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1 Key messages

- Commonwealth and state governments should re-orient the current fee-for-service public dental funding model to a blended funding model with risk-adjusted capitation base and outcome-based components. This should be enabled and optimised within the current funding arrangements to achieve the right balance between health equity and economic costs.
- Funding reforms will need to consider blending different incentives that maximise value for money in public investments and achieve better outcomes for patients, funders and health care system. These incentives should consider:
 - improving value for money by assessing the value of health care investments and measuring if the benefits of spending exceed the costs;
 - reducing unwarranted variation including disinvesting and limiting low-value services that does not improve health outcomes;
 - improving safety and quality outcomes and linking these outcomes to payments incentives;
 - improving oral health outcomes and enabling the development of a nationally consistent and standardised outcomes metrics and framework;
 - improving the focus on prevention at an individual and population level to achieve a more cost-effective way of delivering public dental services;
 - enabling all members of the dental workforce to work to their top scope of practice including allowing the use of appropriate workforce skill-mix that builds the capacity of public dental services to effectively respond to pricing signals.
- The blended funding model should be developed with consideration to:
 - specific elements in designing the capitation and value-based health outcome payment components and amount;
 - risk-adjusted modelling to determine pricing and funding for outcomes;
 - high cost items that has a component for laboratory fees (items such as dental prostheses), including tying specific patient outcome measures to funding allocations that does not incentivise over servicing;
 - the creation of a national policy authorising environment that can enable a blended public dental finding model to be implemented; and
 - a nationally standardised and coordinated approach to the collection and use of clinical, service, and patient reported experience and outcome measures across the whole public dental health system.
- Successful implementation of the blended funding model requires the:
 - development of public dental outcome metrics
 - embedding outcomes within performance frameworks
 - publication of outcome measures
 - benchmarking of waiting list times
 - standardisation of performance reporting

2 Executive summary

This Issues Brief focusses on funding reforms for public dental health services that will be required to achieve value-based health care in Australia. Using Dental Health Service Victoria's (DHSV) learnings from a value-based health care implementation and funding model reform, this brief draws on local and international examples that provides the rationale and evidence for funding reforms that maximise value and outcomes for patients, government and the health system.

In Australia, there exists a persistent tension between the equity goal of assuring universal access to oral health care and the efficiency goal of assuring prudent use of health resources to achieve the best outcomes that offer the best value for money for the patient, funder and health system.

While efficiency involves the allocation of available resource inputs in a way that provides the best outcomes for the community, health inequalities will exacerbate if the current funding strategy continues to solely focus on volume-based treatment to more people.

Past Commonwealth funding reforms have assisted in shortening the public dental waitlist to an extent. However, they have had no benefit in improving oral health outcomes of the population. Rather there has been significant growth in oral health expenditure that far exceeds the Commonwealth budget for oral health service delivery.

Re-orienting the current fee-for-service public dental funding model to support outcomes and value within the available Commonwealth resources and current funding arrangements between the Commonwealth, state and territory governments will improve the stewardship provided by governments.

A global review of funding models undertaken by DHSV recommends a blended funding model with a risk-adjusted capitation base and value-based health outcome components to transition the current public dental health funding approach to a reimbursement system aligned to value-based health care principles.

Embedding the following fundamental elements as part of the payment design will enable potential funding reforms to blend the right incentives that maximise value and health outcomes for patients, funders and the health system:

- Improving value for money;
- Reducing unwarranted variation including disinvesting or limiting low value services that do not improve health outcomes;
- Improving safety and quality;
- Improving oral health outcomes that matter to patients;
- Improving patient experiences;

- Prevention at the individual and population levels; and
- Optimal workforce skill mix that maximises efficiency gains in terms of value and cost.

This Issues Brief concludes with a series of recommendations for the Commonwealth, state and territory governments to support different funding blends to be modelled, trialled, tested and evaluated at a range of rural and metropolitan sites catering to different population segments before a staged roll-out.

Developing pilot programs with inbuilt scalability to larger geographical areas with different patient segments will allow for testing the operationalisation of the blended funding model under different circumstances.

1 Introduction

The 2018 Heads of Agreement for public hospitals funding has reaffirmed a Commonwealth focus on funding reforms designed to improve patient outcomes in primary care (Council of Australian Governments, 2018).

Re-orienting the focus of the funding model to achieve health outcomes and value, enables the health care system to manage costs effectively, optimise the use of finite public health resources and deliver quality care to patients (Australian Healthcare and Hospitals Association, 2017).

Oral health is essential to overall general health and is fundamental to wellbeing and quality of life (Council of Australian Governments Health Council, 2015). Oral health shares common risk factors with major chronic systemic diseases such as heart disease, diabetes and cancer (Council of Australian Governments Health Council, 2015). Despite similar risk factors and clinical disease markers, significant policy differences, underpinned by different funding mechanisms, exist between oral and general health care (Duckett et al., 2019). For example, Australia's universal health policy Medicare, does not cover oral health care (Duckett et al., 2019) and oral health services remain poorly integrated with the broader health care system (Productivity Commission, 2017a).

Funding reforms that align and integrate oral and general health systems will improve the efficiencies and effectiveness of health service delivery, and as a consequence, improve value and overall health outcomes for patients and the whole health care system (Council of Australian Governments Health Council, 2015). It is therefore vital that potential health care funding reforms consider the impact of poor oral health outcomes on overall health outcomes.

Achieving better health outcomes for an equivalent or lower amount of money within the context of public dental health care system requires shifting paradigms from the current output-driven funding model which focuses on volume to an outcome focused patient-centred model which focuses on value (Productivity Commission, 2017a).

This brief focusses on funding reforms that will be required for the public dental sector to achieve value-based health care (VBHC) in Australia. Using Dental Health Services Victoria's (DHSV's) learnings from VBHC implementation and funding model reform in the public dental environment, this brief will draw on local and international examples that provides the rationale and evidence for funding reforms that maximise value and outcomes for patients.

Value-Based Health Care

The concept of Value-Based Health Care has gained significant momentum internationally and in Australia (Australian Healthcare and Hospitals Association, 2017). Value-Based Health Care (VBHC) is a patient-centric approach to designing and managing health care systems that have the potential to deliver improved health outcomes that matter most to patients at a lower cost (Porter, 2010).

Value in health care is defined as the health outcomes achieved per dollar spent (Porter and Teisberg, 2006, Porter and Lee, 2013). Improving value for patients therefore requires improving patient outcomes without raising costs, or lowering costs without compromising outcomes, or both (Porter and Lee, 2013).

2 Strategic policies underpinned by appropriate funding reforms are vital for value-based health care

Strategic policy intent and appropriate funding reforms are critical for transitioning the current public dental care system towards VBHC (Australian Healthcare and Hospitals Association, 2017). Within the context of a VBHC system such reforms must enable an effective, accessible, equitable and sustainable health care system focused on patient-centred outcomes (Australian Healthcare and Hospitals Association, 2017). In Australia, the current oral health policy and funding environment limits the capacity of the public dental sector to achieve high value health outcomes, as the current fee-for-service public dental funding model prioritises ‘outputs over outcomes’ and ‘volume over value’ (Productivity Commission, 2017a).

2.1 *Harmonisation of Commonwealth policy and funding*

Similar to countries such as Canada, Sweden and Netherlands, Australia is moving towards aligning its current health care system with VBHC (Council of Australian Governments, 2018). While Australia has the support from national policymakers, it lacks national-level policies that enable the transition towards VBHC (Economist Intelligence Unit, 2016).

Australia has a complicated dental funding policy and funding mechanism (Duckett et al., 2019). Existing public dental funding policies are uncoordinated, with responsibility for funding dental services spreading across the Commonwealth, state and territory governments including public and private health providers (Biggs, 2012). Such complex funding arrangements fails to achieve the best outcomes for patients, funders and service providers as it leads to wasteful health resources, fragmentation services and lack of clarity of roles and responsibilities at the federal and state government levels (Productivity Commission, 2017a, Duckett et al., 2019). Harmonisation of this complicated intersection of policy and funding by having a nationally unified system with strong collaboration with states will produce maximum cost efficiency gains in terms of value and outcomes for the patients, government and health system (Productivity Commission, 2017a).

2.2 *Nature of public dental funding schemes*

Numerous Commonwealth public health funding policies and reforms over the past few decades have aimed to support the public dental sector to deliver oral health services across the population (Productivity Commission, 2017a). These funding reforms have primarily occurred through significant injection of Commonwealth funds to state-run public dental services with a strong focus on addressing volume based treatments (Duckett et al., 2019). To an extent, these funds have assisted in shortening the public dental waitlist, but have had no benefit in terms of health outcomes achieved or value of care provided across the public dental system (Productivity Commission, 2017a). Introducing a value component into payment systems can support a greater focus on quality, outcomes and patient experiences while simultaneously reducing health spending (Lorenzoni et al., 2018).

Re-orienting the current fee-for-service public dental funding model to support outcomes and value within the available Commonwealth resources and current funding arrangements between the Commonwealth, state and territory governments will improve the stewardship provided by governments.

Dental Health Services Victoria: Public dental funding reform through VBHC implementation

In 2018, Dental Health Services Victoria (DHSV), the lead public oral health agency in Victoria, became the first organisation not only in Australia, but internationally, to begin implementing VBHC in the public dental sector.

DHSV's patient centric, outcome focused VBHC model shifts service provision away from services that do not deliver outcomes that matter to patients and are less cost-effective, towards outcomes that are highly valued by patients in a cost-effective manner.

As part of its transition towards VBHC, DHSV has adopted the recommendations proposed by the productivity commission and the Victorian Auditor-General's Office in the areas of dental funding reform and outcome measurements which includes:

- fundamental funding reforms is needed to the current fee-for-service funding model to focus public dental services on achieving better oral health outcomes for patients; and
- the need to develop outcome measures for public dental services that should be used to measure performance, rather than solely relying on the current approach of measuring inputs and outputs.

3 Issues of the current fee-for-service public dental funding model

Past funding reforms have not comprehensively improved the oral health outcomes of the population; and there is significant growth in oral health expenditure that far exceeds the Commonwealth budget for oral health service delivery (Manton et al., 2018, National Advisory Council on Dental Health, 2012a). Expenditure on oral diseases is ranked second highest after cardiovascular disease (Australian Institute of Health and Welfare, 2014). Most oral diseases are preventable, yet approximately \$10.2 billion was spent on dental care in Australia in 2016-17, with state governments contributing \$836 million towards this total, and the Commonwealth government contributing \$1.5 billion (Duckett et al., 2019).

3.1 Effectiveness and efficiencies of Australia's public dental system

A number of issues relating to efficiency and effectiveness of the Australian public dental system have been identified within the context of the current fee-for-service funding model (Productivity Commission, 2017a, Productivity Commission, 2017b, Victorian Auditor-General's Office, 2016). These include:

- incentivising outputs and volume over patient outcomes and value;
- rationing dental services through waitlists that are created by huge demand for dental treatment;
- encouraging 'over-servicing' and emphasising higher cost and more invasive treatments rather than low cost preventive treatments that improves oral health;
- not measuring the significant unwarranted variation in dental services delivered and outcomes achieved across the public dental sector;
- not including an outcome component as part of the performance reporting and benchmarking of dental services;
- not creating opportunities for clinicians to work to their top scope of practice; and

- not utilising the appropriate workforce skill mix that can maximise the use of skills and optimise efficiency gains in terms of value and cost.

Oral health status in Australia

In Australia, adults who access public dental care are more likely to have poorer oral health and more disease than those accessing private dental services (Council of Australian Governments Health Council, 2015).

At a system level, poor oral health experience and outcomes result due to the following reasons:

- **An average 12 month wait to access routine care with no recall arrangements.** During this waiting period, oral health deteriorates, resulting in potentially large avoidable costs to public dental service users, governments, and the community (Productivity Commission, 2017a)
- **A focus on high volume services** whereby patients receive care that is not always focused on achieving better health outcomes (Productivity Commission, 2017a).
- **Patients less likely to receive preventive services in public dental services** as the current funding arrangement is predominantly treatment focused (Productivity Commission, 2017a).

