



Virtual Care Project – Final Report

Independent Health and Aged Care Pricing Authority

22 January 2025



Nous Group acknowledges Aboriginal and Torres Strait Islander peoples as the First Australians and the Traditional Custodians of country throughout Australia. We pay our respect to Elders past, present and emerging, who maintain their culture, country and spiritual connection to the land, sea and community.

This artwork was developed by Marcus Lee Design to reflect Nous Group's Reconciliation Action Plan and our aspirations for respectful and productive engagement with Aboriginal and Torres Strait Islander peoples and communities.

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Abbreviations

Term	Definition
ABF	Activity based funding
ACSQHC	Australian Commission on Safety and Quality in Health Care
ADHA	Australian Digital Health Agency
AECC	Australian Emergency Care Classification
AHCAH	Acute Hospital Care at Home
AHPCS	Australian Hospital Patient Costing Standards
AHPRA	Australian Health Practitioner Regulation Agency
AMHCC	Australian Mental Health Care Classification
AN-SNAP	Australian National Subacute and Non-Acute Patient Classification
API	Aligned payment and incentives
AR-DRG	Australian Refined Diagnosis Related Group
COPD	Chronic obstructive pulmonary disease
DRG	Diagnosis Related Group
DRS	Data request specification
ED	Emergency department
EVC	Emergency virtual care
GP	General practitioner
HHS	Hospital and Health Services
HITH	Hospital-in-the-home
HIVE	Health In a Virtual Environment
ICB	Integrated care board
ICT	Information and communication technology
IHACPA	Independent Health and Aged Care Pricing Authority
ISO	International Organisation for Standardisation

Term	Definition
LHD	Local health district
LHN	Local hospital network
MBS	Medicare Benefits Schedule
MDCC	Multidisciplinary case conferencing
MPS	Multi-purpose services
MRaCC	Medical Retrieval and Consultation Centre
NAPEDC	Non-admitted patient emergency department care
NBEDS	National best endeavours data set
NDIS	National Disability Insurance Scheme
NEC	National efficient cost
NEP	National efficient price
NHCDC	National Hospital Cost Data Collection
NHDISC	National Health Data and Information Standards Committee
NHRA	National Health Reform Agreement
NHS	National Health Service
NWAU	National weighted activity unit
PBS	Pharmaceutical Benefits Scheme
PHI	Private health insurance
QWAU	Queensland Weighted Activity Units
RPM	Remote patient monitoring
RVU	Relative value unit
SCNHI	Strategic Committee for National Health Information
SHI	Statutory health insurance
TYDP	Three year data plan
UDG	Urgency Disposition Groups

Term	Definition
VAED	Victorian Admitted Episodes Dataset
VBHC	Value based health care
VOICeD	Virtual Outpatient Integration for Chronic Disease
VVED	Victorian Virtual Emergency Department
WAVED	Western Australia Virtual Emergency Department

For a further glossary of terms, please refer to the [IHACPA's National Efficient Price and National Efficient Cost Determinations 2024–25 – Glossary of Terms](#).

Executive summary

Healthcare is undergoing a transformative shift towards models of virtual care, accelerated by the COVID-19 pandemic. Virtual care is challenging the existing approaches to funding hospital-based services. There is also variation in how virtual care is captured in activity and cost data collections at the jurisdiction, local hospital network (LHN) and even facility levels.

The Independent Health and Aged Care Pricing Authority (IHACPA) was established under the *National Health Reform Act 2011* as part of the National Health Reform Agreement (NHRA) to improve health outcomes for all Australians. The NHRA sets out the current funding arrangements for hospital-based services between the Commonwealth and the states and territories of Australia. IHACPA is responsible for determining the national efficient price (NEP) and national efficient cost (NEC) for public hospital services each year. These determinations form the basis for calculating the Commonwealth's funding contribution to public hospitals, ensuring that funding reflects the efficient cost of service provision.

