includes a move towards outcomes-based health care.

3.1.1 Universal health coverage

Universal health coverage means that 'all people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while ensuring that the use of these services does not expose the user to financial hardship' (WHO 2019). It embodies objectives of equity in access, quality of services and protection against financial risk. Australia scored high on this measure (EIU 2016a).

Medicare is Australia's universal health insurance scheme, operating within a system of public and private funding and delivery of health care. Medicare enables all Australians to be treated in a public hospital without charge and provides a rebate against the cost of medical fees incurred through general practitioner and specialist services, selected diagnostic imaging and pathology services, eye checks by optometrists, allied health services in limited circumstances and some medical services for private patients in public and private hospitals.

However, there are concerns that universal health coverage is being undermined by the growth in out-of-pocket costs. The Commonwealth Fund compared the performance of health systems internationally across domains that embody universal health coverage. While Australia was ranked high overall, rankings dropped in terms of access, incorporating affordability and timeliness of care, and even more so for equity (Commonwealth Fund 2017). Similarly, data reported in the Productivity Commission's Report on Government Services reflect issues with health care access and equity in Australia (PC 2018).

Australians' out-of-pocket medical spending as a share of final household consumption is high compared to OECD averages (OECD 2017a). There is substantial variation in total out-of-pocket costs, including within areas of similar socioeconomic status and within areas of similar remoteness (AIHW 2018a). Some Australians are also delaying or not getting care due to cost, including for medical specialists, general practitioners and diagnostic imaging and pathology (AIHW 2018a).

However, access may be conceptualised more broadly, resulting from the interface between the characteristics of persons, households, social and physical environments and the characteristics of health systems, organisations and providers. It has been defined as ‘the opportunity to reach and obtain appropriate health care services in situations of perceived need for care’ (Levesque et al 2013). Acceptability of services is introduced as a dimension of access, ensuring care meets the needs of different cultural, socioeconomically disadvantaged and vulnerable populations (Levesque et al 2013).

Concerns have also been expressed that universal health coverage is undermined by government subsidisation of private health insurance, particularly as there is a lack of clarity about the role and therefore value of private health insurance within the context of a universal health care system (Duckett 2019).

3.1.2 An explicit strategy for outcomes-focused health care

Australia scored low on this measure (EIU 2016a). In Australia, national strategies relating to health have been explicitly expressed by the Federal Government, either through formal strategies, budget commitments or election platforms. They include a broad range of strategies focusing on a diverse range of conditions (e.g. mental health, drug, alcohol, blood borne viruses and sexually transmissible infections), population segments (e.g. men’s health, women’s health, rural health) or health sectors (e.g. primary health care, digital health, hospital pricing). However, there is no national strategy for the health system as a whole.

Agreements between the Commonwealth and the states and territories, such as the *National Health Agreement* and *National Health Reform Agreement* reflect some agreed strategic priorities. A Heads of Agreement on public hospital funding and health reform reflects the Commonwealth’s intent for post-July 2020 arrangements. While not signed by all states, it does reflect an interest in further development of elements that support value-based health care:

- Paying for value and outcomes;
- Joint planning and funding at a local level (across primary and acute care sectors);
- Nationally cohesive health technology assessment;
- Empowering people through health literacy;
- Prevention and wellbeing; and
- Enhanced health data (COAG 2018).

3.1.3 Stakeholder support for and movement towards value

Implementing value-based health care requires unprecedented cooperation among stakeholders. Australia scored high on this measure, although this required only one or more stakeholders to exhibit support (EIU 2016a).

The Australian Health Ministers’ Advisory Council (AHMAC) is currently considering value-based health care opportunities, and individual jurisdictions are at varying stages of maturity in implementing value-based programs.

Primary Health Networks (PHNs) use a commissioning approach to guide some of their investment in regional health services, which incorporates a focus on consistent, comparable and measurable outcomes. There are also a number of value-focused projects under way across primary and acute care, and in the private and public sectors. However, there is little published evidence available yet on the impact of these projects.

The Productivity Commission noted that 'Labour costs comprise a large share of health expenditure, and so making better use of health workforce skills and competencies could lead to large efficiency gains. There is evidence that some tasks that are currently the exclusive responsibility of particular professionals could be performed just as effectively by others, without compromising patient safety or the quality of care' (PC 2015, page 45). Recognising vested professional interests and financial incentives can be an impediment to effective structural reforms in the way health services are designed, delivered and remunerated, an aligned vision and common indicators and measures of outcomes and costs are even more critical in gaining stakeholder support for and movement towards value-based health care.

Consumers, health services, commissioning bodies, employers, professional colleges and associations, education providers, regulatory bodies and government departments and agencies must all be engaged in the discussion and direction.

3.1.4 Health technology assessment

Health technology assessment (HTA) is critical in supporting sustainable use of subsidised health technologies. Australia scored high on this measure (EIU 2016a).

Australia led the world in 1993 when a favourable economic evaluation was introduced as a requirement for funding (in addition to evaluations of quality, safety and efficacy) (Jackson 2007). This is similar to the approach in the United Kingdom, but differs from most other countries where HTA processes provide advice to health care providers, rather than being a requirement for public funding. The approach selected impacts on the availability of new technologies in Australia, particularly where the evidence is promising but trials to provide the required level of evidence for a positive assessment are not feasible.

A major review of HTA in Australia resulted in the introduction of a policy framework for the Commonwealth HTA system, incorporating the Therapeutic Goods Administration, the Medical Services Advisory Committee, the Pharmaceutical Benefits Advisory Committee and the Prostheses List Advisory Committee. Each entity has discrete functions and responds to different policy needs, but with shared and consistent goals and approaches, transparency, efficiency and accountability (Commonwealth of Australia 2009).

State and territory governments, health insurers, public and private hospitals and regional health services also may have HTA capabilities and interests. Each may have a different focus, for example, creating a mechanism for approving funding for novel or state-wide specialty services outside normal funding, or focusing on different technologies at different stages of the product development cycle as part of research roles (Jackson 2007).

Interim funding processes have been considered to resolve the tension between clinician and patient demand for rapid access to promising new health technologies and the need for further evidence to resolve uncertainties about benefits and costs. These may be referred to as access with evidence development, coverage with evidence development, risk sharing, health impact guarantees, field evaluations and effectiveness guarantees (McCabe et al. 2010; Menon et al. 2010).

Challenges for Australia currently lie in incorporating real-world evidence of effectiveness and cost-effectiveness into approval decisions. It has been suggested that post-marketing surveillance mechanisms need to be strengthened, aggregating data from a broad range of sources (Commonwealth of Australia 2009). Clinical registries have been identified as an underused source

of evidence for resolving concerns about long-term safety, effectiveness and cost-effectiveness (Scott 2017).

The growth in whole-genome sequencing is another challenging area in determining cost-effective and equitable interventions. Using genetic information to enable treatments to be better targeted should ultimately result in savings. However, it comes at a significant cost and with the risk of over diagnosis (IJzerman 2019). This raises important issues of equity and sustainability in the context of Australia's universal health care system, particularly where investment in innovative technology and processes is not aligned with funding to support universal access. There would also be a benefit in applying a longer-term preventive health perspective in this area.

Mechanisms for disinvestment from low-value health technology also need consideration (McCreanor 2017), similar to the review processes currently underway for the Medicare Benefits Schedule (Australian Government Department of Health 2019).

3.1.5 Evidence-based guidelines

Australia scored mid-range on this measure (EIU 2016a). In Australia, guidelines are developed by a range of entities, including member colleges and associations representing health professions, peak bodies representing conditions or sectors in health care and consumer representative bodies.

A number of Commonwealth, state and territory government departments and agencies also produce guidelines in health care.

A review of the characteristics of guidelines developed for use in clinical practice in Australia was undertaken in 2014. Findings reflected serious and systemic problems in the way guidelines are funded, developed and prioritised in Australia (NHMRC 2014; Sansoni 2016).

3.1.5.1 Guideline development

Standards for the development of guidelines are available in Australia that require a focus on health and related outcomes, and to consider the body of evidence for each outcome and other factors that influence the process of making recommendations (NHMRC 2016). 'Other factors' identified in the standards include benefits and harms, values and preferences, resource use and acceptability.

Hierarchies of evidence are published in guidelines to rank the validity of findings from different research methods. However, these hierarchies tend to focus on the evaluation of the *effectiveness* of interventions (Evans 2002). It has been suggested that guidelines should also have evidence assessed and ranked according to the dimensions of:

- *Appropriateness*, concerning the psychosocial aspects of the intervention, addressing questions relating to the impact on a person, its acceptability and whether it would be used by the consumer; and
- *Feasibility*, encompassing the broader issues relating to implementation, cost and practice change (Evans 2002).

