MILLIMAN RESEARCH REPORT

The role of reimbursement mechanisms and payment adjustors in value-based healthcare

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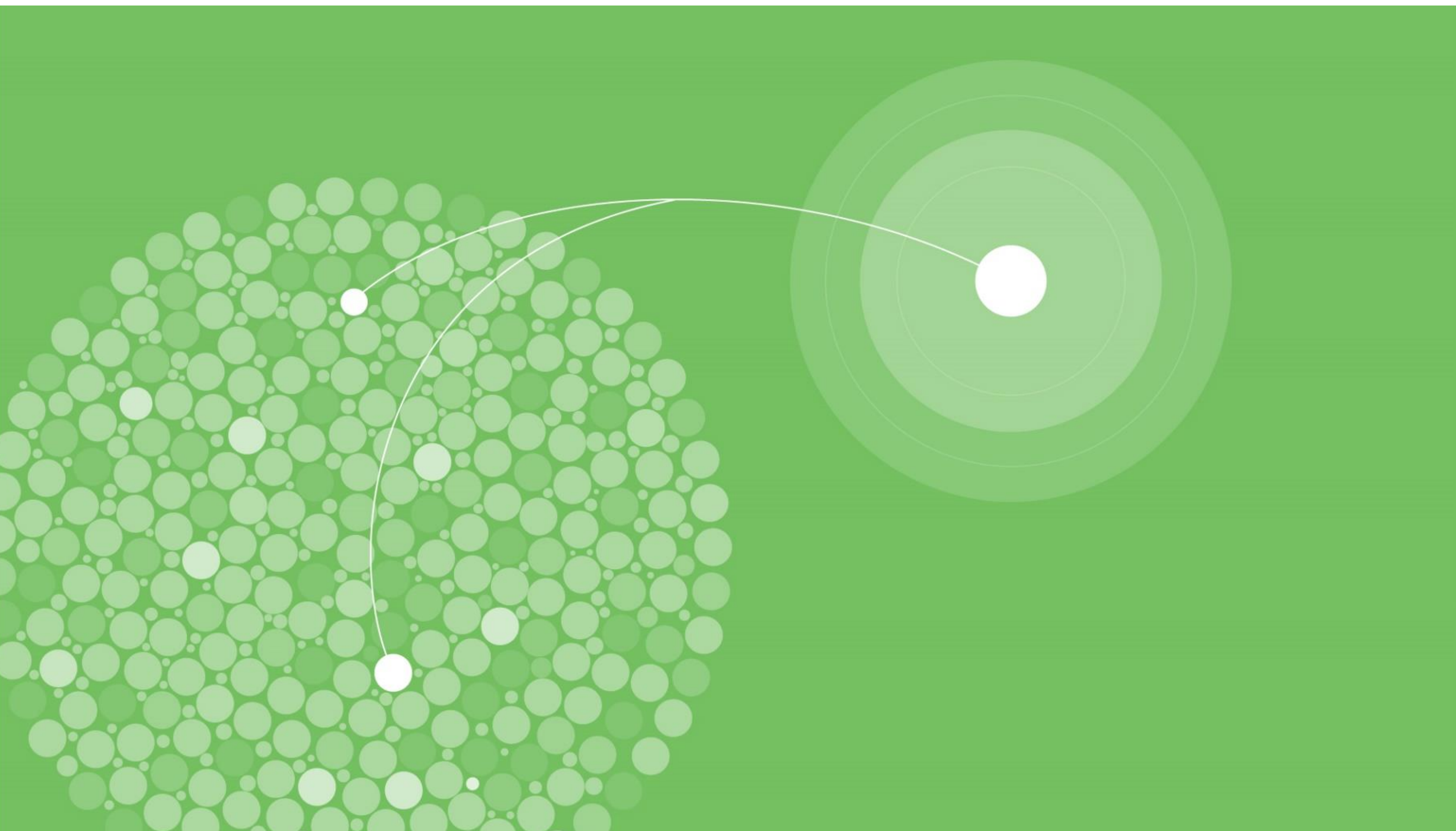
Alison Counihan, FFA
Edward Jhu, FSA, MAAA
Lalit Baveja, BSc, MSc



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Executive Summary

Rising healthcare costs are being observed globally due to the combined effects of growing populations, increasing burden of disease and technological developments, amongst other causes. This increase in healthcare costs has led governments, health regulators and other payers to assess various options available to them to control costs. A common strategy that is implemented to mitigate the impact of rising healthcare costs is a move from fee-for-service (FFS) reimbursement mechanisms to various types of bundled reimbursement mechanisms, such as diagnosis-related groups (DRGs) or capitation payments.