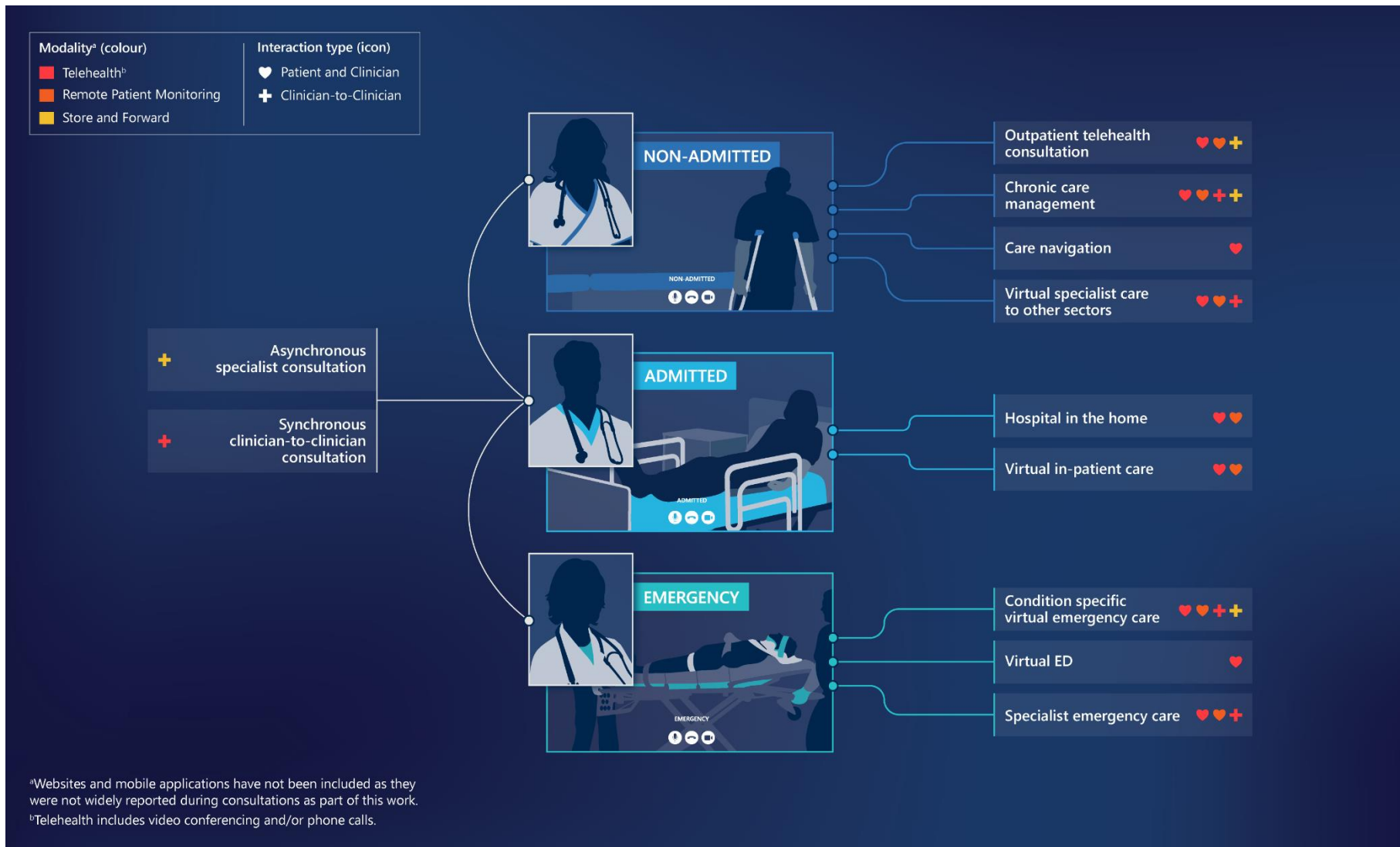
Under the NHRA, IHACPA is required to undertake an ongoing program of work to refine the national pricing model, including facilitating the exploration and trial of new and innovative models of care. As part of this work program, IHACPA is investigating potential improvements in the capture of activity and cost data relating to virtual care to ensure that the NEP and NEC remain reflective of changing models of care and cost profiles of health care delivery over time.

Commissioned by IHACPA in January 2024, the Virtual Care Project involves a review of virtual care to identify emerging trends in its delivery and better understand the extent of capture of this activity and its costs in Australia, as well as international trends in classifying and funding virtual care. This Final Report provides an overview of current models of virtual care in Australia and internationally to better understand virtual care activity, costs, and models of care. It also details recommendations and implementation considerations to address potential gaps, improve data collections and support improved integration of virtual care into the national pricing and funding models through a nationally consistent approach. This report was informed by consultations and workshops with approximately 140 stakeholders across Australian Government agencies, jurisdictional health departments, LHNs, health services, hospital and allied health representative groups, industry, and international contacts as well as insights from peer-reviewed and grey literature.

Overview of virtual care in Australia

Virtual care service delivery has accelerated nationally, with 12% growth in use of virtual service modes for non-admitted services alone in the last five years (an increase from 11.9% in 2018–19 to 23.5% in 2023–24). While traditional mechanisms of virtual in-reach services have existed within rural and remote services for decades, virtual care is increasingly becoming a priority due to its potential to expand access to existing hospital services or provide new models to facilitate hospital avoidance when patients can be managed in alternative environments. There is significant variation in virtual models of care across jurisdictions, with different modalities and interaction types across different settings. This variation creates challenges for agreeing on a nationally consistent definition and scope of virtual care. Despite the variations in the application of virtual care delivery within public hospital settings, there are common models of virtual care that have emerged. Through extensive consultation across Australia, identified models of virtual care could be categorised under eleven models, as depicted in Figure 1. These common models of virtual care align to the broader existing public hospital service categories (see Section 3.1 for further details).