Australia's standards for guideline development address this through requirements to explicitly consider 'implementability' through the development process (NHMRC 2019), however associated evidence is not assessed or ranked. There is also no explicit guidance available on assessing the value of interventions for inclusion in guidelines.

3.1.5.2 *Prioritisation of guidelines*

A list of priority topics for national clinical practice guideline development was developed by the Australian Commission on Safety and Quality in Health Care (ACSQHC) in 2015, but the list is still identified as 'under consideration' by AHMAC (ACSQHC 2019a). The intent was for the list to be a reference point for jurisdictions before any guidelines are commissioned or funded, providing a coherent and targeted approach to funding guidelines across disease topics while maintaining autonomy of the jurisdictions within the health system.

Leading by example, standards and other guidance material are developed by the ACSQHC in response to findings of national variation or identified system-wide priorities (ACSQHC 2018).

3.2 *Measuring outcomes and costs*

The routine collection, sharing and analysis of outcomes and cost data and other relevant information will be enabled by an integrated health information infrastructure that allows for the easy capture, sharing and analysis of both patient and population level health information. This includes not only the hardware and software of health informatics systems, but also the standards governing such systems and the organisational capabilities to use them effectively (WEF 2017; WEF 2018). This must enable individual patients to be followed through their journey of care, including across providers.

A country's alignment with value-based care (EIU 2016a) has been established by:

- The existence of national disease (or clinical quality) registries, and the extent of disease coverage, regularity of data updates and its accessibilities to health care stakeholders
- The accessibility of patient outcomes data from the major funder and provider systems
- The standardisation and linkage of outcomes data through disease registries
- The extent to which patient cost data is collected and the ability for governments and major funders to assemble it (longitudinally)
- The development of interoperable electronic health records and health technology infrastructure.

3.2.1 *Clinical quality registries*

Australia scored mid-range on this measure (EIU 2016a). Clinical quality registries provide a mechanism for collecting and analysing data on health outcomes, and can be an important catalyst for efforts to improve those outcomes over time. They make it possible to benchmark and assess comparative performance at various levels of the system, with in-depth analysis of the causes behind variations leading to the identification and dissemination of best practices. They have been shown to be powerful platforms for improving health outcomes, lowering health care costs, and increasing health care value (Larsson et al. 2012).

In Australia, registries are established and funded through a range of mechanisms, including state or Commonwealth governments, medical specialty societies, consumer advocacy bodies, industry (private health insurers, drugs or devices manufacturers), research organisations or a consortium of these. They exist to monitor and benchmark a range of clinical quality indicators, including device safety, inappropriate treatment, mortality or significant morbidity (Ahern et al. 2018). Only a small number of these are national registries (Wilcox & McNeil 2016).

Australian clinical quality registries have been shown to deliver significant value for money when correctly implemented and sufficiently mature, with conservative benefit-to-cost ratios ranging from 2:1 to 7:1 (ACSQHC 2016a).

3.2.1.1 Prioritisation of registries

A framework for Australian clinical quality registries has been developed to facilitate efficiencies in the development of national clinical quality registry infrastructure and to promote best practice design, development, operation and security (ACSQHC 2014). It was endorsed by health ministers in 2014. A national prioritised list of clinical domains for clinical quality registries has also been published (ACSQHC 2016b), although there are arguments for further domains to be prioritised (Ahern et al. 2018).

3.2.1.2 Patient-reported measures in registries

There has been increasing use of patient-reported outcome and experience measures in registries internationally (Sparring et al. 2018; OECD 2017b). The OECD benchmarks some aspects of patient experience in 19 countries, and has announced an initiative to develop this further to include patient-reported outcome measures through a Patient Reported Indicators Survey (PaRIS). This survey will initially focus on hip and knee replacements, breast cancer care and mental health care (OECD undated). It has been reported that Australia attended the first meeting of the Working Party for the PaRIS initiative on 7 November 2018 (van den Berg 2018).

In Australia, the Palliative Care Outcomes Collaboration and Prostate Cancer Outcomes Registry both collect data on patient-reported health outcomes using standardised instruments, with summary reports returned to service providers to support benchmarking and quality improvement (AIHW 2018b).

3.2.1.3 Leveraging the benefits from registries

To achieve the clear clinical and economic benefits identified, calls have been made for a national strategic approach to clinical quality registries. Improvements in the following components have been identified as required:

- Governance, including coordination of national and state efforts and collaboration between clinical and stakeholder leadership;
- Funding, including for approval process for new registries and evaluating existing registries, models that identify multiple sustainable public and private funding sources, and support for provider participation in registries; and
- Data, including requirements for providers to contribute data to approved registries, investment in infrastructure to support data collection and considerations for public reporting (Ahern et al. 2018).

Case 2: Embedding data collection into routine clinical practice in palliative care

The Australian Palliative Care Outcomes Collaboration (PCOC) is a national palliative care outcomes and benchmarking program. It has the primary objective of systematically improving patient outcomes through:

- Feedback to individual services; and
- Service-to-service, state and territory, and national benchmarking.

Central to the PCOC program is the framework and protocol for collecting data, which includes patient reported outcome measures (PROMs). The framework is embedded into routine clinical practice; validated assessment tools are routinely completed at each assessment occasion and scores are documented or recorded at the point of care. Clinicians then have access to consistent information to plan and deliver care.

While the PCOC program was initiated in the specialist palliative care sector, it has expanded its scope to all palliative care settings. Statistically significant improvements in patient outcomes have been demonstrated over the past decade (AHSRI 2019).

Case 3: A registry for a population approach to prostate cancer outcomes

Detected early, prostate cancer 5-year survival rates are >95%. However, those who survive often experience a poor quality of life as a result of the treatment they receive.

The Prostate Cancer Outcomes Registry Australia and New Zealand (PCOR-ANZ) is a large-scale prostate cancer registry that collects information on the care provided and the outcomes for men diagnosed with prostate cancer.

Diagnosis and treatment data, including patient reported experience measures, are collected twice a year. They are used to identify population-wide trends in diagnosis and treatment practices, track survival rates and understand what effect different treatments are having on the quality of life for men (PCOR-ANZ 2019).

Case 4: Integrating patient-reported outcomes into registries with feedback to clinicians

The Australia and New Zealand Dialysis and Transplant Registry (ANZDATA) was established in 1977 to provide information on the patterns and outcomes of dialysis and kidney transplantation. Data is collected in real time through a web-based portal with the main results published annually by individual hospitals (ANZDATA 2019).

During 2019, the integration of patient-reported outcome (PRO) data into the ANZDATA registry is being trialled, with feedback to renal unit nurses and nephrologists and analysis as part of the larger ANZDATA dataset (ANZCTR 2018). In this Symptom monitoring With Feedback Trial (SWIFT), PROs are collected electronically via a tablet using the EQ-5D-5L (5 questions and visual analogue scale) and IPOS-Renal measures (11 questions). Scores are fed back to clinicians approximately one to two weeks after measurement, with alarming symptoms highlighted along with evidence-based guidelines for symptom management. The trial will test the hypothesis that symptom monitoring using the IPOS-Renal, with feedback to clinicians, improves health-related quality of life and cause-specific mortality among participants receiving haemodialysis. It will also assess the feasibility of electronic capture by patients and feedback to clinicians.

3.2.2 Availability of health outcomes data from funders and providers

Australia scored mid-range on this measure (EIU 2016a). Health outcomes data are being collected, analysed and reported in a variety of ways by different sectors and jurisdictions.

3.2.2.1 Health outcomes data

The term 'health outcome' is defined in Australia as 'a change in the health of an individual or population due wholly or partly to a preventive or clinical intervention.' (AIHW 2019a)

Health outcome measures can be direct measures, such as indicators relating to survival and standardised measures of health status and function, or measures of intermediate outcomes, such as modifications to behavioural risk factors. They can be clinical/biomedical indicators, health outcome-related performance indicators, standardised clinical assessments and patient-reported outcome measures (PROMs) (Sansoni 2016).

Health outcome-related indicators typically measure aspects of process, ideally those that are important predictors of outcomes. This may include data on the rate of avoidable adverse events, hospital acquired infection rates, time to treatment rates, return to theatre rates and unplanned readmission rates (Sansoni 2016).

The *National Health Performance Framework* provides a structure for reporting on the health system at a national level (AIHW 2017). It identifies 40 indicators grouped under domains of health status, determinants of health and health system performance. Performance against these indicators is published biennially by the Australian Institute of Health and Welfare (AIHW) in its *Australia's health* report.