The extent of the disease experience includes:

- **Having higher rates of oral disease**, leading to increase in oral health inequalities and costs to the health care system (Duckett et al., 2019); fewer teeth than the general population, impairing individual's ability to chew, leading to poorer food consumption patterns (AIHW: Chrisopoulos et al., 2016).
- **Being more likely to have teeth extracted**, leading to early loss of teeth impacting quality of life and limiting everyday activities such as eating, talking and sleeping (Brennan et al., 2008, Chrisopoulos and Harford, 2013).

4 Public dental funding reform in Victoria to enable VBHC

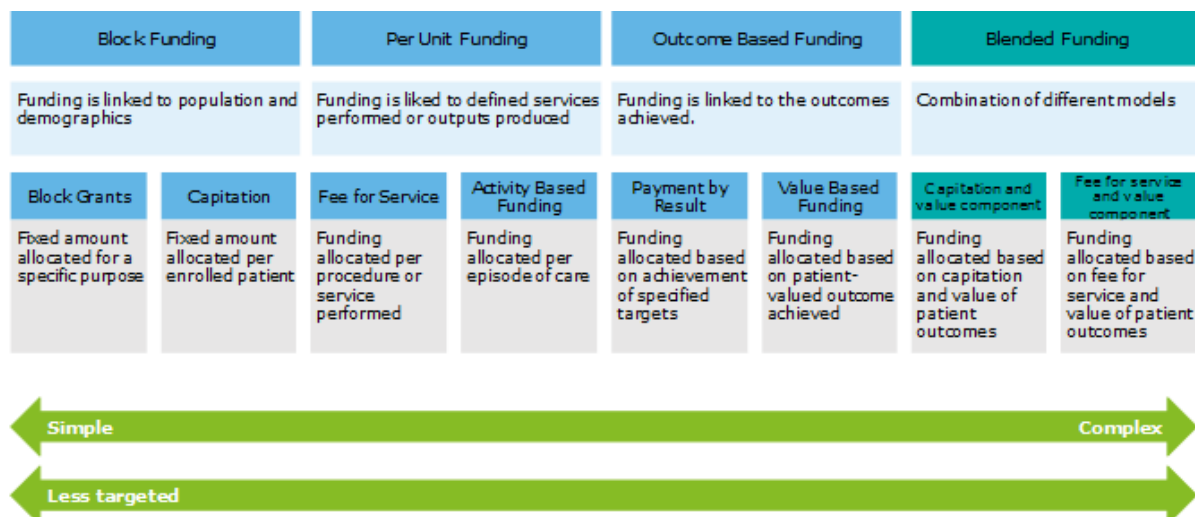
Health inequalities will exacerbate in the future if current funding strategy continues to solely focus on volume based treatment to more people (Duckett et al., 2019). Policy makers must consider the quality of health care and outcomes achieved, given the relatively high level of expenditure for oral health care. This will require a new approach to funding reforms that allows to accurately measure costs and compare them with outcomes (Kaplan and Porter, 2011).

In order to support high-value care and optimise health outcomes that matter most to patients in a cost-efficient way, DHSV reviewed a number of funding models used across the globe against VBHC criteria (Figure 1) (Dental Health Services Victoria & Deloitte Access Economics 2017).

4.1 The review of the funding models

Eight types of funding models were considered which included, Block Funding (Block Grants; Capitation); Per Unit Funding (Fee for Service; Activity Based Funding (ABF)); Outcome Based Funding (Payment by Result; Value-Based Funding); Blended Funding (Capitation Base with Value-Based Component; Fee for service or ABF Base with Value Component) (Figure 1). Table 1A provides a description of these funding models including the advantages and disadvantages.

Figure 1: Overview of the funding models (Deloitte Access Economics 2017).



4.2 Assessment of the funding models based on VBHC criteria

To assess which funding model would provide the best option to support the move to VBHC in public dental sector, funding models were compared and analysed against six VBHC criteria including: better health outcomes; appropriate use of health services; high quality services; effective use of health workforce; cost effectiveness and access (Table 1).

Table 1: Results of the funding model review against VBHC criteria

Criteria	1. Block Grants	2. Capitation	3. Fee-for-service	4. Activity-based Funding	5. Payment by Result (PbR)	6. Value-Based Funding	7. Blended Funding - Capitation and value-based	8. Blended Funding - Fee for service / ABF and value-based
Better health outcomes	✗	⚠	✗	⚠	⚠	✓	✓	✓
Appropriate use of health services	✗	⚠	✗	⚠	⚠	✓	✓	✓
High quality services	✗	⚠	✗	⚠	⚠	✓	✓	✓
Effective use of health workforce	✗	✓	✗	✓	✓	✓	✓	✓
Cost effectiveness	✗	✓	⚠	⚠	✓	✓	✓	✓
Access	✗	✓	⚠	✓	⚠	⚠	⚠	⚠

Key: ✗ The funding model does not satisfy the given criterion; ⚠ The funding model partially satisfies the given criterion; ✓ The funding model strongly satisfies the given criterion.

Analysis of the funding models (Dental Health Services Victoria & Deloitte Access Economics 2017).

Better health outcomes: Allocating funding based on value was found to be the best model in terms of delivering better health outcomes for patients as this model most closely aligned interest of practitioners and patients.

Appropriate use of health services: Funding models that are outcomes based (Payment by Results (PbR) or value-based) rate the highest in terms of appropriate use of health services. Providing funding based on what the service or treatment has achieved aligns the financial incentives with the desired patient outcomes and ensures that patients are not over-serviced or under-serviced and an appropriate amount of preventive treatment is done.

High quality services: A value-based payment model was found to most appropriately incentivise the provision of high quality services, including incentivising practitioners to increase patient satisfaction.

Effective use of health care workforce: Most funding models, with the exception of block grants and fee-for-service models, were found to encourage effective use of the dental health workforce. This involves incentivising the use of oral health therapists, dental therapists, hygienists, dental prosthetists and oral health educators to relieve dentists from tasks such as dental health education, hygiene instruction, denture servicing and simple restorations.

Cost effectiveness: Cost-effectiveness was considered at both the unit level (cost of an individual procedure) and the system level (mix of procedures making up a treatment). It was found that capitation as well as PbR and value-based funding models were best placed to maximise efficiency, encouraging practitioners to improve efficiency of individual procedures and choose the most cost effective course of treatment.

Access: Access considered the number of patients which DHSV could likely treat, given the finite resources available. While outcomes-based (PbR or value-based) models would likely improve long run access (due to lower treatment costs), it was found that these models had significant setup and compliance for DHSV and practitioners. As a result, in the short term access to services may not improve under these funding models. However, both capitation and activity-based funding (ABF) models would likely improve access to public dental care.

4.3 Recommendations from the funding model review

Following the review, understanding how each model functioned in a practice context, a blended funding model (Table 1) combining elements of risk-adjusted capitation and the value-based care model was recommended as the best model for transitioning the Victorian public dental sector to a reimbursement system aligned with VBHC principles.

While ranking equivalently to the blended funding models against the VBHC criteria, and ahead of the other models, value-based funding was found to face practical implementation difficulties, including difficulty in defining value, a higher administrative burden for providers in collecting outcomes, and difficulty in tying specific patient outcome measures to funding allocations. Based on these barriers, it may not be feasible to implement a pure value-based funding model at this point in time.

5 The blended funding model

The use of multiple payment forms for the same care setting is known as a ‘blended’ payment (Productivity Commission, 2017a). Blending different methods into the overall payment model in the right proportions can offer synergies to optimise the benefits of health outcomes and minimise the disadvantages of existing Commonwealth public dental funding model (Dawda, 2015). Such a blended model not only incorporates the outcome and value element, it also offers certainty for providers and greater equity through incorporating a risk-weighted capitation element (Productivity Commission, 2017a).

Capitation is a set amount for each enrolled person assigned to an organisation, per period, whether or not that person seeks care (Productivity Commission, 2017a). Concerns with potential under-servicing under pure capitation arrangements could be addressed, at least in part, by measuring and reporting on user outcomes at the provider level (Productivity Commission, 2017a).

5.1 Using a blended funding model to improve health outcomes

Blended funding models are often used where there are gaps in service availability, or to address weaknesses associated with single-base funding models such as the fee-for-service model (Oliver-Baxter, 2015). In a study of global payment methods in primary health care, the Organisation for Economic Co-operation and Development (OECD) concluded that blended payments worked well to connect specific health policy objectives to outcomes and to balance the negative and positive incentives of different payment mechanisms (OECD, 2016).

Blended payment models with an outcome component are increasingly being used in primary health care settings in several OECD countries (OECD, 2016). In April 2016, all Australian governments signed a Heads of Agreement that committed to improve the health outcomes of Australians and decrease avoidable demand for public hospital services through a series of reforms including the development and implementation of funding and pricing approaches for safety and quality (IHPA, 2017). To this effect, the Independent Hospital Pricing Authority (IHPA) is considering approaches that blend pricing and funding options to take advantage of the relative strengths of different payment methods (IHPA, 2017). In the UK, General Practitioners are paid by a blended method which includes capitation, fee-for-service, and performance payments (Productivity Commission, 2017a). Encouragingly, the medical sector in Australia supports a blended payment mechanism which recognises and caters for different complexities and levels of care needed (Biggs, 2014, Oliver-Baxter, 2015).

5.2 The blended funding model in dental sector

Review of the influence of payment models on oral health care has shown that a blended payment consisting of a capitation component, a fee-for-service component and an allowance related to performance provides the best incentive structure for the delivery of dental services (Woods, 2013). Using a blended model, payment can be done in a manner that encourages service providers to focus on preventive care, improve safety and quality and achieve the best outcomes for patients rather than the number of treatments provided (as occurs under the fee-for-service arrangements) (Productivity Commission, 2017a).

The National Health Service (NHS) in the UK is taking a blended approach to payment models in reforming remuneration in dental contracts to balance the activity and capitation drivers and support the prevention and treatment needs of patients (Department of Health, 2011). Drawing on the experience of NHS, the blended payment model would offer substantial benefits to the delivery of public dental services in Australia (Productivity Commission, 2017a). The Productivity Commission recommended a payment model for public dental services that blends:

- a risk-weighted capitation payment;
- outcome payments for improving the oral health of patients; and
- activity payments for urgent and more complex treatments where treatment needs are less predictable, for example dentures and therefore cannot be readily covered within the capitation payment.

Co-designing a blended funding model for public dental services in Victoria:

- DHSV is working with the public dental sectors and government to co-design blended funding reforms in Victoria and obtain sector uptake.
- Consultations with relevant stakeholders notably the Productivity Commission, Victorian branch of Australian Dental Association, Victorian Department of Health and Human Services has occurred to explore options for incorporating outcomes into the blended funding model, identify high-level criteria for selecting models and inform analysis.
- DHSV will shadow the blended funding model in due course of time to test its applicability in the public dental sector within the existing funding arrangements with the government. A phased approach will be used to ensure access to dental services is optimised within the current funding arrangements.
- The funding model will be tested in a range of rural and metropolitan sites catering to different population segments to understand how the model will operate under different circumstances.

Case study 1: UK dental contract reform incorporating a blended funding model

Historically the United Kingdom's National Health Service (NHS) has funded dental services using a wholly activity based system whereby dentists are remunerated for treatment and repair rather than preventing future disease (Steele, 2014). While this approach worked well historically to address high levels of dental disease, improvements in oral health have meant this approach is increasingly inappropriate.

To address this, in 2011 the NHS began a pilot to shift the funding model from an activity based towards a blended model combining capitation and quality scheme and improved health outcome with a focus on preventive dental treatments rather than restorative treatments (Pavitt et al., 2014).

Although paying through the blended funding model has not commenced, the remuneration model adopted in this trial blended together capitation payments with a proportion of funding tied directly to patient outcomes as measured by the Dental Quality and Outcomes Framework across three domains (Department of Health, 2011):

1. Clinical effectiveness (60%)
2. Patient experience (30%)
3. Safety (10%)

6 Re-orienting the current public dental funding model in Australia to focus on value and outcomes

Within the context of funding models, paying for 'value' means that patient's needs are at the heart of the payment systems and providers are rewarded for delivering superior value to patients, specifically, achieving better outcomes at lower costs (Porter and Kaplan, 2016). If outcomes improves, patients, payers and providers can collectively benefit, whilst the economic sustainability of the health care system increases (Porter and Kaplan, 2016).