Figure 1 | Common models of virtual care



Emerging data collections and costing challenges to models of virtual care

While IHACPA regularly collects hospital activity and costing data for the purposes of activity based funding (ABF), many challenges have emerged with the capture of data related to virtual care delivery. These include the following:

- Limited data capture of virtual care modalities in existing data set specifications, beyond the existing national minimum data sets and national best endeavours data sets and IHACPA's recent emergency virtual care data request specification (EVC DRS). Variations exist across jurisdictions, with New South Wales, Victoria, Queensland and Western Australia implementing additional local functionalities to capture and identify virtual care modalities.
- Focus of ABF on clinical encounters means that funding of virtual care activities outside of direct patient contact or clinician-to-clinician support occurring between hospitals is not explicit. The current definition of activity under ABF requires clinical encounters between a patient and a health provider(s), and the funding to follow the patient. This approach to funding means that funding for interactions between clinicians, remote patient monitoring, asynchronous specialist support and activities that happen outside of direct patient contacts may not be as visible in pricing and funding.
- Inconsistent inclusion of the costs associated with virtual care in national costing. Virtual care is not consistently accounted for in costing within and across jurisdictions and thus may not be adequately or accurately reflected in national pricing (or not reflected against the right services).
- Broader health system challenges are further exacerbated by the emergence of virtual care, as it breaks down the boundaries in the health system, across primary care, care provided to National Disability Insurance Scheme recipients and aged care, to enable sharing of resources and expertise. At the same time, uptake of virtual care highlights the importance of capital investment, accessibility, equity and appropriate workforce capacity and capabilities.

Recommendations and implementation

There is opportunity for IHACPA, in collaboration with other Australian Government agencies and jurisdictional health departments, to address these challenges and improve the integration of virtual care into the pricing and funding for public hospital services through:

1. developing a national definition and consistent taxonomy of virtual care delivery to provide clarity on the scope and boundaries for virtual care services
2. improving the visibility of virtual care in national data collections by identifying gaps in data collection processes and implementing the necessary changes to address those gaps
3. improving national consistency in identifying and allocating virtual care costs and consideration of supplementary collections to the National Hospital Cost Data Collection (NHCDC) to cost service innovations
4. developing a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.

Detailed recommendations to improve the integration of virtual care into the national pricing framework for public hospital services are summarised in Table 1 below. Table 1 also presents a roadmap of the recommendations, proposed actions and timeframes for implementation. Further details on the recommendations and implementation approach are provided in Section 5 and Section 6 respectively.

Section 6 also details the issues that lie beyond IHACPA's remit in public hospital pricing under the NHRA, specifically, primary care and Medicare Benefits Schedule funding; aged care and disability; and multidisciplinary care. IHACPA may share details pertaining to these issues with relevant departments for

broad sector consideration. Additionally, the current NHRA Addendum (2020–25) permits jurisdictions to apply for funding to pilot innovative models that integrate multiple sectors and funding approaches. There is also further potential to address these issues in the upcoming NHRA.

Table 1 | Summary of key recommendations

RECOMMENDATIONS		TIMEFRAME
DEFINITION AND SCOPE		
Recommendation 1: Develop a national definition and taxonomy of virtual care.		
1.1	IHACPA to adopt an interim definition of virtual care.	Short term
1.2	IHACPA to adopt an agreed taxonomy of virtual care.	Short term
1.3	IHACPA to propose a definition and taxonomy of virtual care for national adoption.	Short term
DATA COLLECTION		
Recommendation 2: Improve the visibility of virtual care in national data collections.		
2.1	Identify gaps in representation of virtual care in current national data collections and prioritise the necessary changes to address these gaps.	Short term
2.2	Work towards filling the gaps in virtual care representation in the IHACPA DRS.	Medium term
2.3	Progressively work towards filling the gaps in virtual care representation in national data collections.	Medium to long term
COSTING		
Recommendation 3: Improve national consistency in the identification and allocation of virtual care costs.		
3.1	Identify barriers for jurisdictions in identifying and allocating virtual care costs for ABF.	Short term
3.2	Provide practical support to jurisdictions to promote best practices in patient costing.	Short to medium term
3.3	Review the AHPCS and explore their development to improve cost allocation and reporting associated with virtual care.	Short term
Recommendation 4: Consider supplementary collections to the NHCDC to cost service innovations, including virtual care.		
4.1	Identify and assess the feasibility of implementing supplementary collections to the NHCDC to cost service innovations, including virtual care.	Short term
4.2	Design the supplementary data collection.	Medium term
4.3	Incorporate the costing of service innovations into the NHCDC.	Medium to long term