These alternative reimbursement mechanisms reduce the incentives for over-servicing that are created by a fee-for-service reimbursement mechanism. Moving towards bundled payment arrangements transfers some of the financial risk from the payer to the healthcare provider, which encourages efficient use of healthcare services.

Price adjustors can then be used in combination with these bundled payment mechanisms to drive certain policy objectives, including incentivising value-based healthcare by structuring payments to provide higher reimbursement for higher-quality health outcomes. However, any implementation of such a framework should be carefully considered, taking into account possible unanticipated effects.

This paper considers the role of reimbursement mechanisms, and particularly DRG price adjustors, in directing general policy and specifically in the role of value-based healthcare. The paper is structured as follows:

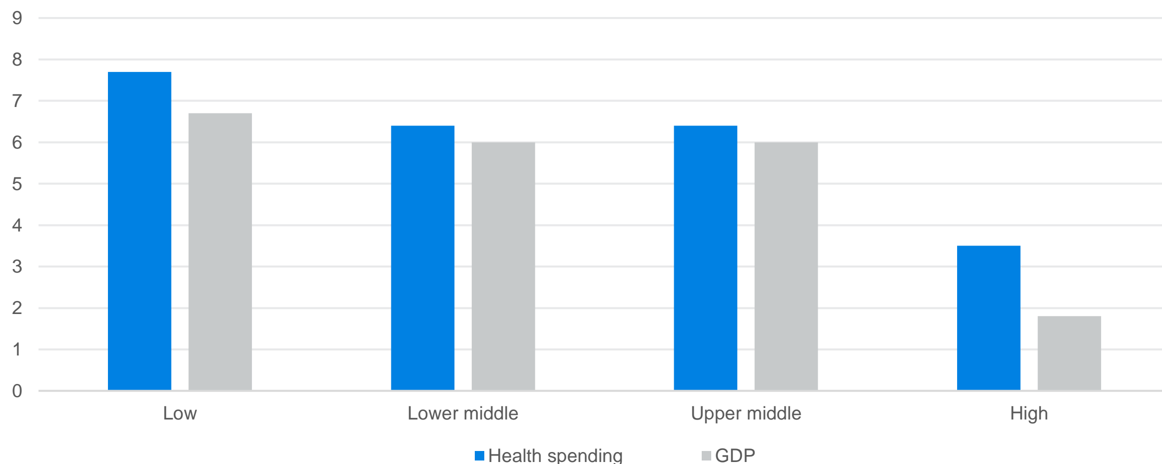
- **Section 1** provides an overview of value-based healthcare and why it is important.
- **Section 2** discusses the role of reimbursement mechanisms in value-based healthcare.
- **Section 3** considers the use of payment adjustors to drive certain policy objectives.
- **Section 4** looks at the payment adjustors that are in use in several global health systems where DRG-type reimbursement mechanisms are well-established.
- **Section 5** details the considerations of implementing the pricing adjustors.
- **Section 6** concludes with our final remarks.

1. What is value-based healthcare and why is it important?

At its most fundamental definition, value in healthcare is defined as "the health outcomes achieved per dollar spent."[1] The objective is to improve the quality of health services, measured through a number of dimensions, including overall health outcomes, patient safety and patient experience, but while also taking into account the costs incurred in providing these services. Therefore, value in healthcare is the measured improvement in a person's health outcomes for the cost of achieving that improvement.

This seems like a sensible approach to healthcare service provision, so why has it become such a hot topic now? The answer to this can be seen when looking at the increasing trend in healthcare costs across global health systems. In short, health spending is growing faster than gross domestic product (GDP). The growth observed in most markets may be unsustainable, and interventions are required to contain these increasing costs.

FIGURE 1: REAL GROWTH BY COUNTRY INCOME GROUP*, 2000-2017 (%)



Source: WHO 2019; Global Spending on Health: A World in Transition.