Health spending itself is insufficient to improve value and outcomes, for example, high spending does not necessarily equate to good health outcomes (Economist Intelligence Unit, 2016). Identifying the right blend for the payment systems that supports the implementation of VBHC is vital.

Enabling funding reforms to maximise value and health outcomes

Future funding reforms can achieve high value care and better health outcomes, by blending the right payment incentives that optimises desirable health outcomes and discourages undesirable consequences. The majority of the contemporary funding reform implementation involves a blend of efficiency and outcome components (OECD Health Ministerial Meeting, 2017). To achieve the right outcomes, embedding the following fundamental elements as part of the payment design will enable potential funding reforms to blend the right incentives that maximises value and health outcomes for patients, funders and health care system.

- Improving value for money;
- Reducing unwarranted variation including disinvesting and limiting low value services that does not improve health outcomes;
- Improving safety and quality;
- Improving oral health outcomes that matter to patients;
- Improving patient experience;
- Prevention at the individual and population level; and
- Optimal workforce skill mix that optimises efficiency gains in terms of value and cost

7 Value for money

Value for money relates to health systems ability to improve the way in which existing resources are efficiently used for maintaining the financial sustainability of the health system (OECD, 2010b). Value for money reassures taxpayers, that their money is being spent wisely, and to reassure patients that their claims on the health system are being treated fairly and consistently (Smith, 2009).

7.1 The current public dental model does not offer value for money

At a time of reduced expenditure on public health and rationing of dental care and health resources, there is no mechanism in the current dental funding model to ensure that public dental patients are receiving treatments that are both clinically and cost effective; and that dental care expenditure represents value for money for both patients and the government (Productivity Commission, 2017a). Dental treatments offered in public dental sector have not been based on a comprehensive review

of clinical evidence to determine cost-effectiveness and value for money of those treatments, resulting in poor oral health outcomes and low value care (Productivity Commission, 2017a).

7.2 The tension between equity versus efficiency

Experience in high-income countries, including Australia, suggests a persistent tension between the equity goal of assuring universal access to health care and the efficiency goal of assuring prudent use of health resources to achieve the best outcomes that offer the best value for money for the patient, funder and health system (OECD, 2016).

Existing dental funding schemes in Australia are inadequate, insufficient and inequitable across states and territories (Duckett et al., 2019) and do not adequately cover access to services for all eligible patients in a single year (Productivity Commission, 2017a). The current funding level for public dental services allows for treatment of only about 20% of the eligible population leaving the remaining 80% to pay for relatively expensive care in the private sector, go without care entirely or wait for long periods (Council of Australian Governments Health Council, 2015). Maintaining efficiency and financial sustainability of the current fee-for-service dental funding in an environment of rising demand for public dental services means further explicit rationing of public dental services (Duckett et al., 2019).

In Australia public dental expenditure is growing, however without any associated improvement in outcomes (Productivity Commission, 2017a). While equity cannot be achieved in the current policy environment where access to public dental care is not universal, without a clear outcomes-focused performance indicator metrics, it is not possible to determine whether public dental sectors are spending public money efficiently and the spending is offering value for money (Victorian Auditor-General's Office, 2016).

The key economic concepts of value for money that supports VBHC:

- **Allocative efficiency:** the extent to which limited funds are used in procuring the mix of health services according to patients needs and preferences (Smith, 2009).
- **Technical efficiency:** indicates the extent to which a provider is securing the minimum cost for the maximum quality in delivering its agreed outputs. That is, maximising health outcome at minimal cost. This concept mainly focuses on operational performance and to what extent resources are being wasted in service delivery (OECD, 2010b, Smith, 2009).
- **Dynamic efficiency:** achieved by continually improving technical efficiency (including through innovation in service delivery), and allocative efficiency, by adjusting the combination of human services that are delivered as needs and preferences change (Productivity Commission, 2015).

7.3 The efficient price of public dental service delivery

State and Territory governments must consider how the efficient cost of providing dental services varies for different population groups, and in different settings. Payments to providers must be weighted to reflect such variations, to mitigate the risk of dental providers avoiding high-cost patients where capitation-based payments would not cover their costs (Productivity Commission, 2017a). This can give rise to equity concerns by undermining the effectiveness of public dental services as a safety net (Productivity Commission, 2017a).

Payments to providers should reflect the efficient cost of delivery. The concept of efficient cost already forms the basis of activity-based funding of public hospitals in Australia, where IHPA determines the National Efficient Price and National Efficient Cost for services (IHPA, 2017). IHPA should set efficient prices, including risk-weighting for public dental services, in collaboration with the Commonwealth, state governments and service providers (Productivity Commission, 2017a).

7.4 Better value for money by measuring value in health care

To measure value in health care, it has been suggested that (Porter 2010; Porter and Kaplan 2016; Porter and Teisberg 2006):

- the proper **unit for measuring value should encompass all health services** or activities that jointly determine success in addressing a set of patient needs across the whole cycle of care. These needs are determined by the patient's health condition, defined as an interrelated set of health circumstances that are best addressed through an integrated approach to care.
- For primary and preventive care, **value should be measured for defined patient segments sharing similar needs**, for example, elderly population or specific high-risk groups such as children with dental caries. Adopting a risk adjustment approach enables accounting for differences in the risk and complexity profile of patients within the patient group.
- **Value for the patient is created** by service providers' combined efforts **over the full cycle of care**. Given that care activities are interdependent, value for patients is often revealed only over time and is manifested in longer-term outcomes such as sustainable recovery, need for ongoing interventions, or occurrences of treatment-induced illnesses.
- **To reduce cost**, the best approach is often to spend more on some services to reduce the need for others, for example to encourage effective treatments that deliver value and/or **create disincentives for those that are not cost effective and do not deliver value**.
- The way to **assess value** is to **track patients' outcomes and costs longitudinally** (ongoing) at multiple time points.
- **The resources or costs must reflect the actual costs of the care delivered** to a patient over a full cycle of care. Time-driven activity-based costing (TDABC) has been suggested as providing the cost component of value (Kaplan and Anderson, 2004). TDABC requires estimates of two key parameters:
 - the capacity cost rate (CCR); and
 - the time required to perform activities in service.

The CCR is the cost of capacity-supplying resources divided by the practical capacity of those resources. TDABC, described as a micro-costing approach calculates the costs of health resources utilised as a patient moves along a care process and has been considered as well-suited to accommodate the complexity of cost accounting in health care systems (Kaplan and Michael, 2011).

7.5 Assessing value for money in health care investments

Assessing the value of health care investment has extensive implications for patient access, reimbursement of health care providers and health outcomes. Assessing value for money is not referring to cost cutting, rather, if the benefits of spending exceed the costs. Increased value for money can come from reduced spending, but it can equally come from delivering more efficient and effective services that patients value as part of health care delivery (OECD, 2010b).

Value in health care remains largely unmeasured and interpreted in a variety of ways (Porter, 2010). Consequently, there are additional challenges emerging including, for example, demonstrating and evaluating value for money.

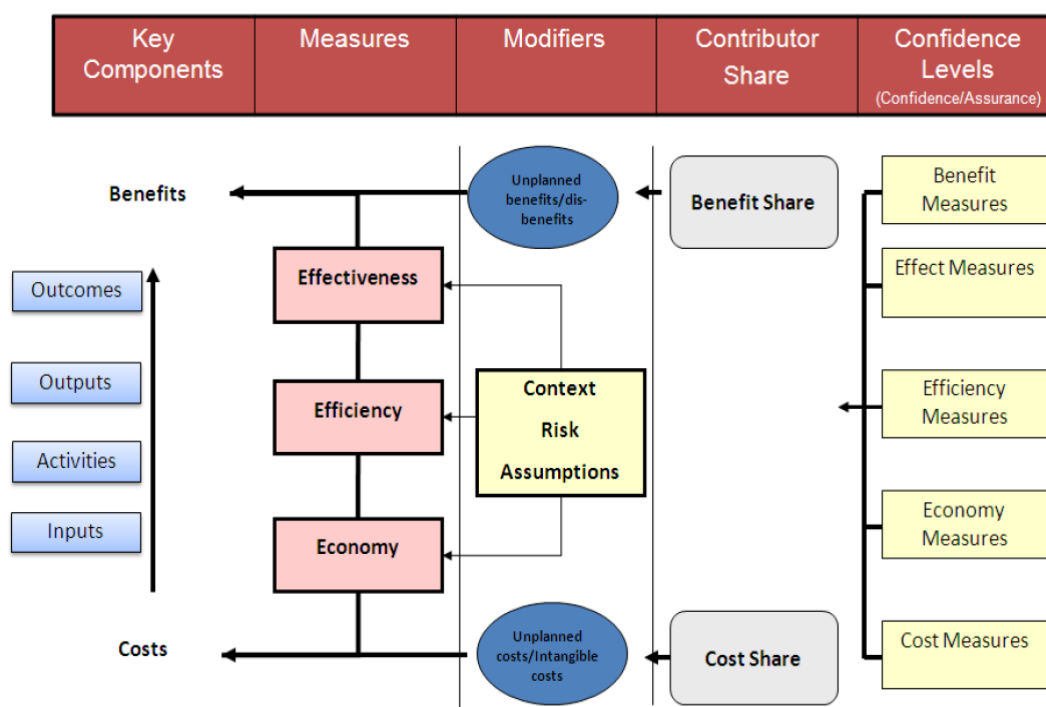
The following 4E criteria can be used to assess value for money for government spending, that is, the optimal use of resources to achieve the intended outcomes (National Audit Office, 2019):

- **Economy (Spending less):** minimising the cost of resources used or required (inputs) while aiming for quality outcomes
- **Efficiency (Spending well):** the relationship between the output from goods or services and the resources to produce them; and
- **Effectiveness (spending wisely):** the relationship between the intended and actual results of public spending (outcomes)
- **Equity (Spending fairly):** the extent to which services are available to and reach all people that they are intended to reach. For example, some people may receive differing levels of service for reasons other than differences in their levels of need.

7.6 The value for money conceptual framework

The conceptual value for money framework (Figure 2) helps to assess the 4E criteria and examine the optimal relationship between costs, resources, benefits and outcomes (Barnett et al., 2010).

Figure 2: Value for money conceptual framework (Barnett et al., 2010).



Key Components:	Value for money (VfM) examines the optimal relationship between costs/resources and benefits/outcomes which are delivered through processes that transform inputs through activities to outputs which are necessary and sufficient to trigger outcomes.
Measures:	VfM can be optimised through consideration and strengthening of economy, efficiency and effectiveness processes and measures.
Modifiers:	The optimal balance of effectiveness, efficiency and economy requires factoring in the context, risk and assumptions which set limits on these three elements. Intangible costs and benefits must be factored in which influence judgements on VfM. At the end of any programme, VfM judgements made at the outset needs to consider not only performance against plan but unplanned costs and benefits.
Contributor share:	There are significant challenges to meet in determining how to attribute costs and benefits when making VfM judgements. This component of VfM framework is a reminder that the attribution/contribution questions need to be answered in any VfM judgement and that assuming a pro-rata claim on outcomes based on inputs may be too crude an approach.
Confidence levels:	Data quality plays a significant part in any VfM judgement; this is in part linked to how explicit assumptions are made about reliability, relevance and the robustness of the data sets used and how sensitive VfM findings would be to changes in any assumptions made. This latter point is of specific relevance to the options for measuring VfM in a governance context.

8 Reducing unwarranted variation including disinvesting and limiting low-value services that do not improve health outcomes

There is a need to evaluate how limited health care dollars are spent to ensure that health system remains affordable into the future. This is being achieved through the use of financial disincentives to drive quality and safety improvements both in Australia and internationally (Eagar et al., 2013, IHPA, 2017).

To create an affordable and sustainable health care system, investment in cost-effective services, providing high-value care and better health outcomes, needs to be promoted and balanced with disinvestment in low-value services which do not improve health outcomes (McCreanor, 2017).