The *Performance and Accountability Framework* provides a structure for local reporting on public and private hospitals and primary health organisation (AIHW 2017). It identifies 48 indicators against which health system performance can be measured, grouped under domains of equity, effectiveness and efficiency. There are 17 hospital indicators and 31 indicators for primary health care organisations. Performance against these indicators is published by the AIHW through the 'MyHospitals' and 'Healthy community indicators' webpages, respectively. Many indicators are identified as still requiring extensive methodological development to create accurate, nationally comparable information at the local level (AIHW 2017).

The ACSQHC leads further national efforts in the monitoring and reporting of safety and quality measures by health care providers. For example, it led the development of working definitions of sentinel events, hospital acquired complications and avoidable hospital readmissions (ACSQHC 2019b). This work is informing the Independent Hospital Pricing Authority's reforms for the development of funding and pricing approaches for safety and quality across these areas (IHPA 2018).

The ACSQHC also publishes the Australian Atlas of Healthcare Variation (ACSQHC 2018) which explores the extent to which health care use in Australia varies depending on where people live. Reasons for variation that may be unwarranted are investigated with specific actions recommended to reduce unwarranted variation. Options for aligning public reporting of safety and quality across public and private hospitals are also being explored (ACSQHC 2019b)

State and territory governments amplify efforts at the jurisdictional level to monitor and report on safety and quality measures for public hospitals and health services. Some private hospital providers

also

publish data on quality and safety. For example, Healthscope Hospitals publishes data for a number of indicators relating to patient care. These are reported by individual hospital, averaged across its network of 42 hospitals and benchmarked against the industry rate (Healthscope 2019).

In primary health care, PHNs are supporting general practices with clinical audit tools that allow practices to extract information from their clinical database about the health outcomes of their patient base to support quality improvement activities. However, there are inconsistent structures, data elements and use of clinical terminologies and classifications in general practice electronic health records. This makes it difficult to reliably extract patient data and link individual health data across different sectors of the health care system (Gordon et al. 2016). The recently released requirements for the Quality Improvement Incentive as part of the Practice Incentives Program (PIP) identify the patient outcomes that practices will have to measure and report to their respective PHN. Initially these include measures such as the proportion of patients with a recorded smoking status, weight classification, alcohol consumption status, the risk factors to enable cardiovascular disease assessment, vaccination or cervical screening status for specific population groups, and blood pressure and HbA1c results for patients with diabetes. It is expected that payments will eventually be associated with practices demonstrating improvements in these measures (Scholefield 2019).

Health outcomes are also being incorporated into the commissioning approach by PHNs: defining the outcomes required; commissioning or procuring services to achieve those outcomes, or incentivising the delivery of outcomes; with outcomes a strong focus in the monitoring and evaluation, and potentially also the funding (Australian Government Department of Health 2016a).

3.2.2.2 Patient-reported measures

There is increasing recognition that patient-reported indicators measure whether people benefit from health care, rather than what their care providers do (OECD 2017b). Internationally, the OECD is working to extend and deepen the benchmarking of health system performance through collecting patient-reported indicators at a disease level, sector level, health service level and whole system level (OECD 2017b).

In Australia, the AIHW submits annual and biennial data and provides data verification services, supportive evidence and advice to the OECD. This includes measures covering a range of topics, including patient experience (AIHW 2018c). The ACSQHC's work in this area includes:

- Supporting health services in the evidence-based collection and use of patient-reported outcome measures (PROMs); and
- Developing a set of non-proprietary core questions for nationally consistent measurement of patients' experiences in hospital and day stay services, the Australian Hospital Patient Experience Question Set (ACSQHC 2019b).

States and territories have led significant work in this area to drive continuous quality improvement in the hospital and health service sector. For example, in NSW, the Agency for Clinical Innovation is implementing a Patient-Reported Measures (PRMs) program across 11 proof of concept sites, with the formative evaluation identifying the necessary components for embedding PRMs sustainably in the health system (NSW ACI 2018). The Victorian Agency for Health Innovation (VAHI) implements a patient experience survey throughout Victoria's public health care agencies, with results analysed and reported to health services and the Agency each quarter for quality improvement (VAHI 2019). VAHI has also announced it is delivering a pilot PROMs approach in 2019 (VAHI 2018). In Western

Australia, the Patient Opinion website is being used as an independent feedback platform for all WA health services. The public can publish their experiences of local health services, with health service staff then able to interact with these patients through the website to help improve care (Government of Western Australia 2019).

Some private health insurers are also measuring and reporting patient experiences. For example, Medibank surveyed members and asked about nine aspects of their hospital stay, as well as their 'likelihood to recommend' and a rating of their overall stay. Results are published online, by hospital (Medibank 2019).

In primary care, the Royal Australian College of General Practitioners (RACGP) *Standards for general practices* include quality improvement indicators that practices: collect feedback from patients, carers and other relevant parties; analyse, consider and respond to feedback; and inform patients, carers and other relevant parties about how the practice has responded to feedback (RACGP 2017). Feedback must be collected:

- To address six themes of access and availability, provision of information, privacy and confidentiality, continuity of care, communication and interpersonal skills of clinical staff, communication and interpersonal skills of administrative staff;
- Through methods approved by RACGP, which may include questionnaires, focus groups and interviews, and must be collected at least once every three years or on an ongoing basis; and
- In a way that allows accurate conclusions about patients' experiences and needs and according to specified patient demographics (RACGP 2019).

The requirement is solely for practice improvement as standardised data are not collected, nor are results collated, shared or reported.

3.2.3 Data collection on patient treatment costs

Australia scored low on this measure, identified as one of only two high-income countries not currently collecting this data (EIU 2016a). Australia has a number of national collections of patient treatment cost data. While recognising it is not possible to capture all costs, there are significant limitations in using these collections for facilitating a value-based approach to health care. For example, data collected are related to episodes of care, not care across a full cycle of care. Data also typically reflect fees paid, rather than the true costs of care.

The National Hospital Cost Data Collection is an annual collection of hospital data maintained by the Independent Hospital Pricing Authority. Data includes public hospital data collected through the states and territories and private hospital data collected through the private sector. Data are collected primarily to inform the funding of public hospitals services (IHPA 2019).

The Medicare Benefits Scheme (MBS) data collection contains information on fees charged for services that qualify for a benefit under the *Health Insurance Act 1973* and for which a claim has been processed. Data are a by-product of the Department of Human Services administration of the Medicare fee-for-service payment system. The collection does not cover all patient activity (Australian Government Department of Health 2018a; AIHW 2018d).

The Pharmaceutical Benefits Scheme (PBS) data collection contains information on prescription medicines that qualify for a benefit under the *National Health Act 1953* and for which a claim has

been processed. As with the MBS data collection, data are a by-product of the administration of the subsidised prescription payment system (AIHW 2018e). Since 2012, data on prescriptions priced below the general co-payment level are also collected, and since 2016, pricing information is also collected (Australian Government Department of Health 2018b).

3.2.4 Health informatics infrastructure

Australia scored positively on this measure, although this only required a stated effort to develop interoperable health records (EIU 2016a). Like most countries, significant effort is needed in improving the quality of information, standardisation and linkage of data across information platforms in order to have the ability to track a patient's progress over time (EIU 2016a).

Health informatics systems that share common data standards and a common architecture will more easily be able to share data across databases and organisations. With standardised outcome metrics and accurate cost measures by population segment, minimum requirements for architecture have been identified as:

- Universal data taxonomy across diseases and population groups;
- Interoperability of information systems, devices or applications;
- Integration of outcomes data into the systems providers use in their daily work (i.e. a user-friendly interface for electronic medical records);
- Mechanisms to link individual patient data across multiple data bases (i.e. through a unique personal identifier); and
- Robust governance processes for data access and sharing (WEF 2017).

3.2.4.1 Data standards, sets and linkage

AIHW has responsibilities that include: developing national data standards and data sets; developing and monitoring performance indicators and targets for national agreements; conducting data collection activities; linking and analysing data; and reporting on findings. AIHW holds the major national hospitals databases, and a number of other databases including the Australian Cancer Database, the National Aged Care Data Clearinghouse and the National Death Index (AIHW 2019b; AIHW 2019c). It is currently consulting on the development of a National Primary Health Care Data Asset, which will contain data about primary health care to assist understanding of the system and a patient's journey and experiences within it (AIHW 2019d).

Datasets held externally to AIHW, but commonly linked include those held by the Australian Government (e.g. the Australian Immunisation and Childhood Immunisation Registers, the Australian Early Development Census, Medicare Benefits Schedule, the National Bowel Cancer Screening Program, the Pharmaceutical Benefits Scheme), and those held by state and territory governments (AIHW 2019e).

Australia has made significant investments to improve its data linkage capabilities over the past two decades, however there is substantial variation across the country. For example, published outputs on the use of linked administrative hospital data is dominated by Western Australia and New South Wales (Tew et al. 2017).