* The World Bank defines countries in the Low income group as those with a gross national income (GNI) per capita of $1,025 or less in 2018. The Lower Middle income group countries are those with a GNI per capita of between $1,026 and $3,995. The Upper Middle income group countries are those between $3,996 and $12,375. The High income group countries are those with a GNI per capita of $12,376 or more.

Implementing a value-based healthcare strategy is an instrumental component of working towards the "Triple Aim" of healthcare. The Triple Aim[2] is a framework developed by the Institute for Healthcare Improvement (IHI) that describes three dimensions to be optimised in improving a health system: improving the patient experience of care, which includes both the quality of care in terms of health outcomes as well as the level of patient satisfaction, along with improving the overall level of health of the population and reducing the cost of healthcare per person.

These goals can all be supported by a change in reimbursement mechanism and the use of specific payment adjustors.

[1] Porter, M.E. & Teisberg, E.O. (2006). Redefining Health Care: Creating Value-Based Competition on Results. Boston: Harvard Business School Press.

[2] IHI. Initiatives: The IHI Triple Aim. Retrieved 6 January 2021 from http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx.

2. What role do reimbursement mechanisms play in value-based healthcare?

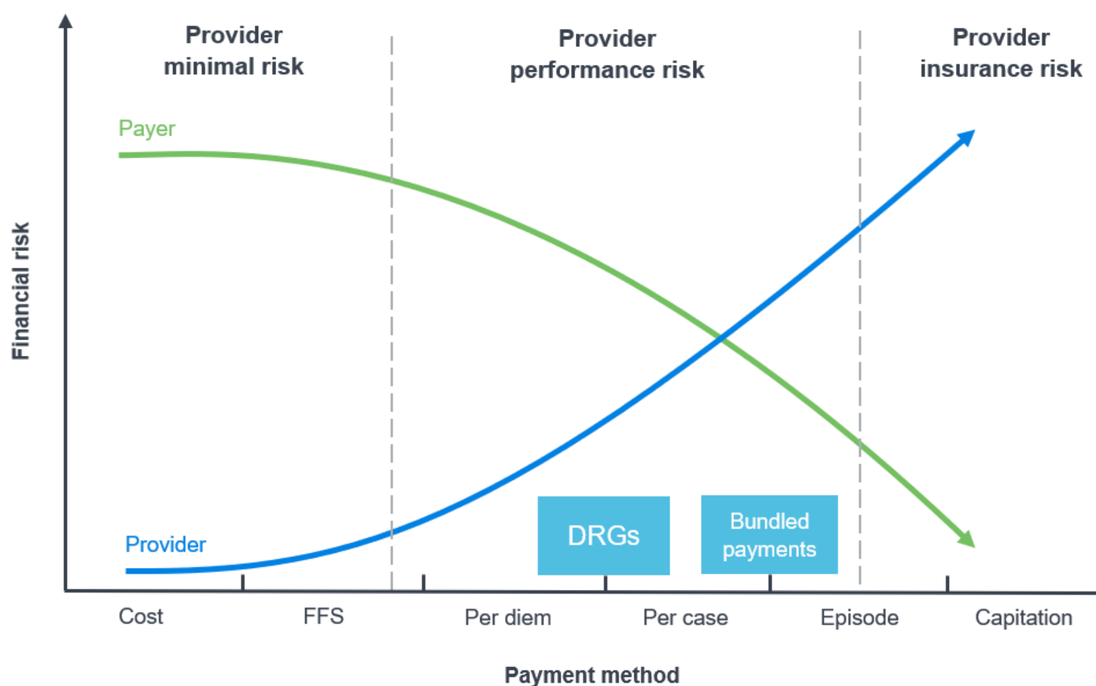
A decision to follow a value-based healthcare strategy often goes together with a change in the chosen reimbursement mechanism. The reimbursement mechanism adopted in a particular system directly impacts the level of financial risk faced by both providers and payers.

FIGURE 2: OVERVIEW OF COMMON REIMBURSEMENT MECHANISMS IN HEALTH SYSTEMS

REIMBURSEMENT MECHANISM	DESCRIPTION
Cost	Healthcare services are funded by the payer covering the actual costs of facilities, staff etc., with services usually being free at the point of service. This may be common for public health services where public facilities are fully funded by the government to provide health services to citizens.
Fee-for-service	Each healthcare service provided to the patient is billed and reimbursed as a separate item. The payment is linked to each activity and service provided.
Per diem	Health services are reimbursed with a fixed fee per day, usually used for inpatient services.
Per case	Any reimbursement where the fee is fixed for the duration of a particular encounter. A DRG is a special case of a "per case" payment for inpatient encounters.
DRG	Reimbursement is fixed for a particular hospital admission, which is defined based on features of the patient, the diagnosis and any procedures performed, taking into account the severity of the encounter.
Capitation	An arrangement where a healthcare provider receives fixed reimbursement for a particular person or population for a particular period. The reimbursement does not vary whether an individual requires health services or not, and the provider must treat the patient when required regardless of how many services have already been obtained.