RECOMMENDATIONS		TIMEFRAME
PRICING AND FUNDING		
Recommendation 5: Develop a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.		
5.1	Develop a pathway to transition new and innovative virtual care services from block funding to ABF or alternative funding models that improve value.	Short term
5.2	Facilitate the transition of new and innovative virtual care services from block funding to ABF or alternative funding models.	Medium to long term

1 Introduction

This section briefly describes the background and context of the virtual care review and IHACPA's legislated remit, as well as the purpose and structure of this Final Report.

1.1 Background and context

Healthcare is undergoing a transformative shift towards models of virtual care, with the potential to enhance patient accessibility and system efficiency. This transformation has been accelerated by the COVID-19 pandemic, prompting a substantial surge in the adoption and expansion of virtual care models. The absence of a nationally consistent strategy for the integration of virtual care into the broader health system has contributed to significant variation in its delivery across jurisdictions. This has resulted in variation in how virtual care is captured in activity and cost data collections at the jurisdiction, local hospital network (LHN) and facility levels.

The Independent Health and Aged Care Pricing Authority (IHACPA) was established under the *National Health Reform Act 2011* as part of the National Health Reform Agreement (NHRA) to improve health outcomes for all Australians. Under the NHRA, IHACPA is required to undertake an ongoing program of work to refine the national pricing model, including facilitating the exploration and trial of new and innovative models of care.

Effective virtual care involves diverse modalities, challenging traditional care delivery and pricing models. As part of the work program, IHACPA is investigating improvements in the capture of activity and cost data relating to virtual care to ensure that the national efficient price (NEP) and national efficient cost (NEC) remain reflective of changing models of care and cost profiles of health care delivery over time. This program of work is supported by stakeholder feedback to the *Consultation Paper on the Pricing Framework for Australian Public Hospital Services* in 2023–24 and 2024–25, where stakeholders requested prioritisation of refinements to data collections, classifications, and pricing models to better account for the delivery of models of virtual care.

In January 2024, IHACPA commenced the Virtual Care Project to address potential inconsistencies, improve data collections and support improved integration of virtual care into the national pricing and funding models through a nationally consistent approach.

1.2 IHACPA's remit in pricing Australian public hospital services

The current funding arrangements between the Commonwealth and the states and territories of Australia for hospital-based services are guided by the NHRA. The current addendum covers the period from 2020 to 2025. Under the NHRA, most in-scope public hospital services are funded using activity based funding (ABF).

One of IHACPA's primary responsibilities is determining the NEP and NEC for public hospital services each year. These determinations form the basis for calculating the Commonwealth's funding contribution to public hospitals, ensuring that funding reflects the efficient cost of service provision. IHACPA also develops the underpinning data collections, costing standards and classification systems.

IHACPA's *Pricing Framework for Australian Public Hospital Services* outlines the principles and guidelines that govern its approach to pricing public hospital services. The document is developed through extensive consultation with stakeholders, including consideration of public submissions and ministerial feedback. Key principles include transparency, accountability, fairness, and encouraging efficiency in hospital services (see Appendix A for further detail on the IHACPA Pricing Guidelines). The Pricing Framework guides the annual determination of the NEP and NEC, incorporating feedback from the health sector to refine IHACPA's pricing decisions.

The NEP underpins ABF across Australian public hospital services, by providing a price signal or benchmark about the efficient cost of providing public hospital services. It determines the amount of Commonwealth funding for public hospital services. The NEP is based on the average cost of an admitted acute episode of care provided in public hospitals for each financial year. Other admitted, emergency department, and non-admitted care "units" are then expressed relative to this average in the form of national weighted activity units (NWAUs). This allows for the standardisation of diverse health services, and their various inputs, into an equivalent unit of measure for funding purposes, weighted for clinical complexity. The use of NWAUs ensures that funding is aligned with the volume and complexity of the services delivered.

The NEC determines block funding amounts for small, rural, and remote public hospitals and other gazetted public hospital services where ABF is not always suitable. Some of these hospitals may operate with a mix of block funding and ABF.

Determination of the NEP and NEC is underpinned by several different data sources, including the National Hospital Cost Data Collection (NHCDC), which covers about 80% of hospitals across the country, and national minimum data sets and national best endeavours data sets.