The Population Health Research Network (PHRN) was established in 2009 as an Australian Government collaboration. It has built nationwide data linkage infrastructure to enable existing data from around Australia to be brought together and made available for research (PHRN 2019). The integration of Commonwealth data can only be undertaken by accredited integrating authorities,

which include the AIHW, Australian Bureau of Statistics, Australian Institute of Family Studies, Department of Social Services, Queensland Government Statistician's Office and the Centre for Victorian Data Linkage (Australian Government 2019).

The Australian Government also recently appointed an interim National Data Commissioner with responsibilities for implementing a simpler data sharing and release framework, and better realising the economic and social benefits of increased data use, while maintaining public trust and confidence in the system (Australian Government Office of the National Data Commissioner 2018).

3.2.4.2 *Digital health records and interoperability*

A range of information systems are used to store patient information in hospital and health services across Australia. Even within a hospital or health service, a variety of information systems may be used by different units or departments, including electronic, online databases and paper-based systems (Allen-Graham et al. 2018).

Some, but not all, states and territories have pursued jurisdiction wide electronic medical records (EMRs) in their hospitals and health services. The complexity of such transformation projects have often been underestimated, with criticisms of design, implementation and budget overspends (Victorian Auditor-General 2013, Queensland Audit Office 2018, Government of South Australia 2018). The potential value of integrated EMR systems, however, appears undisputed.

In general practice, there are a variety of electronic health record (EHR) systems in use with inconsistent structures, data elements and terminologies. This creates challenges in transferability of data to other practices or health providers, linking data between general practice and other sectors in the system, practices being able to change EHR systems as historical data is unreliably transferred, and obtaining high quality data for population health purposes (Gordon et al. 2016). Similar challenges are faced with the EHR systems used in the provision of specialist and allied health services.

The Australian Digital Health Agency (ADHA) is currently pursuing the development of a roadmap for national health interoperability (ADHA 2019a). EMR/EHR compliance with standards will be needed to achieve interoperability and standards should focus on enabling:

- An understanding of what matters to patients; and
- Safe and quality care that deliver better health outcomes.

ADHA is also system operator for the My Health Record system, a secure online summary of an individual's health information. The system has potential to improve the quality of health care and health outcomes for many Australians. However, implementation has been challenged by operational complexities given its application in a wide variety of health care settings, and the diverse health care and privacy needs of Australians using it (the Senate Community Affairs References Committee 2018). Since early 2019, all Australian have a My Health Record unless they have opted out; 90% of Australians are currently participating (ADHA 2019b). For successful implementation, confidence in the integrity of the system for both practitioners and the public is required, along with a high degree of support for integration and support by practitioners across the health system (Commonwealth of Australia 2018).

A framework to guide the secondary use of My Health Record system data has also been published (Australian Government Department of Health 2018c). Such data could facilitate the consideration of outcomes and costs across full patient care pathways in determining value.

3.3 *Integrated and patient focused care*

Integrated and patient focused care is a core component of the value-based health care model. However, even countries making explicit moves towards value-based health care find the adoption of integrated care to be challenging due to diverse stakeholders with fragmented interests, the persistence of fee-for-service payment models and entrenched professional cultures (EIU 2016a).

Further, while traditional care delivery has focused on diagnosis, treatment, recovery and rehabilitation, a genuinely integrated, patient-focused and value-based approach will reach *upstream* to include preventive strategies and *downstream* to include long-term monitoring and management of chronic conditions. The necessary behavioural and social interventions therefore require alignment of the health sector with public health and social welfare sectors (WEF 2017). This will also require the necessary data collection infrastructure, performance frameworks and governance structures in place to capture longitudinal patient and population level information on costs and outcomes.

A country's alignment with value-based care (EIU 2016a) has been established by:

- National policy that supports organising health delivery into integrated and/or patient-focused units that can follow the patient through the cycle of a multi-step episode of care
- A national-level coordinated care program for mental health, diabetes, HIV, maternal care and older people.

3.3.1 *Integrated and patient-focused units*

Australia scored low on this measure, reflecting there is no national policy to support organising health delivery into integrated and/or patient-focused units, nor a management system that follows a patient through the entire multi-step episode of care (EIU 2016a).

Integrated, person-centred care involves the entire health care system. While any given provider may try to integrate services, such as developing care plans, communicating with other clinicians, involved allied health professionals and following up on hospital admissions, Australia's health system does not support this approach (PC 2017a). Critical initiatives identified for Australia to transition to an integrated, person-centred system of care include:

- Informed and engaged consumers, through improving health literacy, changing the passive attitudes of consumers and facilitating informed consumer choice;
- A regional approach to health care, with: health care being planned, managed and provided through collaborations between local hospital networks (LHNs), PHNs, community health services, local governments, health insurers and other regional partners; capacity (with accountability) to vary funding and collaboration models according to regional needs; and national bodies kept where there are economies of scale;
- Effective change management, including specific strategies and executive and clinical leadership and champions at all levels;

- Incentives aligned to promote integration, innovation and reduced costs of hospitalisation, including funds for LHNs to: use in collaborating with local entities to improve population health and reduce hospitalisation, reallocating funding of regional and general practice initiatives to PHNs; payment models with greater regional flexibility (and accountability); and de-funding interventions that fail efficacy or cost-effectiveness criteria;
- Public funding of health care based on quality, safety and value, not differentiating about sources of care between private and publicly owned entities or vested professional interests;
- Integrated information and communication technology (ICT), with shared electronic health records, and linked clinical and financial measures;
- Collecting and using data for coordinated care, with transparent measures of performance and research into what works best;
- Health professional education and professional development emphasising a person-centred, integrated approach, with cross-sectoral and interdisciplinary requirements (PC 2017b).

Case 5: Multi-sector and multidisciplinary approach to diabetes in Western Sydney

Western Sydney Diabetes (WSD) was established in 2013 to bring a multi-sector and multidisciplinary approach to the prevention, screening and enhanced management of diabetes, engaging decision-makers and providing a united effort to commit resources. The initiative is identified as a leading innovator in integrated care, but a model unlikely to be able to be replicated by many regions in the current system (PC 2017a).

There are five pillars to the approach being implemented:

- Building an Alliance and testing the strategy
- Primary prevention
- Secondary prevention and management
- Data for decision making
- Mobilising public support.

Interventions are agreed based on an appraisal of local and international evidence. Some target specific cohorts, others are based on an 'all of population' approach, while some are pre-existing interventions.

The success of WSD remains with its partnership approach. WSD is co-led by Western Sydney Local Health District, Western Sydney PHN, Diabetes NSW & ACT, PricewaterhouseCoopers (PwC), and until early 2018, the NSW Department of Premier and Cabinet (WSD 2018).

It has over 110 partner organisations from all levels of government, non-government organisations, universities and education institutions, the private sector, pharmaceutical industry, food companies, the health and fitness industry, pathology companies, IT industry, hospital specialists, general practices, allied health and pharmacy organisations (WSD 2017a and WSD 2018). A new partnership in 2018 with the Australian Digital Health Agency continues to improve population surveillance capability and better monitor interventions (WSD 2018).

To successfully partner, it was important to work with each partner organisation to understand their organisation, identify synergies, collaborate on projects, and share the recognition and acknowledge the shared successes (WSD 2017b).

Case 6: General practice access to patient health care information from Queensland public hospitals

Since June 2017, Queensland general practitioners have had secure access to consolidated clinical information about each patient who receives treatment or care at a Queensland Health facility, collated from more than 15 Queensland Health systems (Queensland Government 2019). With shared electronic records across sectors not currently available, this is an important enabler towards integrated care.

Through a single log-on to ‘The Viewer’, a web-based application, clinicians are provided with read-only access to key patient information such as pathology results, radiology results, medications, allergies and alerts, care plans and discharge summaries.

3.3.2 Coordinated care programs

While the terms are frequently used interchangeably, ‘coordination’ tends to refer to patient-focused or clinical interventions, while ‘integration’ focuses on organisational or managerial issues (The King’s Fund 2013).

In assessing the alignment of countries with value-based health care, the segments that were identified for requiring coordinated care programs were mental health, diabetes, HIV, maternal care and older people (EIU 2016a). Australia scored high on this measure, identified as having coordinated care services for three or more of these areas (EIU 2016a). However, while these segments provide global reference points, Australia may have its own priorities for care coordination.

The Heads of Agreement on public hospital funding and health reform for post-2020 identifies that bilateral agreements will be signed relating to coordinated care. This may include establishing elements for joint coordinated planning, collaborative commissioning of services, pooled funding and sharing patient information (COAG 2018).

Case 7: Responding to peaks in health care demand over winter through coordinated care

Jurisdictions and regions are pursuing different approaches to reducing the risk of hospital presentations and admissions. Two examples are presented below.