Disinvestment is not a cost-cutting process, it is about delivering high-value care which improves health outcomes and limiting low-value care which does not improve health outcomes.

8.1 Low-value services in the current public dental system

In the public dental sector, services that are low value exist and provide little or no positive impact on outcomes. Often patients who receive these low value services are not consistently provided or supported with other services that are high value (Productivity Commission, 2017a). Unlike medical services, public dental services in Australia have not undergone evaluation and review of their efficiency and cost-effectiveness (Productivity Commission, 2017a). Consequently, many patients receive low-value care which has no impact on improving health outcomes and is not cost-effective from a public subsidy perspective (Elshaug et al., 2012).

Routine overuse of services does not improve health outcomes. In output-based funding models, low value is not accounted for in the system and therefore clinicians are incentivised even if they are providing low value treatments (Productivity Commission, 2017a). For example, the provision of routine scaling and polishing in otherwise dentally-fit patients makes little or no difference to health outcomes and is therefore considered to be a low-value service and waste of health resources (Jones et al., 2011, Lamont et al., 2018). Data from the NHS shows that 50% of the courses of care provided in the general dental service consisted of an examination and scaling and polishing (Department of Health, 2000). It was found that the NHS was spending £150 million a year on over-frequent examinations and unnecessary scaling and polishing (Department of Health, 2004).

Using a systematic approach and transparent strategies DHSV is working to identify and reduce the use of low value services.

8.2 One-recall-fits-all approach is a low-value service

With current funding level allowing treatment for only 20% of the eligible population (Council of Australian Governments Health Council, 2015), a significant number of Australians cannot access dental care in a timely manner and those that can, may not require dental care at the frequency at which they are receiving it (Gussy et al., 2013). For example, one low-value service routinely occurring in the Australian dental sector is the 6-monthly recall for dental patients.

There is a lack of evidence to support the frequency of this recall interval and existing reviews does not support the one-recall-fits-all approach (Riley et al., 2013). Instead, recall intervals should be customised to fit a patient's individual needs, based on an individual's risk-assessment and disease profile (Gussy et al., 2013).

Taking a risk-based approach to determining the frequency of dental visits could potentially improve the efficiency of services by freeing up resources so they can be used to treat those people with greater needs (Gussy et al., 2013).

8.3 Optimising outcomes by identifying and limiting low-value services

Disinvesting starts with identifying and reducing the use of health care interventions that delivers marginal health and cost benefit, be it through overuse, underuse, misuse or waste (Elshaug et al., 2012). Internationally, in the health care sector, overuse of low-value care and underuse of high-value care is widespread and contributes to unnecessary costs and poor health outcomes (Brownlee et al., 2017).

The Australian medical sector is making good progress towards disinvesting in low-value care (Elshaug et al., 2012). Active disinvestment in low value care should be expanded to include the dental sector.

The [Australian Atlas of Healthcare Variation](#) (The Atlas) provides opportunities to investigate low-value services including overuse of specific services which do not improve health outcomes (Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare, 2018). However, in the absence of national data on patient outcomes, the Atlas has used processes of care as a proxy. According to Porter, value, is not measured by the process of care used (Porter, 2010). While process measurement and improvement are important, they are not

substitutes for measuring outcomes and costs (Porter, 2010). To enable VBHC, it is vital that in the future, the Atlas work is complemented by outcomes data.

Cost-savings or cost-neutral changes can be made within the existing finite health care budgets by reducing the use of existing low-value services that offer little or no benefit relative to the cost of their public subsidy (Elshaug et al., 2012). Identifying and limiting the use of such services would allow public health funding to be reallocated to more beneficial or cost-effective services, thus optimising health outcomes.

9 Improving safety and quality

Safety and quality is a key focus for Australian governments, service providers and health professionals. It is central to the delivery of health care, and is embedded in all health reforms (Australian Commission on Safety and Quality in Health Care, 2019). The Australian Commission on Safety and Quality in Health Care (ACSQHC) defines safety as ‘reducing the risk of unnecessary harm associated with health care to an acceptable minimum’ (ACSQHC 2017a). ACSQHC defines quality as ‘the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge’ (ACSQHC 2015).

A safe and high-quality health system provides the most appropriate and best-value care, while keeping patients safe from preventable harm (Australian Institute of Health and Welfare, 2018a). A range of organisations act to improve safety and quality of health care. They may focus their efforts nationally (for example, ACSQHC), at the state or territory level (health departments), at the service level (individual hospitals), at the clinical level or for specific areas of health care (health professional associations).

In August 2012 Australian Health Ministers agreed to the first set of Australian Safety and Quality Goals for Health Care which includes (Australian Commission on Safety and Quality in Health Care, 2019):

- **safety of care:** people receive health care without experiencing preventable harm;
- **appropriateness of care:** people receive appropriate, evidence-based care; and
- **partnering with consumers:** there are effective partnerships between consumers, health care providers and organisations at levels of health care provision, planning and evaluation.

9.1 Safety and quality in public dental sector

In the context of public dental sector, all governments have committed towards continuous improvement in the safety and quality of oral health services and endorsed benchmarking programs incorporating clinical outcomes and relevant quality indicators (Council of Australian Governments Health Council, 2015).

Australia’s National Oral Health Plan has identified safety and quality as one its key foundation areas to ensure that oral health services are provided in accordance with the Australian Safety and Quality Goals for Health Care (Council of Australian Governments Health Council, 2015). The series of strategies identified to achieve this includes:

- supporting the accreditation of private and public oral health services to the National Safety and Quality Health Service (NSQHS) Standards;
- encouraging participation in clinical audit and benchmarking programs that compare clinical outcomes and relevant quality indicators;
- involving consumers in the planning, design, delivery and evaluation of oral health services.
- developing a national picture of the consumer experience of oral health services; and
- collaborating with peak bodies to develop and implement oral health standards and audit tools across sectors.

In Australia, population level oral health data is not routinely collected or available and service level data are inconsistent (Council of Australian Governments Health Council, 2015). This provides limited ability to monitor the oral health outcomes for safety and quality. In addition, data collected from public dental services represents less than 30% of the total dental service expenditure (Council of Australian Governments Health Council, 2015).

Public dental service data are not necessarily representative, due to variation between jurisdictions in the scope and coverage of services (Productivity Commission, 2017b). This affects the capacity to effectively evaluate the impact of local and national policies and service models on oral health and safety and quality outcomes. The development of a national strategy to guide data collection, research and evaluation activities will enhance safety and quality of public dental sector and inform investment decisions facilitating a more equitable allocation of funding (Council of Australian Governments Health Council, 2015, Productivity Commission, 2017a).

9.2 Improved integration of data to enhance safety and quality

Routinely linked data sets will provide a stronger foundation to investigate safety and quality including patient outcomes. Integration of hospital data with other data sources, such as clinical-quality registries and potentially the My Health Record, will enhance better safety and quality and outcomes (Australian Institute of Health and Welfare, 2018a). The Australian Institute of Health and Welfare is working with the Commonwealth, state and territory governments to inform the public on selected safety and quality measures at the national, state and territory and hospital level, on an annual basis (Australian Institute of Health and Welfare, 2018a). This work is limited to the general health sector. For a more holistic view of safety and quality in Australia's health care system, this work should be expanded to dental sector.

Improving the integration of hospital and other health service data at a national level will better support the measurement of safety and quality outcomes. Data on patient outcomes are central to assessing the safety and quality of hospital care. However, there are currently limited national data on patient experience and no nationally reported data on outcomes described by patients themselves (Australian Institute of Health and Welfare, 2018a, Productivity Commission, 2017a, Productivity Commission, 2017b).

Clinical Quality Registries (CQR) are an important means to monitor outcomes and drive quality improvements in care. In 2016 the Australian governments committed to developing a national CQR strategy to provide a systematic approach to funding and governing CQR for diseases, conditions and procedures with high cost and disease burden on the Australian health system (Australian Institute

of Health and Welfare, 2018a). Given the cost and impact of poor oral health in Australia, there is a need for structured and coordinated approach to the collection and availability of oral health data to inform safety and quality including policy and funding reforms (Productivity Commission, 2017a).

The ACSQHC released the National Safety and Quality Health Service (NSQHS) Standards *Guide for Dental Practices and Services* to support dental practices and services improve the safety and quality of care using the NSQHS Standards as a framework for improvement (Australian Commission on Safety and Quality in Health Care, 2015). Most public dental practices are required to gain accreditation against the NSQHS Standards, which encompass six areas (Standard 1 Governance for Safety and Quality in Health Service Organisations; Standard 2 Partnering with Consumers; Standard 3 Preventing and Controlling Health Care Associated Infections; Standard 4 Medication Safety Standard; 5 Patient Identification and Procedure Matching; and Standard 6 Clinical Handover) where it is known that people have been harmed as a result of health care and there is good evidence on how to achieve better outcomes (Australian Commission on Safety and Quality in Health Care, 2015). The registration requirements for dental professionals in Australia provide for a base minimum standard of care (Productivity Commission, 2017a).

9.3 Measuring variation to improve safety and quality

Measuring variation in health care provision is seen as one of the important ways to achieve better quality and safety and enhance patient outcomes (Appleby et al., 2010). Mapping variation in the use of health care services is a valuable tool for understanding how the health system provides consistent and appropriate high quality care and outcomes to its patients (Australian Commission on Safety and Quality in Health Care, 2018). Variation in most countries (OECD, 2014) including Australia (Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare, 2018) has been demonstrated at a clinician level (between health care providers), at the service level (between different health services) and at a geographic level (between regions).

9.4 Variation in public dental sector

There is significant variation in the current volume of services delivered across public dental sector in Australia which cannot be explained by variations in disease rates in specific populations serviced (Productivity Commission, 2017a, Victorian Auditor-General's Office, 2016). Some variation in health care use is expected as it can be associated with differences in patients' health needs or personal preferences. However, in certain cases, some people may receive inappropriate or unnecessary care, while others may miss out on care that might be beneficial, this is unwarranted variation, and leads to low value for money and poor health outcomes (Australian Institute of Health and Welfare, 2018a). Unwarranted variation may indicate the need to review whether financial incentives should be changed to encourage more appropriate care (Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare, 2018).

The Atlas published by the Australian Commission on Safety and Quality in Health Care, in collaboration with the Australian Institute of Health and Welfare, states and territories including professional bodies have instigated quality improvement initiatives by mapping unwarranted

variations in health care (Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare, 2018). The Atlas through its work promotes equity of access to evidence-based health care that improves outcomes cost-effectively, consequently guiding safety and quality and assessing value for money in health care investment (Australian Commission on Safety and Quality in Health Care and Australian Institute of Health and Welfare, 2018). Currently variation in public dental sector is not part of the Atlas and must be embedded as part of the Atlas to improve the efficiencies and effectiveness of public dental services at the Commonwealth and state levels.

Measuring unwarranted variation in the Victorian public dental sector

To guide better health outcomes, safety and quality including value for money, DHSV has begun measuring variation in the Victorian public dental sector. By examining and measuring variation in public dental sector by local government area, DHSV has gained insights into the existence of persistent unwarranted variation in care outcomes at the clinician, service and geographic level. DHSV is currently working with the public sector to reduce such unwarranted variations in outcomes through formulation of best practice guidelines, peer review, mentoring, skill development and through the use of clinician scorecards.

9.5 Pricing for Safety and quality

There has been increased attention on issues of inequitable access and variations in the safety and quality of services (Australian Commission on Safety and Quality in Health Care, 2018). ACSQHC, along with the IHPA, has undertaken comprehensive reviews of the literature on incorporating safety and quality measures into the payment systems (Eagar et al., 2013).

In 2016, the COAG Heads of Agreement committed to a series of reforms that aimed to decrease avoidable demand for public hospital services and improve the health outcomes of Australians. These reforms included the development and implementation of funding and pricing approaches for improving safety and quality outcomes (IHPA, 2017). The IHPA and the Australian Commission on Safety and Quality in Health Care in consultation with the Commonwealth and state governments has worked to:

- develop a comprehensive and risk-adjusted model to integrate quality and safety into hospital pricing and funding for specified adverse events and a set of agreed hospital acquired conditions; and
- develop a comprehensive and risk-adjusted strategy and funding model that will adjust the funding to hospitals that exceed a predetermined avoidable readmission rate for agreed conditions.