When all provider expenses (for example, salaries and operating expenses) are paid for at cost by the payer, then the providers face no financial risk and payers face all the financial risk, whilst in a typical capitation model payers face very limited financial risk and providers face most of the financial risk. Between the two extremes, we can find other payment mechanisms, including fee-for-service reimbursement and DRG payments. Because a fee-for-service environment incentivises activity, it facilitates the availability of high-quality, granular service data. If the data analysis is well planned then it will allow evaluation and monitoring of service quality to move towards a value-based reimbursement mechanism.

FIGURE 3: LEVELS OF SHARED RISK



Per diem and case-based payments, like DRGs, transfer part of the financial risk from the payer to the provider. Through this risk transfer the provider is incentivised to improve efficiencies as its income does not automatically increase with additional services provided as in fee-for-service environments. Using a DRG reimbursement mechanism as an example, a facility's revenue for a patient will be fixed based on the specific diagnoses and procedures for which that patient is admitted. If the facility manages that case inefficiently, by keeping a patient admitted for longer than required or by requesting excessive or unnecessary diagnostics and laboratory tests, then the fixed reimbursement is likely to be insufficient to cover the costs incurred by the facility in the treatment of that patient. Conversely, a facility that manages the patient's admission effectively, ensuring an appropriate level of care and clinically necessary services, will have lower costs with the same reimbursement resulting in a higher profit margin. However, the facility must ensure that it doesn't cut costs by cutting corners, which may result in a poor outcome for the patient, potentially leading to a longer length of stay or reimbursement penalties.

While a change in the reimbursement mechanism from fee-for-service to a DRG framework or capitation fee may incentivise providers on its own to change their behaviour to become more efficient and more focused on the patient's health outcomes, it is important that any payment system recognises the underlying cost factors for different providers for it to be fair and sustainable. Different providers who may be in different locations, or have different profiles, may have different underlying expenses to provide the same services. Hence the payment system should reflect both cost and quality under value-based healthcare. To manage this, an adjustor framework could be introduced to differentiate payments based on specific features of the providers or to drive certain policy objectives. It is important to highlight that an adjustor mechanism is one of the many ways to achieve value-based healthcare.

3. Using payment adjustors with a DRG mechanism to drive policy objectives

Possible payment adjustors can generally be classified into one of three broad groups:

- **Compensation for unavoidable cost differentials due to features of the patient.** This would include factors such as high volumes of patients who fall into vulnerable populations.
- **Compensation for unavoidable cost differentials due to features of the provider.** This would include factors such as geographical region or specialised facilities.
- **Incentives or penalties aimed at changing provider behaviour.** An example of this would be incentivising improved health outcomes by aligning each provider's reimbursement with its score for its health outcomes.

There are a variety of ways in which payment adjustors can be implemented to impact the provider's revenue, and the specific reimbursement mechanism for each will depend both on the nature and the intention of the adjustor. For example, provider size may influence reimbursement to reflect differences in underlying cost, providers with better quality performance may be rewarded or a system may wish to incentivise setting up of undersupply specialties through higher relative payment for a set of services.

4. Looking at international frameworks for DRG payment adjustors

We have considered several international healthcare systems where DRG-type reimbursement mechanisms are well established and where various payment adjustors have been implemented. The table in Figure 4 provides a summary of common adjustors that have been used across multiple frameworks. The countries mentioned below represent a mix of public health systems, for example England and Ireland, as well as private healthcare models, as in South Korea. They focus primarily on inpatient-based payments although comparable payment adjustors can be used similarly in conjunction with other payment mechanisms too.