Northern New South Wales (NSW)

The Northern NSW Local Health District and North Coast PHN have partnered to support general practice teams to ‘lead heightened quality and intensity of care for a group of patients that clinicians think are at high risk of being unstable or very unwell or admitted to hospital during the flu season’. General practices register patients identified at risk and who consent; a winter check-in plan is developed proactively; and self-management and care coordination is facilitated. If registered patients are unexpectedly admitted to an LHD facility, general practices are notified and given the opportunity to ‘reach in’ and discuss care. Notifications of discharge is similarly provided. (NCPHN 2019).

Evaluation of the program when it was first implemented during 2017 demonstrated feasibility, acceptability and an ability to foster improved collaboration between private and public sector health providers. Meaningful measurement of the impact on admissions of future programs were identified as an ongoing area of learning (Ewald, et al 2018).

South Australia (SA)

SA Health, working with the Adelaide PHN, is planning to trial priority care centres in selected general practices in Adelaide. General practices will offer bulk-billed services for low-acuity care cases (e.g. minor sprains, cuts and wounds, suspected fractures and sporting injuries, urinary tract infections, upper respiratory tract infections, chronic conditions, mental health) in order to reduce unnecessary presentations in emergency departments during the winter months, when demand typically peaks, and improve patient experience, care and outcomes (Government of South Australia 2019, McDonald 2019).

SA Health will provide services such as:

- Transporting patients to the centre by ambulance
- Ensuring direct access to SA Health clinicians to assist with any complex case assessment and management
- Access to SA Health telehealth facilities and any relevant eHealth systems
- Advanced nursing support for on-site care coordination
- Potential access to cheaper consumables
- Cobranding with an SA Health hospital
- A communication strategy to inform the public about accessing services

Funding of appropriate growth and expansion costs (Government of South Australia 2019).

3.4 Outcome-based payment approach

Payment and financing approaches can be an enabler or obstacle to value-based health care.

Each payment system (e.g. fee-for-service, salaries, capitation, pay for performance, activity-based funding, social impact bonds) brings its own set of desired and perverse incentives. Consideration is needed at multiple levels of payment, from Commonwealth to states/territories through to payments made to individual service providers. Different approaches are likely to be required to fit the needs of different populations, for different conditions and for different types of care. Particular consideration is needed when financial incentives between sectors are not aligned (Fitzgerald 2015).

Financing encompasses more than the payment system, also reflecting the flows of capital that support service structures. While debate often centres on payment systems, consideration also needs to be given to balancing financial risk, outcomes, performance and responsibility. For example, while financial accountability of public hospitals is visible through public reporting by state and federal auditing agencies, this is not the case for private-owned primary health care providers (Fitzgerald 2015).

A country's alignment with value-based health care (EIU 2016a) has been established by:

- Bundled payments being promoted by major system funders
- The existence of mechanisms for disinvestment (de-adoption) in health care interventions.

3.4.1 Bundled payments

Australia scored mid-range on this measure, identified as having national or regional initiatives to develop a bundled payment system (EIU 2016a), although there has been limited progress in the implementation of these initiatives since this 2016 assessment.

Bundled pricing is where ‘a single price is determined to cover a full package of care over a defined period of time, spanning multiple events and settings of care. The intention is for resources and funding to be easier for hospitals to manage, to allow financial flexibility to encourage improved models of care or greater standardisation of evidence-based care, and drive better service delivery in the long run which should lead to better patient outcomes and lower costs’ (IHPA 2017).

In 2015, the Independent Hospital Pricing Authority (IHPA) identified intent to investigate bundled pricing approaches for public hospital services (IHPA 2015), with maternity care the first model to be developed. Following consideration of a variety of issues by an advisory group and stakeholder consultation, significant barriers to implementing such a model were identified that precluded implementation at the time, the most significant being the absence of unique patient identifiers in IHPA’s national data collections (IHPA 2017). The investigation also did not include care provided outside the public hospital sector (e.g. in general practice).

In primary care, fee-for-service is the dominant payment system. While discussions around financing typically revolve around different payment systems, it has been identified that there needs to be a focus on how to link objectives to outcomes through different financing approaches. There should also be focus on reducing financial risk, relieving duplication, and centralising core services and operating liabilities (Fitzgerald 2015).

Case 8: Bundled payments in general practice – the Health Care Homes staged rollout

The patient-centred medical home is a model of care that has been embraced internationally.

In Australia, the Health Care Homes model was originally proposed in 2015 by the Commonwealth Government appointed, clinician-led Primary Health Care Advisory Group as a means to reduce fragmented care and prevent hospitalisations, particularly among those with chronic and complex health needs. In this model, it is a general practice or Aboriginal Community Controlled Health Service that coordinates care for these patients. A trial of the model commenced late 2017 and as at November 2018, there were 165 practices participating (Australian Government Department of Health 2018d). Key features of the Health Care Homes model being trialled are (Australian Government Department of Health 2016b, 2016c):

- There are three tiers of complexity and need identified for eligible patients, from those with multiple chronic conditions but are largely self-managing, through to those with high risk chronic and complex needs requiring a high level of clinical coordinated care.
- A monthly bundled payment is provided to the practice. This only relates to the chronic condition being treated with other unrelated episodes of care still able to be charged on a fee-for-service basis.

While evaluation of the trial is not due to be completed until late 2019, criticisms of the implementation have been expressed (McInerney 2018, Biggs 2018).

Preliminary lessons reported reflect the importance of not seeing payment mechanisms in isolation of other factors that influence improving outcomes and value. These includes recognition that:

- Practice transformation takes time;
- Engaged leadership is needed;
- Patients need time to understand the new model in the process of recruiting patients;
- Performance indicators for accountability are needed (including patient reported measures), with quality data collected; and

Flexibility is needed for practices to implement a model that is ‘fit for purpose’ (McInerney 2018).

3.4.2 Disinvestment

Australia scored positively on this measure, having a mechanism for identifying less effective interventions for de-adoption (disinvestment) in treatment plans (EIU 2016a). Activities include:

- The Choosing Wisely and Evolve campaigns that promote public awareness of low-value care
- The current MBS review that is examining the value of more than 5,000 MBS items
- Initiatives of the ACSQHC to develop standards, guidelines and indicators for safety and quality in Australian health care.

However, more active steps are needed to promote successful and sustained disinvestment in low-value care and encourage use of high-value care (McCreanor 2017).

Case 9: A system approach to value in mental health care

In 2001, the Australian Government introduced the *Better Outcomes in Mental Health Care* program to address the imbalance in care between medication-based and psychological treatment options for anxiety and depression. Features of the program included regional implementation, multidisciplinary care, practitioner education and funding linked to completed episodes of care. However, with a capped and limited budget (around \$30 million per year), access to care was still a problem.

In 2006, the program was replaced with the Better Access to Mental Health Care initiative, introducing new Medicare Benefits Schedule (MBS) items to improve access to psychiatrists, psychologists and general practitioners. However:

- With an uncapped budget, demand drove expenditure to \$820 million in 2016-17 (DHS 2019). This doesn't include the out-of-pocket costs also commonly charged to patients (Australian Government Department of Health 2018e).
- There is no incentive for outcomes, for example: the fee-for-service funding is not linked to completed episodes of care; GPs are not incentivised to review outcomes of care; and brief interventions, group sessions, more expert or multidisciplinary care; or prolonged care are not incentivised according to evidence for the breadth of disorders being managed (Rosenberg & Hickie 2019).
- Research has shown key service gaps and sociodemographic challenges, particularly those in regional and rural areas, have not been addressed (Meadows et al. 2015).

A shift is needed away from fee-for-service models towards value-based approaches that focus on achieving a range of health, social and functional outcomes (Rosenberg & Hickie 2019).

4 International approaches to value-based health care

Progressing the improvement of value in health care has become a focus for health leaders around the world. International comparisons can provide an opportunity to reflect on and evaluate Australian performance and provide empirical bases to support the implementation of value-based health care. They can exert major influence on public policy and reform (Papanicolas & Jha 2017).

However, international comparisons must be accompanied by a strong understanding of the reasons for difference. These comparisons are complicated by the:

- Different philosophies underpinning health care systems, with different health systems optimised for different conditions and populations and with patients with different expectations regarding performance
- Boundaries defined for the health system in different health systems
- Limitations of data, which may be unavailable or inconsistently collected
- Range of different health insurance and payment schemes, including the extent to which universal health care is supported and the balance of public versus private funding and service delivery (EIU 2015; Papanicolas & Jha 2017).

The body of literature and case studies around value-based health care internationally is developing. Appendix 2 provides further information about the approach different countries are taking in pursuing value-based health care and the context in which they are doing so. However, there is a need to invest in the development of evidence to reflect the policy objectives and context of the Australian health system.