Pricing mechanisms are part of national efforts in improving safety and quality of hospitals and there are several initiatives undertaken to integrate safety and quality into the pricing and funding of public hospitals (Eagar et al., 2013). To enhance safety and quality, outcome measures must be linked to payments to provide quality signals to users, providers and system stewards (Productivity Commission, 2017a).

In 2017, the Australian Government and states and territories agreed to integrate safety and quality into the pricing and funding of public hospitals (Council on Federal Financial Relations, 2017), with

an aim to promote patient-centred care by improving patient health outcomes, safety and quality, and supporting greater efficiency of the health system. The IHPA determines adjustments to reflect legitimate and unavoidable variations in the costs of delivering health care services for priority populations. These adjustments are currently not incorporated into the current oral health funding agreements between the Commonwealth and states (Council of Australian Governments Health Council, 2015). The Australian public dental sector demonstrates huge cost variations and IHPA should include pricing adjustments to cover oral health.

2017 also saw Australian governments sign an addendum to the National Health Reform Agreement. The Agreement sets out public hospital financing arrangements until 1 July 2020 and requires implementation of pricing and funding approaches for sentinel events and hospital acquired complications, and the development of an approach for avoidable readmissions (IHPA, 2017). The establishment of sentinel event reporting arrangements aimed to facilitate a safe environment for patients by promoting safety and quality and reducing the frequency of these events.

When all reforms are in place, it is intended that funding and pricing for public hospitals will be linked to sentinel events, hospital-acquired complications and avoidable readmissions to hospitals (Australian Institute of Health and Welfare, 2018a).

To varying extents, safety and quality are integrated into the pricing and funding of privately funded hospital care; the nature of such arrangements will vary depending on individual agreements between health insurers and hospitals (Australian Institute of Health and Welfare, 2018a). Where appropriate, the pricing mechanisms should also consider public dental services.

10 Improving oral health outcomes that matter to patients

Outcomes are the strongest predictors of success of the funding model and paying for outcomes is the ultimate measure of success of a funding formula (Porter and Teisberg, 2006). Clinical and patient reported outcomes demonstrate the extent to which health services have been successful in improving the health outcomes and assist in monitoring health system performance; identifying services that improve health outcomes and that are cost-effective; and benchmarking best practices (Productivity Commission, 2017a).

However, outcome measures are not routinely collected and published for public dental services. Most of the measures currently collected and reported by Australian public dental services, are inputs, such as funding levels and numbers of dental professionals and outputs, including activity and mix of services (Productivity Commission, 2017a). These are measures of health service delivery which are based on information from providers of health services and does not represent measures from a patient perspective.

Outcome measures as reported from patient perspective provides important information on measuring health performance to inform ongoing improvements in the funding reforms, policy renewal and quality of health services (Australian Institute of Health and Welfare, 2018a). Improved collection and integration of outcome data at the national, state and territory levels will enhance health system performance and provide valuable source of comparative data to inform future funding reforms and investments (Council of Australian Governments Health Council, 2015).

An increased focus on nationally representative data will support the evaluation of health outcomes for public dental patients and the My Health Record could provide an important source of data link (Australian Institute of Health and Welfare, 2018a). There is strong support to include oral health information in My Health Record to improve the links between oral and general health systems (Productivity Commission, 2017a). Queensland for example, has commissioned a project that will provide integration functionality to enable automatic data transfer from its electronic oral health record system to the My Health Record (Productivity Commission, 2017a).

10.1 Measuring outcomes that matter to patients

Outcomes are a complex variable to measure. They are inherently condition-specific and multidimensional and for any health conditions, no single outcome captures the results of care (Porter, 2010). In addition, outcome measurement should include sufficient measurement of risk factors or initial conditions to allow for risk adjustments (Porter, 2010). To measure ‘value’, payment models must be tied to a set of standardised and measurable patient-centric health outcomes, such as the patient reported outcome measures (PROMs).

Patient Reported Outcome Measures (PROMS)

PROMs provide a systematic way to assess the effectiveness of health care interventions from the patient’s perspective using standardised and validated questionnaires (Australian Commission on Safety and Quality in Health Care, 2018). When PROMs are used before and after a health care intervention and at multiple points throughout a longer term intervention, the information associated with these interventions can be considered to be a measure of health outcomes (Australian Institute of Health and Welfare, 2018a).

Generally, PROMs measure aspects such as overall health and wellbeing (or ‘health-related quality of life’), the severity of symptoms such as pain, measures of daily functioning (activities required for self-care and to support social interactions) and psychological symptoms (Australian Institute of Health and Welfare, 2018a).

PROMs complement and extend more traditional measures of effectiveness, such as clinical indicators and measures of output or efficiency. Outcomes for any health condition or patient population should be measured along multiple dimensions including survival (where appropriate), degree of recovery, ability to function, duration of care, discomfort and complications, and the sustainability of recovery (Porter, 2010). While each health care patients experience may vary, public reporting of outcome measures in simple, user-driven categories (for example, ‘pain went down’, ‘gave good advice’) could inform user choice more directly than complicated clinical measures (Productivity Commission, 2017a). Outcome-related information can be translated to metrics that would be of use to individuals, such as star ratings reporting performance against select criteria (Productivity Commission, 2017a).

Clinical and patient reported outcomes support VBHC at a range of levels (Australian Institute of Health and Welfare, 2018a, Productivity Commission, 2017a).

At a patient level outcomes data:

- **Influences the patient–clinician interaction** by enabling the clinicians to understand on what is important to patients and how their lives might be affected by their health condition.
- **Creates a safe space** for prompting discussion between clinicians and the patients and supports shared decision making about treatments.
- **Provides evidence-based information** on expected outcomes at specific times after a health intervention at an aggregated level (for example, at 3 months, 6 months and 12 months post intervention). This information could help patients to make informed choices about their care.

At a clinician level outcomes data:

- **Enables performance reporting and benchmarking** by individual clinicians and health care services to share best practices which leads to better outcomes. Service providers can use information to compare the overall outcomes achieved for their patients with those achieved by others, when adjusted for relevant patient characteristics and also to review systems, processes and approaches to care where poorer outcomes have been observed.

At a system level outcomes data:

- **Incentivise providers** to prioritise activities that are proven to be clinically- and cost-effective, such as targeted preventive care.
- **Improves health care decision making**, resourcing allocation and tying financial incentives to outcome measures.

10.2 Reporting on outcomes promotes better value

The outcomes that matter to patients are multi-dimensional and are beyond just the clinical domains, including the socio-economic and cultural determinants (Porter and Teisberg, 2006). The health sector first needs to have the capacity to report on health outcomes before the sector can feasibly be funded based on health outcomes (Australian Healthcare and Hospitals Association, 2017).

Assessing the value of care provision requires a standard set of health outcome measures that can facilitate uniform recording and reporting of PROMs (Productivity Commission 2015a). In 2012 ACSQHC and IHPA commissioned a review of the use of PROMs in Australia. Findings suggest that PROMs are an emerging method of assessing outcomes in Australia and are not yet embedded in routine measurement at regional, jurisdictional or national level (Thompson et al., 2016). This limits the ability of the health system to provide high value care and make ongoing improvements in funding reforms, policy renewal and quality of health services.

The International Consortium for Health Outcomes Measurement (ICHOM)

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

The need for health systems to promote high-value care, adapt to new technologies and innovation, reorient towards a more patient-centred care and enhance collaboration between governments,

patient groups, the industry, health worker representatives and payers has been recognised by the Organisation for Economic Cooperation and Development (OECD) (OECD Health Ministerial Meeting, 2017). In collaboration with ICHOM, the OECD are working to globally standardise PROMs measurement and collection in key disease areas to support patients, clinicians and policy makers (OECD Health Ministerial Meeting, 2017). The value and outcomes of health care activities could be significantly enhanced by introducing a nationally coordinated technical and governance arrangements for improved PROMs data collection through digital data infrastructure (Australian Institute of Health and Welfare, 2018a).

In partnership with ICHOM, the Harvard School of Dental Medicine and the Hospital Contribution Fund (HCF) Research Foundation, DHSV has funded the development of the standard set of outcome measures for oral health.

DHSV is using these outcome measures to analyse the effectiveness of its services and prioritise high-value care (that contributes to patient oral health outcomes, and are cost-effective), while eliminating low-value care (that do not improve health outcomes and are less cost-effective).

10.3 Paying for outcomes

Linking payments to outcomes does not necessarily guarantee health improvements for patients (Productivity Commission, 2015). Similarly a focus on incorrect metrics can lead to perverse outcomes (Productivity Commission, 2017a).

The NHS, in England has developed a dental outcomes framework that incorporates both oral health outcomes and patient-reported outcomes (Department of Health, 2011). Australian governments should use a consistent set of outcome measures to develop a nationally consistent outcomes framework, similar to the NHS. An outcomes framework would assist in improving accountability, promoting the sharing of best practices across jurisdictions, and aid system-level outcome evaluations (Productivity Commission, 2017a). Aligning PROMs and clinical outcomes in the outcomes framework would also improve the alignment of provider incentives with those of their patients (Productivity Commission, 2017a).

Payment for outcomes or performance measures offer greater value if they strengthen key elements of health system governance, such as a greater focus on system objectives, more accountability and performance feedback loops (Cashin and Borowitz, 2014). Emphasis should not be on the performance measures and incentive payments alone, but rather on using comprehensive approaches where the indicators and incentives play a supportive rather than a central role (Cashin and Borowitz, 2014). For example, assessing cost-effectiveness by examining the extent to which the inputs used to produce a given output (productive efficiency) does not indicate whether the right mix of health service outputs is being produced (allocative efficiency), or whether the right decisions are being made about how to use resources to maximise health and wellbeing over time (Productivity Commission, 2015).

Targeted programs across OECD countries have attempted to develop payment models that link providers' pay to the quality of care they deliver and outcomes for patients (OECD, 2016). In 2012, nearly two-thirds of OECD countries reported having at least one performance payment scheme in place across a growing range of health care settings, including primary care, outpatient specialist services and hospital services (OECD, 2016). Payment models from Sweden, Portugal and the UK

have all illustrated the feasibility of applying an outcomes payment scheme to public dental services (Swedish Society of Spinal Surgeons, 2014; OECD, 2016; Steele, 2014).

11 Improving patient experience

In a VBHC system, it is essential to understand the health care experience from a patient's perspective.

The systematic measurement of patient experience serves multiple purposes. In addition to contributing to financial payment in VBHC payment programs, measuring patient experiences improves transparency around patient experience ratings, so that patients and consumers can make more informed decisions regarding their health care (Australian Commission on Safety and Quality in Health Care, 2017).

Patient-reported experience measures (PREMs)

Patient-reported experience measures (PREMs) are used to obtain patients' views and observations on aspects of health care services they have received for example, patient–clinician interaction (such as whether the clinician explained procedures clearly or responded to questions in a way that they could understand) (Australian Institute of Health and Welfare, 2018a). PREMs collect information about the experience of health services, and the outcomes of health services, as described by patients (Australian Institute of Health and Welfare, 2018a).

Measuring patients' experiences of their treatment and care is an increasingly important focus of safety and quality efforts (Australian Commission on Safety and Quality in Health Care, 2017).

National reporting requirements under the National Health Reform Agreement (Steering Committee for the Review of Government Service Provision 2013) and the Performance and Accountability Framework include indicators of patient satisfaction and experience (Australian Commission on Safety and Quality in Health Care, 2017).

11.1 Lack of patient reported experience data

In Australia, there is no national or state level assessment of recent patient's experiences that can be used for outcomes or quality improvement for the dental and general health sectors.

Data from the Australian Bureau of Statistics national patient experience survey (ABS 2017) cannot be used to assist health service organisations improve patient care, as results cannot be attributed to particular health care organisations or episodes of care (Australian Commission on Safety and Quality in Health Care, 2017). The data collected through the patient experience survey is however extensively used in national health performance assessment, for example, as reported in the *Report on Government Services* (Steering Committee for the Review of Government Service Provision, 2018). Nevertheless, this data, cannot be specifically used to support service improvement because it relates to all relevant services provided in the last 12 months and not necessarily to experiences with a single service provider or organisation.