1.3 About the Virtual Care Project

In January 2024, IHACPA engaged the Nous Group (Nous) and Health Policy Analysis (HPA) to undertake a review of virtual care to better understand virtual care activity, costs, and models of care in Australia and internationally. The work informed the development of a national strategy and recommendations for refinements to data collections, costing standards and the classification systems to facilitate the improved integration of virtual care into the national pricing model.

The review is focused on virtual care delivery provided to patients across admitted, non-admitted and emergency care within the Australian public hospital system. Considerations of digital health technology, devices, electronic records and infrastructure in relation to pricing have been excluded from the review and this Final Report. To the extent to which they were relevant, the review also explored other virtual care models within private health, primary health and aged care settings to consider their application within the public hospital settings.

1.4 About the Final Report

This report presents the synthesised findings from the broad sector consultations conducted from February 2024 to June 2024 and the literature and desktop review.

The report consolidates these insights in the following structure:

- Methodology (Section 2).
- Current funding mechanisms and models of virtual care in Australia (Section 3).
- International classification and funding approaches to virtual care (Section 4).

- Recommendations for the improved integration of virtual care into the national pricing model (Section 5).
- Implementation approach and roadmap (Section 6).

2 Methodology

This section provides a description of the approach used to conduct the virtual care review, with reference to the underpinning frameworks and data sources.

The review of virtual care delivery models and funding mechanisms across Australia and internationally was informed by two key inputs:

1. Literature review and desktop scan.
2. Stakeholder consultation.

Literature review and desktop scan

The literature review and desktop scan assessed publications relating to virtual care delivery, data collection, costing and pricing in Australia and select international countries. The countries were identified based on similarities with the Australian health system or where countries demonstrated leadership in virtual care delivery in the hospital sector. The countries highlighted in this report include Canada, Denmark, Germany, the United Kingdom (UK) and the United States of America (USA).

The literature and document review included both peer-reviewed literature and grey literature covering:

- local and international government strategy documents and publications
- health services and industry websites and publications
- standards and guidelines
- submissions to the *Consultation Paper on the Pricing Framework for Australian Public Hospital Services* (2023–24 and 2024–25)
- documents and data supplied by IHACPA and consulted stakeholders.

Peer-reviewed literature searches were conducted using PubMed and Google Scholar and considered only virtual care services in scope of this review. 45 peer-reviewed publications and 170 grey literature documents were identified and considered in the review.

Stakeholder consultation

This Final Report is informed by two stages of consultation with approximately 160 stakeholders:

- Stage One consultations were conducted to understand the current virtual care landscape and the emerging challenges that jurisdictions face in relation to this. This was achieved through interviews and focus groups with Australian Government agencies, jurisdictional health departments, LHNs, health services, hospital and allied health representative groups, industry, and international contacts. Representatives from LHNs and health services were nominated by the relevant jurisdictional health departments.
- Stage Two consultations were conducted to test recommendations and consider implementation implications. This stage built upon the key insights that emerged through Stage One and consisted of workshops with each jurisdiction, including health department and LHN representatives. A final cross-jurisdiction workshop was conducted to test and refine key recommendations with at least two nominated representatives from each jurisdiction.

A summary of the stakeholders engaged is represented in Figure 2.

Figure 2 | Summary of stakeholder engagements



3 Current models of virtual care and funding mechanisms in Australia

This section provides an overview of the current and emerging virtual and hybrid models of care in Australia, current data collection approaches and the funding mechanisms available for virtual care delivery.