5 Recommendations for Australia

Drawing on the assessment of alignment of Australia's health system with a value-based approach, and considering international experience, key recommendations for enabling value-based health care through public policy in Australia are:

5.1 *A national, cross-sector strategy for value-based health care in Australia*

Sustained cultural change is needed at all levels and across all sectors to enable value-based health care. This requires: aligned vision and action; incremental changes made within a comprehensive transformation strategy; distributed leadership being fostered; staff engagement being promoted; collaborative relationships being created; and the continual assessment and learning from change (Willis et al. 2016).

Unprecedented cooperation among all stakeholders is required. Discussion is needed to consider how value is defined for the Australian health system to include societal value. Legal, regulatory, financial and non-financial incentives are needed to encourage greater cooperation. As such, public policy has a critical role (WEF 2018).

National policy is needed that supports health care being integrated and organised around patients. Regional approaches to health care must be facilitated through collaboration between local hospital networks, PHNs, community health services, local governments, health insurers and other regional partners. Models of funding and collaboration must also be flexible to respond to regional needs. Transparent measures of performance and sharing of research into what works best must facilitate accountability.

A development that may enable progress to be made in progressing value-based health care in Australia is the Council of Australian Governments (COAG) Heads of Agreement made in February 2018 (COAG 2018). This agreement calls for, among other things, 'new long-term system wide reforms for ... Paying for value and outcomes' (COAG 2018). While the specific details of the scope of this reform intention are not yet clear, this does signal an awareness by governments of a need to reorient the health system in a way that would be consistent with the manner in which value-based health care is discussed in this paper. Notably, two jurisdictions –

Victoria and Queensland – have not signed the agreement, though this is likely due to separate political and funding considerations unrelated to the specifics of the reform agenda. These jurisdictions both have active programs to support value-based health care. If a national approach cannot be agreed, it should be feasible for the Commonwealth to work with only some jurisdictions.

5.2 Access to relevant and up-to-date data

Patient outcome and experience measures: Benchmarking of health system performance requires consistent collection, use and reporting of patient-reported indicators at a disease level, sector level, health service level and whole system level.

Standards for collection should be consistent regardless of sector, or whether a public or private entity, to allow data throughout a patient's full cycle of care and progress over time to be monitored.

Clinical quality registries: Continued and coordinated pursuit of national clinical quality registries is needed as: a mechanism for collecting and analysing data on health outcomes; for benchmarking and assessing comparative performance at various levels of the system; for in-depth analyses of variation; and the identification and dissemination of best practices.

Data must capture patient-reported outcomes, with collection embedded in routine clinical practice. Feedback to clinicians must be appropriate and timely to support patient care.

The use of clinical quality registries must also be embedded in strategies to inform post-marketing surveillance and disinvestment decisions.

Treatment costs: Action is required to collect data on the costs of care across full cycles of care, noting that this may span multiple providers, sectors and jurisdictions. Opportunities to explore the bundling of funding should be encouraged.

Health informatics infrastructure: A health informatics infrastructure that enables all stakeholders in health to pursue value is needed. Significant effort is needed to improve the quality of information, and standardisation and linkage of data across information platforms to have the ability to track a patient's progress over time. Relevant outcome information should be available to health care providers in a timely manner to improve their care, at both a patient and process level.

Nationally agreed and implemented standards for electronic health records are needed. They should be designed to understand patient experiences and outcomes and embedded in clinical workflow. They must support interoperability and be technology-neutral.

International benchmarking: Participation in international benchmarking through the adoption and reporting of validated, standardised, internationally-comparable indicators will provide policy makers with information to evaluate Australia's relative performance in delivering outcomes-focused and value-based health care. Support for Australian participation in international programs such as the development of the ICHOM Standard Sets and the development of OECD PaRIS indicators should be prioritised.

5.3 Evidence for value-based health care in the Australian context

There is a need to invest in the development of value-based health care evidence in the Australian context. This should include publication of case studies and evaluations, development of evidence briefs and peer-reviewed literature. A curated collection of evidence is required to promote diffusion of best practice.

A strategic approach and funding for 'proof of concept' programs is needed, with learnings shared in a timely manner, to embed value for Australians and the Australian system. While there is some investment already under way in various parts of the health system, support for value-based care trials through research funding mechanisms such as the Medical Research Future Fund, Australian Research Council and NHMRC should be encouraged.

Value-based payment approaches that reflect a whole-of-system perspective are needed, with explicit consideration of financial risk, outcomes, accountability and responsibility. Developing financial models, and implementing and evaluating these, will be critical to developing an evidence base to facilitate system transformation at scale.

5.4 Health workforce strategies supporting models of care that embrace a value-based approach

A national workforce strategy is needed that pursues outcomes-focused and value-based changes in scopes of practice and models of care to meet public need. Entrenched professional practices and vested financial interests should not be permitted to be an impediment to system reform.

This will require coordination of:

- education, regulation and funding, at the Commonwealth, state, territory and regional service levels,
- the registered, self-registered and unregulated workforce
- cross-sector health service environments (AHHA 2017).

It will also require modelling for future workforce requirements, taking into account not only change in demographics and burden of disease, but also modelling the impact of technological change on the type of services that will be provided in the future, and the skill sets required to provide those services.

5.5 Funding systems that incentivise the delivery of value based health care

Funding models being used in value-based health care include combinations of activity-, block- and performance related funding measures. A mixed funding formula incorporating these measures is likely to be required in order to adequately compensate for activity, to protect equity (particularly in rural and regional areas and for vulnerable population groups) and to reward and incentivise agreed outcomes (AHHA 2017).

With responsibilities for health care divided between the Commonwealth and the states and territories, the pooling of funds at the regional level would facilitate consideration of funding through a patient's full cycle of care and across care sectors. Bundled care mechanisms require

further investigation, including opportunities to address the high out-of-pocket costs experienced by many Australians with significant health issues (e.g. see Dawda 2015).

Evaluation of commissioning models being deployed in PHNs should be prioritised, and learnings from social investment projects may also be relevant to the development of new funding models (e.g. see Fitzgerald 2015).

Appendix 1: Assessment of the enabling environment for value-based health care in Australia

In 2016, a global assessment of 25 countries was undertaken to gain an understanding of how they aligned with a value-based approach to health care (EIU 2016a). Countries were classified into four categories (Low, Moderate, High or Very High) based on an assessment against 17 indicators, and then grouped according to their progress towards adopting value-based health care. The results as assessed for Australia are as follows:

Indicator	Rating	Rating Range
1. Enabling context, policy and institutions for value in health care		
• Health coverage of the population	4	0 – 4
• High-level policy or plan	No	Yes/No
• Presence of enabling elements for value-based health care	2	0 – 3
• Other stakeholder support	Yes	Yes/No
• Health professional education and training in VBH	1	0 – 2
• Existence and independence of health technology assessment (HTA) organisation(s)	2	0 – 2
• Evidence-based guidelines for health care	2	0 – 4
• Support for addressing knowledge gaps	1	0 – 2
2. Measuring outcomes and costs		
• National disease registries	2	0 – 4
• Patient outcomes data accessibility	1	0 – 2
• Patient outcomes data standardisation	1	0 – 2
• Data collection on patient treatment costs	1	0 – 3
• Development of interoperable Electronic Health Records (EHRs)	Yes	Yes/No
3. Integrated and patient-focused care		
• National policy that supports organising health delivery into integrated and/or patient-focused units	No	Yes/No
• Care pathway focus	2	0 – 2
4. Outcome-based payment approach		
• Major system payers(s) promotes bundled payments	2	0 – 2
• Existence of mechanism(s) for identifying interventions for disinvestment)	Yes	Yes/No

*Indicators were qualitative measures. Scoring guidelines were used to standardise assignment of binary scores of yes/no, or numbered scores of 0-2, 0-3 or 0-4, where 0 reflected an absence of the indicator and varying descriptors were used to reflect an increasing presence of the indicator.

Appendix 2: International approaches to value-based health care

The United States

Features of the health system

Health coverage in the US is fragmented. Public health insurance schemes cover various, often overlapping, populations and include:

- Medicare, a federal program for adults aged 65 years and over and some people with disabilities. The program offers patients a choice to receive health care on a fee-for-service basis or through an arrangement with a private insurer for a network-based plan. Medicare also provides stabilisation care for any patient presenting to a hospital that accepts Medicare funds in an emergency.
- Medicaid and the Children's Health Insurance Program, administered through federal-state partnerships for certain low-income populations (The Commonwealth Fund 2019).

Private voluntary health insurance schemes may be employer-provided or personally-acquired. Federal legislation specifies the services that must be covered in ten essential health benefit categories, with states determining the range and extent of specific services to be covered in each category (The Commonwealth Fund 2019).