11.2 Improving the experience of patients accessing health services

There are a number of other standardised PREMs developed for general use across health services. Examples include the NHS surveys (Picker Institute Europe, 2018), the Canadian Patient Experiences

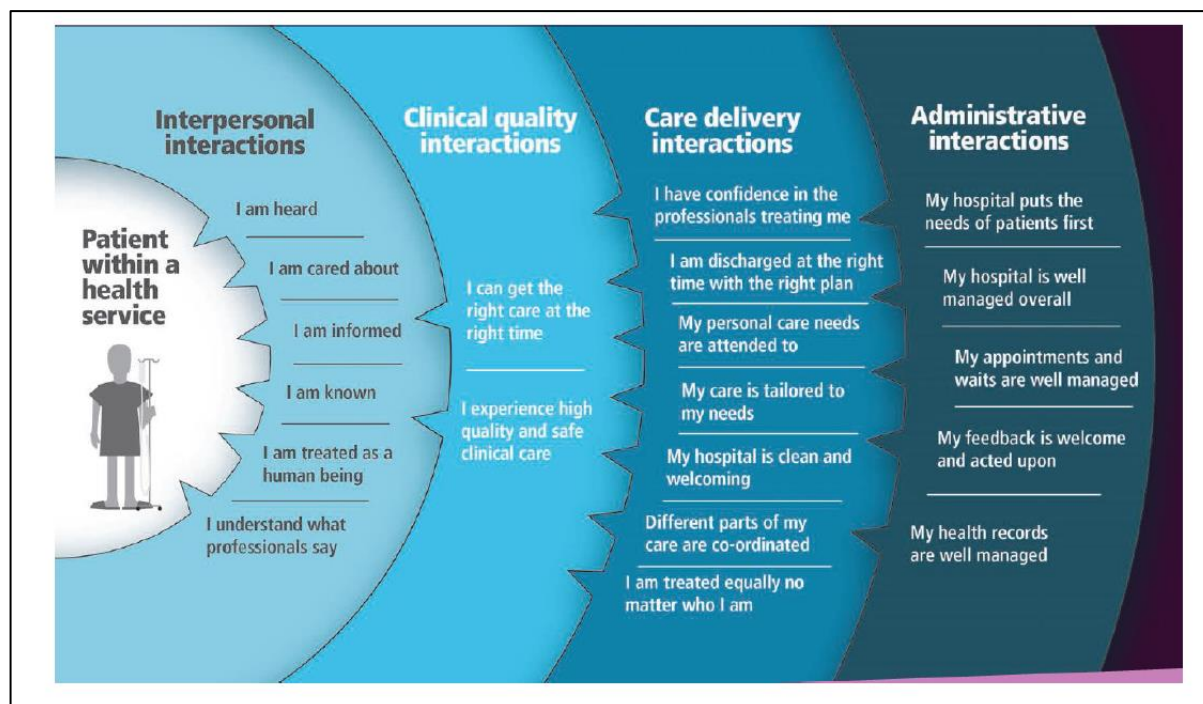
Survey (Canadian Institute for Health Information, 2018) and the Victorian Health Care Experience Survey (Victorian Department of Health and Human Services, 2017).

In Australia, to track patient experiences effectively, a validated and nationally consistent measurement tool is needed. The Australian Health Ministers' Advisory Council (AHMAC) has recommended the development of a small set of non-proprietary patient experience questions relevant to the Australian context (Australian Commission on Safety and Quality in Health Care, 2017). ACSQHC has developed the Australian Hospital Patient Experience Question Set (AHPEQS) based on the aspects of treatment and care that patients in Australian hospitals and health care services have reported to be most important to patients (Australian Commission on Safety and Quality in Health Care, 2017). The AHPEQS dimensions of patient experience is captured in Figure 3.

The Australian Hospital Patient Experience Question Set (AHPEQS)

AHPEQS allows hospitals and health care services to listen to patients and use their experiences to help improve patient care. The AHPEQS is a set of 12 questions about a person's recent experience in a private or public hospital or day procedure service, regardless of their condition or the type of treatment they receive (Australian Commission on Safety and Quality in Health Care, 2017). The questions cover a range of aspects of their care and experience, such as patient involvement, responsiveness to needs, clear communication, patient safety, and harm and distress (Australian Commission on Safety and Quality in Health Care, 2017). The questions are based on focus group discussions with Australian health care consumers, who identified the key dimensions seen to be important influences on the quality of their experience.

Figure 3: Dimensions of patient experience (Australian Commission on Safety and Quality in Health Care, 2017)



The AHPEQS provides a vital resource for health service providers in both public and private sectors to capture patient experience. ACSQHC has started working with the state and territory governments and with the private sector to develop detailed specifications for the nationally consistent administration of the patient experience survey (Australian Commission on Safety and Quality in Health Care, 2017). It is intended that this administration will be supported by the Australian Health Performance Framework, a single monitoring framework for nationally consistent measurement, which prioritises the reporting of indicators derived from patient-reported experience and outcome measures (Australian Commission on Safety and Quality in Health Care, 2017).

11.3 Improving the experience of patients on the waitlist

There have been growing concerns about inequities in timely access to dental care, particularly, the length of time people have to wait to access state and territory-funded public dental services (Gussy et al., 2013). Waiting time is considered as one of the key factors in limiting patient experience and resulting in poor experiential outcomes (Australian Institute of Health and Welfare, 2018b). People who seek public dental care wait at least a year in most states and territories, and some people wait several years (Duckett et al., 2019). Without timely access to care, oral health of patients can deteriorate while they wait to receive care (Productivity Commission, 2017a).

While waiting times for dental care is considered to be one of the main reasons for patient dissatisfaction (Chu and Lo, 1999, Esa et al., 2006), it appears to be well-tolerated, as long as the waiting time remains reasonable (Tuominen and Eriksson, 2012). For example, it has been reported that people who waited less than 3 months experienced less dissatisfaction compared to those who waited for more than 3 months (Chu and Lo, 1999, Esa et al., 2006).

Although the waiting period is dependent on a range of contextual factors such as, demand for access, number of people waiting and availability of workforce, the waiting experience for people can be improved by appropriate oral health promotion and prevention interventions. This will enhance self-care and professional support for people on the waitlist and will ensure their condition does not deteriorate while waiting.

Capturing patient experience by measuring the 3Cs: Capability, Comfort and Calm

Patient experience groups is an important way to bring together patients who have similar conditions to talk about the experience of living with the condition (Wallace and Teisberg, 2018). The experience groups help understand patient experiences, which is different from focus groups that seek patients' solutions, opinions or ideas.

Teisberg proposes 3Cs (Capability, Comfort and Calm) to capture what matters most to patients (Wallace and Teisberg, 2018).

- **Capability:** which measures the functional status;
- **Comfort:** which measures relief from physical and emotional pain; and
- **Calm:** which measures the extent which patients continue life during care.

Case Study 2: DHSV and the voice of consumer workshops

To understand the ‘lived experiences’ of public dental service users in Victoria, DHSV has embraced patient experience engagement through a series of workshops called “*The Voice of the Consumer*”. Outcomes of which have contributed to ensuring the redesign of DHSV’s services is respectful of, and responsive to, what is valued by consumers (Palmer, 2018).

Through these workshops, DHSV has identified considerable alignment in the service outcomes and experience consumers value. DHSV has gained considerable learning about the:

- application of guiding principles for engagement with vulnerable communities; and
- processes and capabilities necessary to foster a respectful, safe and constructive consumer engagement experience.

Through the ‘Voice of Consumer’ focus groups DHSV gained significant insight not only into what consumers expect from services, but also what they value from their experiences using dental services. Analysis of the responses from consumers was understood to fall within five key value domains:

1. Access
2. Safe Care
3. Belonging
4. Recognition
5. Partnership

These value domains not only provide an in-depth understanding of the health care system attributes that matter most to consumers, but also provide a framework for enabling service transformation to improve both health outcomes and experiences for consumers.

The first two value domains, ‘Access’ and ‘Safe Care’ can be best understood as foundational ‘hygiene’ factors that consumers believe they are entitled to, and that the health care service has primary responsibility for delivering.

The remaining three value domains of ‘Belonging’, ‘Recognition’ and ‘Partnership’ are grounded in trust, respect and collaboration, and reflect the attributes that consumers value most highly, and are essential for person-centred care.

Fulfilment of each value domain is a prerequisite for the next value domain in the sequence in order to deliver a service where consumers and clinicians are partners in designing and delivering care that improves consumer health outcomes and experiences.

DHSV believes that this overall process of creating opportunities within health care systems to capture the ‘Voice of Consumers’ will enable delivery of a health care service aligned with and responsive to consumer needs.

12 Prevention at the individual and population level

A fundamental aim of any health system is to prevent disease and reduce ill health (Australian Institute of Health and Welfare, 2018a). Most oral diseases are preventable and will lead to better oral health outcomes if prevention is offered in timely fashion (Productivity Commission, 2017a).

There is a high prevalence of preventable oral disease among Australians leading to costly consequences to the government, health care systems and individuals (Australian Healthcare and Hospitals Association, 2017). However, due to long waiting periods for urgent services, the current public dental funding model does not allow preventative care to be offered within the system (Productivity Commission, 2017a).

To enable effective prevention within public dental sector, models of care should emphasise primary (for example, oral health promotion and population health approaches), secondary (for example, minimal intervention dentistry and preventive clinical interventions) and tertiary (for example, oral rehabilitation) prevention approaches (Council of Australian Governments Health Council, 2015).

12.1 Failure of the current funding model to prevent oral diseases

In 2015-16, over 67,000 Australians were hospitalised for potentially preventable dental conditions, accounting for 80,000 bed days adding significantly to the overall health care costs to the government (Australian Institute of Health and Welfare, 2018a).

Hospitalisations for conditions that potentially could have been avoided if timely and adequate non-hospital care had been provided adds significantly to the overall health care costs (Productivity Commission, 2017b). In 2016-17, a significant proportion of these costs (58%) was paid directly by individuals as out-of-pocket costs; with individuals spending an average of \$239 on dental services over the 12-month period (Australian Institute of Health and Welfare, 2018a). This reliance by the government, on individuals to fund their own costs has created financial barriers to dental care, particularly for families on low incomes (Duckett et al., 2019). This can lead to people delaying dental treatment until pain is experienced and seeking emergency hospitalisation for preventable dental conditions resulting in poor health outcomes and higher health care costs to the government (Council of Australian Governments Health Council, 2015).

Over a period of time, delays to seeking treatment increase the prevalence of oral diseases in the community and people seeking emergency care for preventable dental conditions adding budget strain to the broader health system (Duckett et al., 2019).

12.2 Prevention is more cost-effective

Preventive care has been generally accepted as a cost-effective way to deliver services as it can avoid the onset of some oral diseases and the subsequent costs for individuals, governments, and the community (Productivity Commission, 2017a). However, public dental services are funded to treat disease and not to prevent them in the first instance. While patients with urgent care needs should continue to be prioritised for treatment, long-term reform is needed to shift the focus of the system towards providing preventive dental care for patients at high risk of oral disease (Victorian Auditor-General's Office, 2016).

A prevention focused system would represent a more cost-effective way to deliver public dental services and over time will reduce the burden of oral disease in the community. Targeted investment in preventive dental care is likely to have long-term benefits to individuals, governments and the wider community from preventing the onset of oral disease (Productivity Commission, 2017a).

Several public patients in Australia start on public dental waiting lists seeking preventive or restorative treatment but become emergency cases by the time they receive treatment (National Advisory Council on Dental Health, 2012b). Getting the balance right between prevention and treatment is a fundamental shift from the way public dental services are currently funded, delivered and overseen (Victorian Auditor-General's Office, 2016).