3.1 Current models of virtual care in Australia

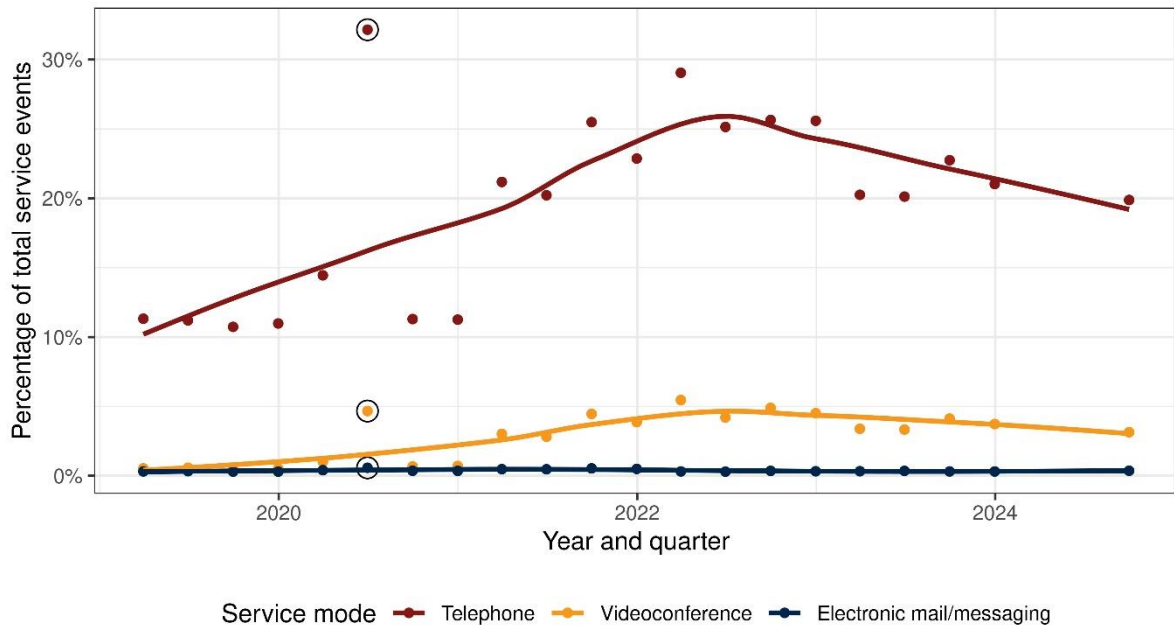
Virtual care service delivery has accelerated nationally and internationally over the last five years. Advances in technology and communications and the COVID-19 pandemic have been major drivers for its uptake. However, in some parts of health care, telehealth and asynchronous approaches have been used for decades, necessitated by geographic circumstances.

Virtual care is increasingly becoming a priority for health systems due to its potential to support greater patient choice and enhance efficiency of health services. It is being used to expand access to existing services or provide new models of hospital avoidance where patients can be more effectively managed in alternative environments.

Modalities offered include telehealth (including by telephone or video), remote patient monitoring (RPM), asynchronous communications and website and remote applications. Models using these modalities include chronic care management, care navigation, virtual ward rounds, in-reach into residential aged care and hospital-in-the-home (HITH).

In the non-admitted service setting, virtual care accounted for approximately 24% of care in 2022–23, up from 12% in 2018–19. Telephone was the most common form of virtual modality, followed by videoconference and electronic messaging, albeit with low activity volumes (see Figure 3).

Figure 3 | Trends in Non-admitted service events



Source: Non-admitted patient national best endeavours data set data submitted by states and territories quarterly to IHACPA, smoothing for the impact of COVID-19 in Quarter 3, 2020.

Jurisdictions have adapted different models of care to suit the diverse and local population needs, such as rurality and socioeconomic factors. As a result, there are variations in virtual care delivery across jurisdictions and LHNs. Additionally, jurisdictional organisational structures may contribute to the variance in virtual care models, in addition to the shared responsibilities for healthcare between the Commonwealth and states and territory governments (including funding, see Section 3.5 for further detail) and the lack of a national definition and strategy for virtual care delivery (see Section 3.1.1).

3.1.1 There is currently an absence of a nationally consistent definition of virtual care

Virtual care as a concept has evolved considerably in recent years. At present, there is no standardised definition of 'virtual care' used across Australia or internationally. The absence of a national definition may contribute to the variation in its delivery across jurisdictions, with limited clarity on boundaries and scope.

Often used interchangeably, many institutions commonly use the term 'telehealth' synonymously with 'virtual care'. The rise of digitally enabled care services, beyond telephone calls and videoconferencing, has broadened the concept of virtual care to encompass a wider array of services delivered with digital elements. Despite the absence of a national definition, many jurisdictions in Australia and international institutes share commonalities in how they define virtual care and telehealth. Figure 4 highlights a sample of definitions of virtual care across Australia and internationally.

Figure 4 | Sample of national and international definitions of virtual care and telehealth