It is worth noting that the definitions and uses of DRGs across these global markets do differ. Some systems are used to reimburse health services for the entire population, for example in Australia, while others may be used for a segment of the population segment, such as the US Medicare programme which covers primarily the US population over the age of 65, or the US Medicaid programme, which covers people with limited income. Medicare Severity Diagnosis Related Groups (MS-DRGs) are used to reimburse providers for inpatient encounters for the Medicare population and cover facility expenses only, while other DRG definitions may cover all services provided to the patient under a single encounter. There may be unique nuances to each country and system, but the examples in Figure 4 provide insights into different payment adjustor mechanisms used globally.

FIGURE 4: SYNOPSIS OF THE USE OF DIFFERENT ADJUSTOR MECHANISMS IN A SET OF INTERNATIONAL HEALTH SYSTEMS

	Adjustor	Description	Australia	England	Germany	Ireland	South Korea	US*
Patient adjustments	Vulnerable populations	Additional reimbursement for treating a higher proportion of disadvantaged patients.	✓					✓
	Paediatric adjustments	Additional reimbursement for paediatric patients.	✓			✓		✓
Provider adjustments	Geographic area	Adjustor for facilities in remote or specific geographic areas.	✓	✓	✓		✓	✓
	Teaching hospitals	Adjustor to compensate for the costs of graduate medical education.			✓			✓
	Specialised facilities	Additional reimbursement for specialised services or facilities.		✓	✓	✓	✓	✓
Changing provider behaviour	Quality outcomes	Payments for improved health outcomes and other quality metrics. These payments include rewards and penalties based on a provider's performance in various domains, including patient safety and patient experience.		✓	✓		✓	✓
	Adverse events	Penalties for undesirable events such as high readmission rates, hospital-acquired complications or excess utilisation.	✓				✓	✓
	Use of electronic health records	Adjustments to encourage provider use of electronic health records.			✓			✓

* For the US we have considered both Medicare and the various Medicaid programmes implemented across different states.

The specific adjustors implemented in a particular system are dependent on the policy objectives. In the Australian framework, the stated aim is "to reflect legitimate and unavoidable variations in the costs of delivering health care services,"[3] and so the majority of the adjustors are focused on compensating for these unavoidable cost differentials, whether they are due to features of the patient, the services provided or the facility.

[3] Independent Hospital Pricing Authority (March 2020). National Efficient Price Determination 2020-21. Retrieved 6 January 2021 from https://www.ihpa.gov.au/sites/default/files/publications/national_efficient_price_determination_2020-21.pdf.

5. Considerations when implementing a payment adjustor framework

Any change in payment structure will create winners and losers and, if the reform is effective, will cause changes in provider behaviour. Therefore, changes to payments systems require careful planning and implementation. We have listed some key steps for planning and implementing an adjustor framework or other reimbursement reform.

1. **Identify goals of the process:**

   As in any engagement, this is a key starting point to ensure that the end product that is reached actually fulfils the required purpose.

   - Is cost reduction a primary driver of the change?
   - Is reimbursement reform needed to increase the availability of care?
   - Are there concerns about the quality of care?
   - Are there inequities in the current reimbursement system that need to be addressed?

2. **Prepare for the budget impact of the transformation:**

   - Will the adjustors be managed within existing budget, or lead to a net increase or decrease in aggregate payment?
   - How will the aggregate impact be managed? Will it be forced through a predetermined pool of funds that providers need to compete for, or will the aggregate payment be allowed to vary based on aggregate provider performance?

3. **Stakeholder engagement:**

   - It is important to gather stakeholder feedback where feasible, particularly from the provider community. While a reimbursement system can encourage certain provider behaviours, it is difficult to mandate behavioural change. It is important that the provider community agrees that the proposed changes are equitable and actionable.

4. **Development of the framework:**

   - This step is self-explanatory, but significantly simplified by completing the first three steps. Going through these initial steps can help guide stakeholders' decisions if there is uncertainty or a fear of decision making.