Examples of the system's approach to value-based health care

The United States (US) has the highest annual per capita health expenditure in the world (OECD 2017a). A range of cost control measures have been attempted, which has led to a slowing in spending and there is currently a strong focus within both public and private health insurance schemes on value-based approaches to health care.

Given the fragmentation in health coverage, consistent and comparable measurement across the US is challenging. There are variations in definitions and methodological approaches to classify and report data. Each insurance plan and state is dealing with a unique set of market dynamics related to supply and demand, urban and rural and environments, and readiness of providers to adopt value-based approaches. As such, direct comparisons, between plans or within states, are inappropriate (HCP-LAN 2017), as would be direct comparisons with Australia.

However, individual initiatives can be a valuable source of guidance.

The US Department of Health and Human Services has implemented strategies focused on improving patient outcomes that include:

- Increased public reporting of provider performance data to both increase transparency and improve quality, e.g. the Hospital Compare initiative that reports on measures of care processes, care outcomes and patient experience at more than 4,000 hospitals. States have also developed public reporting systems and measures, e.g. that address ambulatory care.
- Incentives for achieving certain measures, e.g. reducing avoidable hospital readmissions and hospital-acquired conditions.
- Setting goals to tie most Medicare payments to quality or value, e.g. in Hospital Value Based Purchasing programs (The Commonwealth Fund 2019).

The Department will be implementing new payment models for primary care in 2020 through the Centers for Medicare and Medicaid Services (CMS), building on the Comprehensive Primary Care models that were first implemented in 2012. The new Primary Care First payment models are focused on individual primary care practice sites. The model fosters practitioner independence, with practices having increased flexibility and freedom to innovate in their care delivery approach based on their unique patient population. Practices assume some financial risk in exchange for reduced administrative burden and performance-based payments (CMS 2019a). The new Direct Contracting payment model creates opportunities for a range of organisations to participate in testing risk-sharing arrangements for value and quality. Capitated and partially capitated population-based payments are offered, with responsibility assumed for eligible patients in a target geographic region (CMS 2019b).

Strategies to promote system integration and care coordination are being implemented through both government agencies and private health insurers, including through:

- Patient-centred medical home models
- The establishment of Accountable Care Organisations, networks of providers that assume contractual responsibility for providing a defined population with care that meets quality targets
- Payment incentives that reward higher-quality, more efficient care, including bundled payments
- Local programs that better integrate health and social services, including innovative financing models such as cross-sectoral shared-savings models (The Commonwealth Fund 2019).

Kaiser Permanente, for example, is an integrated managed care consortium and a leader in implementing value-based health care in the US. Enablers they identify for delivering integrated care include:

- A national structure made up of three distinct but interdependent groups of entities: the health plan and regional operating subsidiaries, the non-profit hospitals and the regional for-profit medical groups.
- Stratification of the population and supply of different types of services according to needs. The emphasis is prevention, self-management support, disease management and case management for members with multiple conditions. Consistent governance and decision-making frameworks are applied across services, while allowing for flexibility and innovation to maximise the patient experience. Workflows and systems are not rigid, allowing responsiveness at a local level to case-mix and health professional capabilities.
- Vertical integration of care pathways being the provider, owner and operator of a large number of clinics, hospitals, laboratories and pharmacies. Care pathways are developed by multidisciplinary teams, with each team member focused not only on the treatment they are providing but also on the entire care pathway. Clinical governance strategies and a continuous focus on improvement allows the model to be sustained and evolve over time. For any services that are not owned, contracts are negotiated that are informed by the outcomes and costs that have been monitored.

- Being the payor, making sure the right incentives are in place to help ensure that all team members work together. Typically, capitation payments are paid to providers, who then pay physicians a salary supplemented by small incentives that reward outcomes and patient experiences.
- Overcoming information asymmetry and fragmentation between providers through an extensive information network. While not sufficient on its own, it is recognised as a critical enabler for gathering and sharing information, tracking outcomes and systematically identifying innovations that improve patient care (McKinsey 2009; WHO 2016).

Denmark

Features of the health system

Denmark provides universal access to health care, with 84% of expenditure publicly financed and 16% financed primarily through patient co-payments (Ministry of Health 2017).

The overall framework for the provision of health and aged care is established nationally. It includes the tasks and responsibilities assigned to the five regions and 98 municipalities, with annual financial agreements:

- The regions are responsible for hospital care, including emergency care, psychiatry, and for health services provided by GPs and specialists in private practice. At the regional level this is financed from a block grant from the government (reflecting such things as demography and social structure), an activity-based subsidy from the government and co-financing from the municipalities.
- The municipalities are responsible for disease prevention and health promotion, rehabilitation outside hospital, home nursing, school health services, child dental treatment, child nursing, physiotherapy, alcohol and drug abuse treatment, home care services, nursing homes and other services for elderly people. At the municipal level this is financed from a block grant from the government and the collection of council taxes (Ministry of Health 2017).

For primary care, citizens may choose to register with a specific GP who is part of the public health care system. More than 99% of citizens choose this and receive free medical assistance from the GP and free specialist care on referral. Certain specialists do not require referral, e.g. ophthalmologists, otologists and dentists. Citizens who do not choose to register with a specific GP can receive care from any GP, but services may be subject to a co-payment. Allied health services may also be accessed, e.g. physiotherapists and psychologists, but are typically subject to co-payments. All children under the age of 18 years may receive free preventive dental care (Ministry of Health 2017).

Emergency calls are assessed by health professionals who determine if ambulance services and pre-hospital care is needed. Paramedics, medical doctors or specialised nurses may be dispatched by car to help at the scene together with the ambulance service (Ministry of Health 2017).

Examples of a systems approach to value-based health care

The Danish health system approach to value-based health care is facilitated by extensive digitisation, including:

- A data network for secure electronic communication between all health care providers, with 98%

of GPs exchanging records electronically, 99% of prescriptions sent electronically to pharmacies and 97% of referrals to hospital and all to specialists made electronically;

- Systematic use of data by public hospitals and GPs, with infrastructure for linking data across registers and databases that can be used for large-scale and longitudinal monitoring and analysis for service improvement and research;
- A national infrastructure for telemedicine, including standards and reference architectures spanning the entire system; and
- Digitised working procedures (Ministry of Health 2017).

A number of initiatives to support a value-based approach to health care have been implemented by the Ministry of Health, e.g.:

- A national survey of patient experience is conducted annually on behalf of the five regions, comparing differences and providing input to quality improvements;
- A webpage has been established that provides comprehensive information about the clinical and organisational quality of health care services and studies of patient experience to enable patients to make an informed choice of hospital; and
- National initiatives to support the use of patient reported outcomes in daily clinical practice and in quality development, with a commitment to nationwide use in three disease areas (prostate cancer, breast cancer and epilepsy) in 2019 (Ministry of Health 2017).

Sweden

Features of the health system

In Sweden, three levels of government are involved in the health care system. Overall health and health care policy is a national responsibility, 12 county councils and nine regional bodies are responsible for the financing and delivery of health care services, and 290 municipalities are responsible for aged and disability care (The Commonwealth Fund 2019).

The county councils and municipalities finance the majority of publicly financed health care spending (83% and 25%, respectively, in 2014) from income taxes levied, with national government grants designed to redistribute resources among municipalities and county councils based on need (The Commonwealth Fund 2019).

Public health care coverage is universal and automatic. However, benefits are defined by the county councils and municipalities and so vary throughout the country. Providers cannot charge above the scheduled fee. Patient co-payments vary, but out-of-pocket payments are capped (The Commonwealth Fund 2019).

Benefits cover public health and preventive services, primary care, inpatient and outpatient specialist care, emergency care, inpatient and outpatient prescription medicines, mental health care, rehabilitation services, disability support, patient transport support services, home care and long-term care (including nursing home and hospice care), dental care and optometry for children and young people, and limited subsidies for adult dental care (The Commonwealth Fund 2019).

Primary care accounts for approximately 20% of spending, provided through team-based care but without a formal gatekeeping function by general practitioners. There is competition among

providers to register patients, but with prices set, they cannot compete on price (The Commonwealth Fund 2019).

Private health insurance is a supplementary form of coverage held by approximately 10% of employed individuals in Sweden. It accounts for less than 1% of health care spending. It is associated with occupational health services and typically used to support faster access to ambulatory care specialists and elective treatments (The Commonwealth Fund 2019).

Examples of the system's approach to value-based health care

Sweden has been identified as a global leader in implementing value-based health care, with key enablers including its highly developed system of disease registries, outcome-based reimbursement for some specialised care, and a decentralised health system to encourage experimentation at the local level (EIU 2019).