VIRTUAL CARE	TELEHEALTH
<p>“ VIRTUAL CARE (otherwise known as telehealth) refers to health care delivery, or related processes (such as education), where one or more of the participants are separated by distance, and information and communications technologies are used to overcome that distance. - Victorian Department of Health ”</p>	<p>“ TELEHEALTH is defined as the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, health administration, and public health. - Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services ”</p>
<p>“ VIRTUAL CARE is any interaction between a patient and clinician, or between clinicians, occurring remotely with the use of information technologies. As technology has evolved so too has our terminology, and ‘telehealth’ services are increasingly being referred to as ‘virtual care’ to better reflect the broader range of technologies. - NSW Ministry of Health ”</p>	<p>“ TELEHEALTH is healthcare delivery or related activities that use any form of technology as an alternative to face-to-face consultations. It includes, but is not restricted to, videoconferencing, internet and telephone. It does not refer to the use of technology during a face-to-face consultation. - Australian Health Practitioner Regulation Agency (AHPRA) ”</p>
<p>“ VIRTUAL CARE is defined as any interaction between patients and/or members of their circle of care, occurring remotely, using any forms of communication or information technologies, with the aim of facilitating or maximising the quality and effectiveness of patient care. - Canada ”</p>	<p>“ TELEHEALTH is the delivery of health services using information communication technologies and ties in with many innovations in healthcare. Clinical telehealth uses dedicated technical infrastructure, so those services are prioritised over other communication technology uses. - Queensland Health ”</p>
<p>“ VIRTUAL CARE can be defined as ‘Healthcare activity supported at a distance by information and communication technology service(s).’¹ Many organisations use the term ‘telehealth’ to describe virtual care services. Virtual care can be delivered by a range of modalities including:</p> <ul style="list-style-type: none"> • telephone, videoconferencing, remote patient monitoring, store and forward, and website and mobile applications. <p>- Australian Commission on Safety and Quality in Health Care ”</p>	

¹ISO 13131 – Health informatics – Telehealth services – Quality planning guidelines ISO [internet]. Available from: <https://www.iso.org/standard/75962.html>

For this Final Report, the Australian Commission on Safety and Quality in Health Care (ACSQHC) definition of virtual care services will be used, within the context of public hospital services:

‘Healthcare activity supported at a distance by information and communication technology (ICT) service(s).’

Virtual care can be delivered by a range of modalities including:

- *telephone*
- *videoconferencing*
- *RPM*
- *store and forward*
- *website and mobile applications (apps).*

The ACSQHC adapted from ISO 13131:2021. The ACSQHC acknowledges that ongoing refinement of this definition is likely required to reflect the expanding number of virtual care modalities.¹

¹ ISO. 13131:2021 Health informatics – Telehealth services – Quality planning guidelines. <https://www.iso.org/standard/75962.html>

Modalities

Virtual care is delivered through a range of modalities and involves interactions that fall into two distinct groups:²

- **Synchronous** refers to live, real-time interactions, including telephone and videoconferencing.
- **Asynchronous** refers to the transmission of health information that does not occur instantaneously, also known as store and forward.

Table 2 lists the modalities. Models of virtual care may include one or more of these.

Table 2 | Description of virtual care modalities^{2,3,4,5}

Modalities	Description
Telephone	Telephone is often used to facilitate communication in real time, including to conduct consultations, provide results, follow up patient progress following discharge or between consultations.
Videoconferencing	Videoconferencing is used to support clinical care through a real-time audio and video link between multiple participants. This mode can provide a more interactive and engaging experience for the clinician, the patient and their carer, or between clinicians.
Remote patient monitoring	RPM uses electronic communication technology to collect and send medical and healthcare data from a device or service outside the traditional clinical setting, for the purposes of providing care. This includes information transmitted from devices used to collect patient biometric data. RPM can be used in different ways, depending on the setting. For admitted patients, RPM is often used to monitor clinical deterioration, necessitating rapid intervention. In contrast, for non-admitted patients, the response may be more asynchronous, focusing on monitoring trends and offering guidance on the self-management of chronic illness.
Store and forward	Store and forward is an asynchronous electronic communication method of acquiring and storing clinical information (including data, images, sound and video). Information is forwarded to, or retrieved by, another clinician for the purposes of clinical review for advice or management.
Website and mobile applications	<p>An emerging trend in virtual health care delivery involves the use of websites and mobile applications, or 'remote applications', which increasingly incorporate artificial intelligence technology. These remote applications support various functions, such as RPM and store and forward, and provide patient information, navigation and support.</p> <p>The provision of remote applications was not a focus of this review as very limited models were observed within the public hospital setting. The provision of remote applications may warrant future consideration by IHACPA.</p>

² The Center for Connected Health Policy. (2024). *What is telehealth?* <https://www.cchpca.org/what-is-telehealth/?category=mobile-health>

³ Australian Commission on Safety and Quality in Health Care. (2024). *Safety and quality in virtual care.* <https://www.safetyandquality.gov.au/our-work/e-health-safety/safety-and-quality-virtual-care>

⁴ Australian Digital Health Agency. *Telehealth.* Retrieved April 2024 from <https://www.digitalhealth.gov.au/healthcare-providers/initiatives-and-programs/telehealth>

⁵ Digital Health Canada. (2020). *Virtual Care in Canada: Lexicon.*

3.1.2 Non-admitted care

National definition of a non-admitted patient service event

The unit of measure for non-admitted patient hospital activity is a 'service event'. A non-admitted patient service event is defined as "an interaction between one or more healthcare provider(s) with one non-admitted patient, which must contain therapeutic or clinical content and result in a dated entry in the patient's medical record".⁶

Although multidisciplinary case conferencing (MDCC) does not meet the definition of a non-admitted patient service event (given patients are not usually present), they are now reported and in-scope for ABF. This decision was made given MDCC is now a common and important aspect of clinical care and the increasing complexity and specialisation in health care has driven the need for more formalised mechanisms for multidisciplinary collaboration.⁷ MDCC is currently the only exception to the national definition of a non-admitted patient service event.