5. **Model the impact of the proposed framework, both in aggregate and upon each provider:**

   Significant reductions in reimbursement may jeopardise the financial stability of providers while significant increases may lead to unnecessary expenses for the system. If a payer is venturing into new territory with the payment adjustments, the amount of data may be limited. In these circumstances, the payer may need to look to other payers in the market or other markets in order to estimate potential impacts. Even if data is available, it is important to account for potential differences between historical and emerging data. These differences can be broadly classified into three categories:

   - Intended changes in performance. These are the changes that the reimbursement reforms are attempting to encourage. This encouragement may take the form of additional reimbursement for positive activities (e.g., increased payment for adoption of electronic health records) or penalties for activities being discouraged (e.g., reduction in payment for readmissions). If the reform is effective, then providers will change behaviour. However, the behaviour changes will likely lead to net increases in reimbursement. If the system does not wish to increase overall reimbursement, then payment should be set to target an aggregate decrease in reimbursement prior to modelling provider behaviour changes.
   - Change is often good, because payment reforms are often intended to change provider behaviour. However, it is important to consider whether the payment changes will also lead to unintended behaviour changes. For example, designation of a facility as a Center of Excellence will likely reduce the volume of services at other facilities and may reduce incentives for the Center of Excellence to continue improving.

- Change in documentation of performance. Provider documentation is typically focused on elements that are reimbursed. Therefore, when reimbursement mechanisms change, providers will shift their documentation efforts to maximise revenue under the new system. This may occur even if there is no change in the underlying provider clinical behaviour. As an example, adoption of a more refined DRG system under US Medicare in 2008 led to an increase in provider coding, increasing overall reimbursement.

6. Decide on the timelines for implementation:

After projecting the impact of the change it is important to consider the implementation timeline and any interim transition rules that will be put in place. It may be tempting to move fully to the new system immediately, but it is unlikely that providers can change behaviours immediately. Even if the new system is intended to adjust payment for factors outside of providers' control, a transition period for any significant changes can help negatively impacted providers to make other adjustments to offset the financial effects.

6. Concluding remarks

Every health system across the globe is aspiring to improve the patient experience of care, improve the health of populations and reduce the per capita cost of healthcare—often termed as the Triple Aim. More than a want, it is rapidly becoming a need for a healthcare system. Many of the current trends of ongoing rises in health expenditure, increased awareness, consumerism and advancements in treatment options are all challenging the sustainability of the status quo. Case-based or DRG-based payments have become popular in many regions and have shifted some of the financial risk to providers. Value-based reimbursement goes further to define the "value" more comprehensively. It acknowledges the need to address underlying cost as well as service quality and policy objective parameters through adjustor mechanisms linked to payment. This paper provides a synopsis of various approaches and options observed in different markets. Importantly, the discussion highlights that governments, administrators and decision makers should consider all anticipated and unanticipated effects before implementation of such a framework in the local context. The paper lists some key steps for planning and implementing an adjustor framework or other reimbursement reform.

How Milliman can help

Implementing value-based healthcare at a systemic level is a journey. Milliman consultants have deep expertise and vast experience with developing value-based healthcare systems at all stages of the journey, from determining the ideal standardised data set to be implemented to driving policy objectives through payment adjustors.

If you have any questions or comments on this paper, or on any other issues affecting value-based healthcare, please contact any of the consultants below or your usual Milliman consultant.

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CONTACT

Alison Counihan
Dubai
alison.counihan@milliman.com

Edward Jhu
Seattle
edward.jhu@milliman.com

Lalit Baveja
New Delhi
lalit.baveja@milliman.com

Appendix

The table below lists the various resources used in assessing the adjustor frameworks in each of the international systems considered.

COUNTRY	REFERENCES
Australia	The National Efficient Price Determination 2020-2021 published by The Independent Hospital Pricing Authority. See https://www.ihpa.gov.au/sites/default/files/publications/national_efficient_price_determination_2020-21.pdf.
England	The National Tariff Payment System used by NHS England and NHS Improvement. See https://www.england.nhs.uk/pay-syst/national-tariff/.
Germany	The G-DRG system for inpatient reimbursement. See https://eurodrg.projects.tu-berlin.de/publications/DRG-type%20hospital%20payment%20in%20Germany.pdf.
Ireland	Activity-Based Funding used by the Healthcare Pricing Office. See http://www.hpo.ie/.
South Korea	The DRG payment methodology for a small number of inpatient diagnoses determined by the Health Insurance Review and Assessment Service (HIRA) http://www.hira.or.kr/eng/main.do
United States	The Inpatient Prospective Payment System (IPPS) used by the Centers for Medicare and Medicaid Services (CMS) for reimbursement under the Medicare programme. See https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS. The inpatient reimbursement mechanisms used by various state Medicaid programmes. See https://www.macpac.gov/publication/macpac-inpatient-hospital-payment-landscapes/.

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