Sweden's disease registries are identified as one of its strengths in implementing value-based health care, creating a foundation for the collection of data and a basis for clinicians to measure health outcomes. Over 100 registries exist, funded by central and regional governments. Data is collected against structural, process and outcome indicators. 75% of registers collect some patient-reported outcome measures (OECD 2013). Population coverage is high, with approximately 60% of registers covering more than 80% of their target population (Emilsson et al. 2015). Registries are used for both continuous improvement and evaluation of health care delivery.

In 2009, Sweden introduced a bundled payment system linked to the disease registry for hip replacements and spinal surgery, known as OrthoChoice. The bundle includes all provider costs (including physician services) for a defined set of components identified as best practice in joint replacement care. Introduced for relatively healthy patients (low risk without comorbidities), the bundle included pre-operative visit, the surgery (including prosthesis), x-ray following surgery, inpatient rehabilitation, a follow up visit at three months following the operation, and a care warranty for common complications within two years of surgery (Sutherland and Hellsten 2015). A small proportion of the bundled payment are paid retroactively if the provider meets agreed outcome goals (Clawson et al. 2014). Early reported outcomes of the system included an increase in the volume of joint replacement operations, virtually eliminating the previously long waiting list, and a drop in total costs (Sutherland & Hellsten 2015). Patient outcomes improved, with complication rates falling and patient satisfaction improving. Functional outcomes were maintained (Clawson, et al 2014). Based on these results, more advanced bundles are being introduced, e.g. covering payments that are risk- and outcome-adjusted (Pross et al. 2017), and increasing the outcomes-contingent payment to 10% (Clawson et al. 2014).

More recently, attention has turned to primary care. Primary Care Quality is a single quality improvement system spanning all health providers (such as doctors, nurses, allied health professionals). There is a single set of national quality indicators, created to provide meaningful information about patient care and funded as a national quality registry. Data is collected automatically based on existing stored data from electronic medical records. National analysis is reported back to providers to support continuing improvement (Sveriges Kommuner och Landsting undated; EIU 2019)

The Netherlands

Features of the health system

In the Netherlands, the national government has overall responsibility for health care (priorities, legislation, access, quality and cost).

All residents are required to purchase statutory health insurance from private insurers. This insurance is financed through the Health Insurance Act, through a nationally-defined, income-related contribution or a government grant for those aged under 18. Community-rated premiums are set by each insurer, but collected centrally and issued to insurers based on a risk-adjusted capitation formula (The Commonwealth Fund 2019).

Insurers are required to accept all applicants. The statutory benefits package is defined by the government every three years, covering care by general practitioners, hospitals, specialists, dental care and physiotherapy through to 18 years of age, prescription medicines, home nursing care, basic ambulatory mental health care for mild-to-moderate disorders, and specialist outpatient and inpatient mental health care for complicated and severe mental disorders (The Commonwealth Fund 2019).

Most residents (84%) also purchase a mixture of complementary voluntary insurance covering dental care, optical, contraceptives, physiotherapy, alternative medicine and the full cost of co-payments for medicines. It does not provide faster access to any type of care or increased choice in relation to hospitals or specialists. Voluntary insurance premiums, eligibility criteria and benefits are not regulated (The Commonwealth Fund 2019).

Insurers are expected to engage in strategic purchasing, with providers competing on both quality and cost for contracts (The Commonwealth Fund 2019).

Examples of the system's approach to value-based health care

Santeon, a network of seven teaching hospitals accounting for 11% of the nation's hospital care volume, is recognised as a pioneer in value-based health care in the Netherlands. The network started implementing a structured approach to value-based health care among five patient groups in 2016: breast cancer, prostate cancer, lung cancer, cerebrovascular accidents and hip arthrosis. Implementation involved a staged approach:

- Using a multidisciplinary team to define the right metrics to improve outcomes (the ICHOM indicator sets are used as much as possible);
- Initiating standardised improvement cycles, in a strict and simultaneous cadence for teams across hospitals, sharing data and best practice internally in a safe learning environment;
- Validating and stabilising the process and data, sharing results externally after three improvement cycles to inspire others and accelerate improvements; and
- Engaging with patients and payers to move towards value-based contracting (BCG 2018).

The breast cancer group were the first to complete three improvement cycles, and are now sharing their results externally. Significant improvements have been reported (BCG 2018).

Santeon identifies success as being based on three factors: a shared ambition and long-term commitment; establishment of a value-based health care model; and establishment of the right infrastructure and governance to promote the value-based health care model. Patients are placed at the core of decision-making, with one or two patient members on every team (BCG 2018).

Diabeter, a Dutch clinic network established in 2006, is recognised as a pioneer in value-based diabetes care. The clinic's percentage of children reaching the HbA1c target is 56%, compared to the average Dutch patient outside Diabeter of 31%. This has also led to a lower patient hospitalisation rate compared with other Dutch paediatric diabetes clinics (3% versus 8%) (Diabeter 2017).

United Kingdom

Features of the health system

The United Kingdom provides universal access to health care through the National Health Service (NHS), with 79.5% of expenditure publicly financed and 14.8% financed through patient co-payments (largely for medical goods including pharmaceuticals, and long-term services including residential care). Co-payment exclusions exist, including for children, people on low incomes, pregnant women and people with cancer, disability services and certain other long-term conditions. Transportation costs may also be covered for people on low incomes. An estimated 10.5% of the population also have private voluntary health insurance, offering more rapid and convenient access to care, especially for elective procedures (The Commonwealth Fund 2019).

Health care is provided through 209 local Clinical Commissioning Groups (CCGs) responsible for both efficiency and health goals. The scope of care is not defined in statute or by legislation, with the volume and scope of services determined through local decision-making. In practice, the NHS funds: preventive services (including screening and vaccination programs); inpatient and outpatient hospital care; physician services; inpatient and outpatient drugs; clinically necessary dental care; some optical care; mental health care; palliative care; some long-term care; rehabilitation and home visits by community-based nurses. The NHS Constitution states patients have a right to treatments approved in technology appraisals undertaken by the National Institute of Health and Clinical Excellence (NICE) if recommended by their clinician (The Commonwealth Fund 2019).

Primary care is primarily delivered through general practitioners who act as gatekeepers for secondary care. People are required to register with a local practice of their choice. Most GPs are private contractors (66%) with payment negotiated as a mixture of capitation to cover essential services (approximately 60% of income), optional fee-for-service payments for additional services (approximately 15% of income) and an optional performance-related scheme (approximately 10% of income). General practice is undergoing a structural change, moving to networked practices and larger multi-practice organisations employing multidisciplinary teams (The Commonwealth Fund 2019).

Public hospitals contract with CCGs to provide services, reimbursed at nationally determined diagnosis-related group rates. For outpatient specialist care, nearly all specialists are salaried employees of NHS hospitals and CCGs pay for consultations at nationally determined rates. Specialists are also free to engage in private practice (The Commonwealth Fund 2019).

Examples of the system's approach to value-based health care

The UK was assessed by the Economist Intelligence Unit as having high alignment with a value-based approach to health care (EIU 2016a). However, a concern that the NHS has expressed is that considering value only at the patient level was insufficient in a universal health system due to commitments to provide care for the entire population, and to do so within a finite budget (EIU 2016b). Instead of using value at the level of the patient as a frame of reference, the NHS has defined value at three levels: at the level of patient (personalised value), intervention (technical value) and population (allocative value). This 'triple value' approach, with two components relating

to the population and one to the individual, has become a keystone in the NHS (NHS England 2017).

The NHS articulated a national plan for securing value through their Right Care program, developed in 2009. Its focus was to identify and address variation, including Atlases of Variation and Commissioning for Value packs (EIU 2016b). Earlier, however, in 2004, NHS was pursuing value through general practice with the introduction of a Quality and Outcomes Framework (QOF) as part of contracts with general practices. The QOF rewards practices for the provision of 'quality care' and helps to fund further improvements in the delivery of clinical care. It is one of the biggest pay-for-performance schemes in the world and has had a clear impact on how general practice is organised and delivered, including the standardisation of long-term condition care, use of clinical IT systems and a diversification of practice teams. A recent review recognised pay-for-performance as good at driving some types of improvement, but also acknowledged potential pitfalls. It recognised that the process of designing metrics can unintentionally narrow the focus of the scheme and overlook harder to measure activity (for example, the provision of person-centred care). It can also undermine the leadership of clinicians in improving quality (NHS 2018). The Framework continues to evolve to reflect findings from the evaluations.

Despite such activity, it has been reported that value-based health care has not yet been embraced by the NHS in the way that evidence-based health care has. It has been proposed that an agreed definition is still required that is succinct and takes into account that 'resource use' in the NHS incorporates both the application and the allocation of resources to achieve health outcomes. An assessment of the barriers to effective development and implementation, and strategies to overcome them, is also recommended (Hurst et al. 2019).

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