A population health prevention approach is one of the guiding principles of Australia's National oral health plan (Council of Australian Governments Health Council, 2015). A population health approach to preventing oral disease improves the health of the entire population and to reduce health inequities among population groups. Such an approach recognises the wide range of systemic factors including social, economic, cultural and environmental determinants that influence the development and progression of oral disease (Victorian Auditor-General's Office, 2016).

Improving oral health through population level prevention in Victoria

Poor oral health can track strongly from childhood to adulthood, early detection and prevention may have lifetime benefits for individuals and, potentially, for the health system (Productivity Commission, 2017a).

To improve the oral health outcomes for children through prevention and early intervention including access to oral health care and reduce preventable hospitalisations due to dental conditions the Victorian government has committed \$395.8 million to provide free dental check-up, and treatment for school children through the school dental program (Andrews 2018).

DHSV will provide free dental care at all public primary and secondary schools over the next four years across Victoria. The program will see approximately 600,000 children attending government primary and secondary schools which will include approximately 1,500 locations across Victoria utilising 250 vans operating by 2021.

DHSV will be delivering this program as part of its VBHC initiative supporting families to improve access, and oral health outcomes for their children. A significant number of preventive services will be offered through this initiative to bring down the burden of oral diseases.

12.3 Funding for prevention

Enhancing preventive measures across all health sectors is seen as one of the essential strategies to ensuring the future sustainability of health systems and funding models (World Health Organisation, 2016). Funding to enhance prevention within the public dental system will reduce the overall burden of oral disease and improve long-term oral health across the population (National Advisory Council on Dental Health, 2012b).

Funding for prevention needs a set of standardised and measurable health outcomes which will drive the design and implementation of effective preventative interventions and also provide the data necessary to remunerate those involved in the delivery of such interventions (King's College London, 2019).

The costs and benefits of preventing and treating oral disease occur over a lifetime and the benefits to an individual's oral health outcomes occurring as a result of preventive interventions may occur with a long lag time (Productivity Commission, 2017a). Estimates of the long-term costs and benefits of prevention interventions are therefore challenging and relatively few evaluations consider both

the benefits and costs of an intervention (Productivity Commission, 2017a). Patient risk status is a good way to measure more immediate outcomes and to reward for prevention. Risk status in oral health reflect factors that can be managed through appropriate primary, secondary and tertiary prevention measures (King's College London, 2019). For example the management of habits such as high sugar, tobacco use and alcohol consumption will produce wider benefits to overall health (King's College London, 2019). Measuring risk levels therefore can be good intermediate outcome measures for the governments as it can show direct benefit for the patients, before obtaining longer term data on health outcome gains (King's College London, 2019).

Making sustainable savings means transforming services to make them more effective at preventing oral health problems in the first instance (Victorian Auditor-General's Office, 2016). For example, the NHS introduced a blended payment model to balance the activity and capitation drivers and support the prevention and treatment needs of patients (Steele, 2014). A robust integrated data system is needed to capture accurate and timely information for a prevention-focused payment model to succeed.

The COAG Health Council identified the need for better integration of public dental services and the broader health system (Council of Australian Governments Health Council, 2015). Many members of the non-oral health workforce including, for example, GPs, maternal and child health nurses, other care workers and educators in the aged care, as well as workers in the disability and early childhood sectors have more regular contact with the population than dental practitioners (Council of Australian Governments Health Council, 2015). These workers have an important role in oral health promotion, undertaking prevention activities, referring patients to dental services and offering dental examinations as part of general health and wellbeing checks.

13 Paying for optimal workforce skill mix that optimises efficiency gains in terms of value and cost

Labour costs comprise a large share of health care expenditure and making better use of health workforce skills and competencies could lead to large efficiency gains (Productivity Commission, 2017a). Workforce skill mix is a term that is used to describe a model of care where the whole of the clinical team is utilised in delivering service activity (Gallagher and Wilson, 2009). For example, evidence shows 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 (Productivity Commission, 2017a). It is therefore important that training and professional development for the oral health workforce must reflect the competencies required to address the needs of the populations and efficiently and effectively use the skills of the whole oral health workforce (Council of Australian Governments Health Council, 2015).

To deliver VBHC, which encompasses an integrated and multidisciplinary workforce model, ensuring that the capacity of the existing and future oral health workforce is able to work and engage with the broader workforce is essential (Council of Australian Governments Health Council, 2015).

13.1 Lack of adequate use of workforce skill mix in public dental sector

Utilising the right workforce skill mix ensures that “the right number of people, with the right skill sets, are in the right place, at the right time, to provide the right services to the right people” (Birch, 2002).

The cost-effectiveness of the public dental workforce is a key consideration in a public health system with competing needs and limited resources (Victorian Auditor-General's Office, 2016). To achieve a cost-effective system, the most resource-intensive staff (dentists) should focus on the most complex and difficult types of services. The least expensive staff should carry out other services that they can be trained to deliver safely and competently, within their respective scope of practice (Victorian Auditor-General's Office, 2016).

A workforce predominantly made up of dentists and solely using dentists, rather than other oral health professionals, is not a cost-effective method of delivering preventive programs such as oral health education and support to better manage oral health (Victorian Auditor-General's Office, 2016).

In primary health care, nurses have been shown to be as effective as doctors for the more common and simpler aspects of care, dramatically shifting the mix of team members delivering care (Sibbald et al., 2004). Indeed, for some ongoing and urgent physical complaints and for chronic conditions, trained nurses, such as nurse practitioners, practice nurses, and registered nurses, provide equal or possibly even better quality of care compared to primary care doctors, and achieve equal or better health outcomes for patients (Laurant 2018). It has also been suggested that 25% to 70% of the work undertaken by doctors could be undertaken by nurses (Richardson et al., 1998). These findings suggest that nurses could play a key role in health promotion and the routine management of chronic diseases in a more cost-effective manner.

In the dental sector, the use of a predominantly non-dentist based oral health-care workforce, such as dental hygienists and therapists, to deliver complementary oral health care to that of dentists has been successfully established in a number of countries (Friedman, 2011).

In Victoria, the Drugs, Poisons and Controlled Substances Regulations has been amended to allow appropriately qualified and trained dental assistants working in public sector to apply fluoride varnish (to prevent tooth decay) under the prescription of a registered dental practitioner (Drugs, Poisons and Controlled Substances Amendment 2018).

Drawing on the successes of such workforce reforms and initiatives from other countries, Australia must adopt similar workforce reforms across the dental sector in its entirety.

13.2 National workforce reform strategy

Enabling the continuous development of a flexible, responsive and sustainable Australian health workforce is a national priority, however there is no shared vision documented for what such a workforce would look like (Australian Healthcare and Hospitals Association, 2017).

A national health workforce reform strategy should be developed that goes beyond the adequacy, quality and distribution of the workforce as it currently exists, to pursue outcomes-focused and value-based changes in scopes of practice, coordination of education, regulation and funding for

both regulated and unregulated practitioners, and across health service environments (Australian Healthcare and Hospitals Association, 2017).

13.3 Aligning financial incentives to the right workforce skill-mix

Aligning remuneration incentives for the dental workforce skill-mix will play an important part in delivering services that are fit-for-purpose and based on quality (Sibbald et al., 2004). In a team-based setting the cost of service delivery can be reduced by making better use of the skill-mix within oral health workforce (Victorian Auditor-General's Office, 2016).

However, reliance on funding solely for treatment, limits workforce innovation in service provision and does not encourage an efficient workforce mix for delivering a preventive approach (Victorian Auditor-General's Office, 2016).

According to self-reported data from the Victorian community dental agencies, dentists make up about 61 per cent of the total effective full-time Victorian public dental workforce (Victorian Auditor-General's Office, 2016). This shows that stronger incentives are required to promote and encourage other members of the dental workforce to join and be retained in the public dental sector to complement the role of dentists. The routine collection of workforce related data to inform workforce analysis and planning will be important to implementing the right workforce skill mix as part of funding reforms.

DHSV as part of its VBHC initiative is trialling and modelling the cost-effectiveness of using the right workforce skill-mix compared to general workforce model where specific clinicians are overrepresented.

The use of mixed workforce (dentists, oral health therapists, dental assistants, oral health educators, care coordinators, specialists, prosthetist and patient coordinators) where each person works to their full scope of practice, means that services are able to be provided more cost-effectively and clinicians are able to make best use of their skills.

As dentistry moves from a cure to care culture of a VBHC system, skill-mix models will be increasingly implemented (Brocklehurst and Tickle, 2011) and the whole of the dental team should be utilised to deliver primary, secondary and tertiary prevention in an integrated patient-centred model. The provision of incentives within funding systems and social acceptability are amongst the key determinants in producing a service that is responsive to need, improves access and delivers equity (Brocklehurst and Tickle, 2011).

14 Conclusions and recommendations

Given the relatively high level of expenditure for oral health care in Australia, policy makers must consider the quality of health care and outcomes achieved. Current funding strategies that focus on volume-based treatment will lead to greater health inequality for Australians and health care demand will undermine public finances, unless spending becomes more effective and offer the funder greater value for money (OECD, 2010a). This will require a new approach to funding reforms that allows costs to be accurately measured and compared to health outcomes. Re-orienting the current fee-for-service public dental funding model to support outcomes and value within the

available Commonwealth resources and current funding arrangements between the Commonwealth, state and territory governments will improve the stewardship provided by governments.

Determining how to use the total available resources in order to improve outcomes in the most efficient, effective, equitable and sustainable way is fundamental to the success of potential public dental funding formula and achieving value for money (Council of Australian Governments, 2018, Croydon Council, 2012). The choice of payment system is key for efficient resource use in health care provision (Woods, 2013). The payment system must be able to support the attributes of VBHC system where health is maximised and care is: patient centred, efficient, safe and effective, timely and accessible, accountable, innovative and coordinated across providers and facilities (Woods, 2013). For a successful payment model a robust data infrastructure that captures outcomes, experience, safety and quality, prevention, and workforce skill-mix data is required. Maximising on allocative efficiency and cost reduction without regard to the outcomes achieved, would lead to false savings and potentially limit effective care and value for money (Porter, 2010).

A shift to value-based health care will require new processes for setting and managing payment for public dental services, including what the amount of specific payments should be and how to incorporate the full cost of providing public dental services within the funding model. Designing the most appropriate payment system requires an understanding of the goals and then the right blend of the different payment methods. Shifting the current health care system to a VBHC model will provide a number of benefits (Table 2) (Porter and Kaplan, 2016, Porter and Lee, 2013, Productivity Commission, 2017a):

Table 2: Benefits of shifting to a VBHC model

Benefit	Explanation
Better health outcomes	By defining value around patient health outcomes, value-based health care incentivises an improvement in service quality. The change in health outcomes is monitored for both individuals and communities, and performance is measured based on the improvement in patient outcomes.
More appropriate use of health services	Value-based health care seeks to reduce the inappropriate use of health services, such as over-servicing, while promoting appropriate utilisation such as preventive services. This helps to improve long-term patient health outcomes, and to reduce health system costs.
Higher quality services	Clinicians are rewarded for providing services that deliver value to patients. Most service providers regard increased patient satisfaction with health plans and health care as an important final outcome. In a value-based funding system, this serves as an effective proxy for quality of service delivery. Through benchmarking and sharing of best practice, the performance of the entire sector can be increased.
Better use of health workforce	Encourages use of the most appropriately skilled clinicians. The use of mixed workforce (for example, dentists, hygienists and assistants) where each person works to their full scope of practice, means that services are able to be provided more cost-effectively and clinicians are able to make best use of their skills.

More cost-effective	Value-based health care incentivises providers to reduce expenditures associated with service delivery in order to improve value. Beyond the individual provider level, an improvement in patient health outcomes may reduce long-term community health costs for society.
Greater access to services	Value-based health care encourages providers to maximise the value of the services they provide, which enables greater access to public dental services and the treatment of the greatest number of people, given the finite resources available.

14.1 Recommendation 1: The Commonwealth and State governments should re-orient the current fee-for-service public dental funding model to a blended funding model with risk-adjusted capitation base and outcome-based components

Re-orienting the focus of the current funding model to blend incentives that support high value care and health outcomes will address the weaknesses associated with single-base funding model, such as fee-for-service. This will enable the health care system to deliver patient-centred care, manage costs effectively and optimise the use of finite public health resources.

Health spending itself is insufficient to improve value and outcomes. For example, high spending does not necessarily equate to good health outcomes. Identifying the right blend for the payment systems that supports the implementation of VBHC is vital. The IHPA should work with the Commonwealth, state and territory governments to identify the right blend for public dental funding reforms that encompasses an efficiency and outcomes component.

The Commonwealth should support funding blends to be modelled, trialled, tested and evaluated at a range of rural and metropolitan sites catering to different population segments before a staged roll-out. Developing pilot programs with inbuilt scalability to larger geographical areas with different patient segments will allow for testing the operationalisation of the funding model under different circumstances.

14.2 Recommendation 2: The Commonwealth should create a national policy authorising environment that will enable a blended public dental funding model to be implemented

Australia lacks national-level policies that enable the transition towards VBHC. Harmonisation of the complex intersection of policy and funding at the national and state levels by having a nationally unified policy environment will produce maximum cost efficiency gains in terms of value and outcomes for the patients, government and health system.

14.3 Recommendation 3: The blended funding model needs to be developed in consideration to the below key elements in designing the capitation and health outcome payment components

This should include:

- a risk-adjusted model to determine pricing and funding for outcomes. The Commonwealth should commission IHPA, to develop a costing standard for public dental services including setting the efficient prices in consultation with state and territory Governments;
- high cost items that has a component for laboratory fees (items such as dental prostheses), including tying specific patient outcome measures to funding allocations that does not incentivise over-servicing;
- activity payments for emergency and more complex treatments where treatment needs are less predictable, therefore cannot be readily covered within the capitation payment; and
- a nationally standardised and coordinated approach to the collection and use of clinical, service, and patient reported experience and outcome measures across the whole public dental health system. This will require comprehensive and enhanced data collection systems with strong IT infrastructure.

14.4 Recommendation 4: Funding reforms should consider elements in its design that blend incentives for maximising value for money in public investments and achieving better outcomes for patients, funders and health care system

These include:

- Improving value for money by assessing the value of health care investments and measuring if the benefits of spending exceed the costs;
- Limiting unwarranted variation and disinvesting and limiting low-value services that does not improve health outcomes;
- Improving safety and quality and linking outcome measures to payments incentives.

14.5 Recommendation 5: Payment models must be tied to a set of standardised and measurable patient-centric health outcomes, such as the patient reported outcome measures (PROMs)

Improving oral health outcomes that matter to patients is the strongest predictor of a high-value health care system, and, the measure of a successful funding formula depends on its ability to enable the health care system to achieve the best possible health outcomes. Simply linking payments to outcomes does not guarantee improvements for patients, to measure the right outcomes, payment models must be tied to a set of standardised and measurable patient-centric health outcomes, such as the patient reported outcome measures (PROMs).

Governments should introduce a standard set of PROMs such as those developed by the International Consortium for Health Outcomes Measurement (ICHOM) to develop a nationally consistent outcomes framework that will aid in improving accountability, allocation of resources, sharing best practices and system-level outcome evaluation. Payment for outcomes offer greater value if they strengthen key elements of health system governance such as a greater focus on health system objectives, greater accountability and performance feedback loops. The Commonwealth

should offer financial incentives to providers for introducing standardised tracking of health outcomes and costs of care. However emphasis should not be based on performance measures and incentive payments alone, but also on using complementary approaches where the indicators and incentives play a supportive, rather than a central role.

14.6 Recommendation 6: Implementation of the blended funding model will require the development of nationally consistent public dental outcome metrics to support evidence-informed policy decisions

These includes:

- Developing an agreed national minimum dataset and data dictionary for oral health. This will enable to capture nationally consistent and comparable outcomes data that can inform ongoing improvements in funding reforms, policy renewal, outcomes and quality of health services.
- Developing standardised tracking of health outcomes and costs of care longitudinally at multiple time points using appropriate costing methodology such as time-driven activity-based costing for the cost component. The costs must reflect the actual costs of the care delivered to a patient over the full cycle of care.
- Embedding outcomes within performance frameworks, standardisation of performance reporting and publication of outcome measures.

14.7 Recommendation 7: The Australian Hospital Patient Experience Question Set (AHPEQS) developed by the Australian Commission on Safety and Quality in Health Care must be adopted nationally to track patient experience

This should be supported by Australian Health Performance Framework, a single monitoring framework for capturing nationally consistent measurement of PREMs and PROMs indicators. Patient experience must be embedded as part of the feedback loops which connect patients, clinicians and outcomes of care.

Waiting time is considered as one of the key factors in limiting patient experience and resulting in poor experiential outcomes. Although the waiting period is dependent on a range of contextual factors such as, demand for access, number of people waiting and availability of workforce, the waiting experience for people can be improved by appropriate oral health promotion and prevention interventions. This will enhance self-care and professional support for people on the waitlist and will ensure their condition does not deteriorate while waiting.

14.8 Recommendation 8: The Commonwealth and state governments should increase the efficiency and effectiveness of public dental sector through a national workforce reform strategy that builds the capacity of public dental services to effectively respond to pricing signals

Labour costs comprise a large share of health care expenditure, therefore making better use of health workforce skills and competencies could lead to significant efficiency gains. Limited resources within the public dental sector should be used effectively with all parts of the health system and workforce working together to eliminate waste, reduce unwarranted variation, remove

inefficiencies, focus on prevention and early intervention and limit low-value care. This should be complemented with the development of a national workforce reform strategy that:

- enables all members of the dental workforce to work to their top scope of practice;
- allows appropriate workforce skill-mix which maximises the use of skills and creates a co-ordinated team-based learning environment that will optimise efficiency gains in terms of value and cost; and
- provides direction on outcomes-focused and value-based modifications or expansions in scopes of practice including coordination of regulation and funding to reflect this.

14.9 Recommendation 9: Health services should routinely collect workforce related data to inform workforce analysis and planning

Implementing the right workforce skill mix as part of the funding reforms requires the comprehensive use of workforce analytics that will enable advanced data analysis and development of right metrics to determine workforce outcomes, performance measurement and improvement.

14.10 Recommendation 10: The state and territory governments should routinely trial and evaluate prevention initiatives and explore options to strengthen incentives for cost-effective investment in preventive health to be considered as part of a comprehensive review of the health care system

Most oral diseases are preventable and will lead to better oral health outcomes if prevention is offered in a timely fashion. Payment models that focuses on prevention will shift its focus from treating existing diseases to rewarding targeted preventive care and early intervention that will improve the oral health of users and avoid significant costs resulting from the onset of oral disease

Targeted investment in preventive dental care is likely to have long-term benefits to individuals and governments. Making sustainable savings means transforming services to make them more effective at preventing oral health problems in the first instance

Getting the balance right between prevention and treatment is a fundamental shift from the way public dental services are currently funded, delivered and overseen. The state and territory governments should routinely trial and evaluate prevention initiatives and explore options to strengthen incentives for cost-effective investment in preventive health to be considered as part of a comprehensive review of the health care system.

issues brief

Table 1A: Overview of funding models including their advantages and disadvantages of each model (Dental Health Services Victoria and Deloitte Access Economics, 2017)

	Funding model	Advantages	Disadvantages
Block funding	Block Grants Healthcare providers are allocated a set dollar amount periodically for a specific purpose. The amount of funding is independent of the number of patients seen by the provider.	<ul style="list-style-type: none"> The key advantage is simplicity. Grants can be made without the need to measure performance. This makes funding allocation simple and administrative costs low. The use of funds is largely at the recipient's discretion and the provider is able to direct funding to areas or initiative which it sees as the highest value. 	<ul style="list-style-type: none"> Providers do not have a financial incentive to increase the quality of care, reduce costs or treat more patients. Funding may not be allocated in any systematic way and may not be equitable based on patient needs. Increased levels of oversight may be required to ensure proper and effective use of funds.
	Capitation Annual fees are paid to providers for each patient they have enrolled. Payments are made in return for providing all of the necessary services for the whole year.	<ul style="list-style-type: none"> After the funding formula is established, the costs of determining funding allocations are low. Provides an incentive for practitioners to invest in preventive treatment to reduce costs over the enrolment period. Dentists are incentivised to work as a broader team, relieving dentists of work that can be done by others. 	<ul style="list-style-type: none"> If patients are not enrolled for long enough periods, practitioners have an incentive to maximise client intake and minimise costs, potentially compromising quality of care and health outcomes. It can be difficult to evaluate the performance of providers. Unweighted capitation is unlikely to distribute funding equitably and may lead to providers cherry-picking patients with lower needs.
Per unit funding	Fee for Service Funding is allocated to providers based on the number of treatments/services they deliver, usually on the basis of a set unit cost.	<ul style="list-style-type: none"> Activities undertaken by dental practices can be easily classified, leading to clarity in the correlation between services provided and funding. Practices are incentivised to reduce the cost of their treatments to maximise their gain from funding leading to efficient provision of services at a unit level. Funding model is well established and understood by practitioners. 	<ul style="list-style-type: none"> Providers are encouraged to engage in complex and time intensive procedures. Under supply of preventive treatments and neglect of chronic health problems. Providers are not required to collect or report on the outcomes of treatments as part of the funding model.
	Activity-Based Funding (ABF) Funding is tied to episodes of care. An episode of care includes all of the services required to treat the patient, such as surgery, pathology, nursing and medicines.	<ul style="list-style-type: none"> Leads to increased efficiency as providers are funded based on the total service provided, and if they can deliver services more efficiently they are able to retain the profits. Activities undertaken by dental practices can be easily classified, leading to clarity in the correlation between services provided and funding. 	<ul style="list-style-type: none"> High upfront administrative costs are incurred to develop a schedule of activities at the efficient prices. Rewards the volume of activity over outcomes, and the funding of activities may not align with patient-centred care. Reduced flexibility where funds cannot be redistributed between activities.
Outcome based funding	Payment by Result Funding is directly linked with the achievement of specific performance targets, such as the type and number of services provided to a specific standard.	<ul style="list-style-type: none"> Encourages a more holistic approach to providing care and a more efficient use of the health workforce. Incentivises providers to achieve lower costs and/or higher quality through better organising the whole episode of care. Encourages providers to shift their service provision towards higher value activities and away from low value activities. 	<ul style="list-style-type: none"> Higher degree of complexity, significant start-up costs and ongoing operational costs to monitor results. Cost variation may not be accounted for, leading to pricing that has a diverging effect on providers. Incentive to provide the funded activity may compromise the provision of the most appropriate treatment.
	Value-Based Funding Funding is allocated to providers on the basis of the value of the health care to patients, rather than specific treatments or services performed or episodes of care.	<ul style="list-style-type: none"> Aligns the interests of patients and practitioners around achieving outcomes that patients value. Outcome measures will also enable prioritisation of high value services while eliminating low value services. Increase in the use of preventive measures. 	<ul style="list-style-type: none"> Outcomes may be impacted by factors outside of the clinician's control. Requires analysis of patient outcomes over a long-term period. This data would be difficult and costly to collect. Difficulties may also be associated with the timeframes in which practitioners receive payment.
Blended Funding	Capitation base with value-based component Funding is allocated using a capitation base with a value based component with an additional component tied to the value patients receive from treatment.	<ul style="list-style-type: none"> Incentivises cost effective preventative treatment. Value based funding mitigates risks of underservicing present in capitation only models. Provides a level of payment certainty to service providers. Makes effective use of dental workforce. 	<ul style="list-style-type: none"> Additional complexity introduced as a result of combining multiple approaches. Poor system design may lead to perverse incentives.
	Fee for service or ABF base with value-based component Funding is allocated on a fee for service or ABF basis with an additional component tied to the value patients receive from treatment.	<ul style="list-style-type: none"> The base fee-for-service or activity based component of the funding model is transparent, widely used and understood. Linking funding to value helps align the interests of patients and practitioners. Preventative treatments are likely to be encouraged through linking funding to value. 	<ul style="list-style-type: none"> Additional complexity introduced as a result of combining multiple approaches. Risks associated with over servicing in a fee for service model may not be fully mitigated. Poor system design may lead to perverse incentives.

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