Existing national data collections record some virtual care modalities

The Non-admitted patient national best endeavours data set (NBEDS) is the primary non-admitted patient data set specification reported for ABF purposes. This dataset includes a data element that records the modality of each non-admitted service event—service delivery mode.⁸ The data element has the following permissible values:

- **In-person:** the healthcare provider delivers the service in the physical presence of the patient (i.e., in the same room).
- **Telephone:** the healthcare provider delivers the service using a telephone. This includes teleconference.
- **Videoconference:** the healthcare provider delivers the service using a video conferencing platform.
- **Electronic mail/messaging:** the healthcare provider delivers the service via electronic mail, or other electronic messaging services, including instant messaging.
- **Postal/courier service:** the healthcare provider delivers the service via postal (including courier) services.
- **Patient self-administered:** the health service was delivered via a means that does not involve direct interaction with a healthcare provider (however is under the care/review of the healthcare provider) such as home-based procedures and remote home-based diagnostic monitoring (telemonitoring) that the patient self-administers without assistance from a healthcare provider.
- **Non-client event:** this category covers services where the patient did not participate in the service such as MDCC.
- **Other:** the health service involved a direct interaction with a healthcare provider via a means not covered by any other category.

Note that while this data element allows for the comprehensive recording of service modes, not all are in scope for ABF. The values provide for synchronous and asynchronous modalities of virtual care to be recorded where there is an interaction between a healthcare provider and a patient, except for the non-client event value. This value covers service events where the patient did not participate, allowing capture of MDCC. Except for MDCC, clinician-to-clinician interactions are not captured, as they do not constitute a service event and are considered as inputs to service events.

⁶ AIHW. (2024). Non-admitted patient service event. <https://meteor.aihw.gov.au/content/652089>

⁷ KPMG. (2017). Counting, costing and classifying nonadmitted MDCCs where the patient is not present.

⁸ AIHW. (2021). Non-admitted patient service event—service delivery mode, code N. <https://meteor.aihw.gov.au/content/732562>

The ongoing review of patient data by a provider to monitor a patient's health, such as in RPM, also does not constitute a service event, as it does not involve direct interaction with a patient. However, if review of the data triggers follow-up with the patient, then a service event may be recorded.

Counting rules for non-admitted virtual care

For ABF, virtual care services provided between two hospitals may be counted by the clinic providing the virtual consultation and by the public hospital service provider where the patient physically attends. The clinic providing the specialist consultation may be assigned to an appropriate Tier 2 Non-Admitted Services Classification (Tier 2) class that reflects the clinic's specialisation. The clinic where the patient physically attends should be classified to either Tier 2 class 20.55 *Telehealth – patient location* where the clinic is provided by medical officers or nurse practitioners or Tier 2 class 40.61 *Telehealth – patient location* where the clinic is provided by allied health and/or clinical nurse specialists.

Where non-admitted virtual care is provided to a patient in their home or at a facility funded by another portfolio, then only the hospital providing the care records a service event. There are resource and reimbursement implications for primary care and aged care providers and providers of support for people living with disabilities (see overleaf).

Variations in data collected by the states and territories

While access to the current specifications for all state and territory non-admitted patient data collections was not available for the desktop review, the available information revealed several variations in the data collected across jurisdictions that may impact the capture and identification of virtual care.

While all jurisdictions capture the permissible values for the national service delivery mode data element, some jurisdictions have specified additional codes to capture:

- where a health service staff member was supporting the patient during a telehealth event
- different types of MDCCs and self-administration, and
- both the provider and receiver end of a telehealth event.

Victoria and Queensland include a client present data element in addition to the service delivery mode data element, which allows greater scope for identification of the range of virtual care modalities where the patient is not present. For example, where the service provider contacts another service provider.

In the Queensland funding model, health services record non-admitted activity that does not meet the national definition of a service event. eConsults involve asynchronous electronic transmission of clinical advice about a patient from one healthcare provider to another. The advice is based on assessment of digitised clinical data sent as a request and results in a dated entry in the patient's medical record. eConsults are mapped to their own classification, known as Queensland Tier 2 Codes, but are excluded from national reporting. The use of a 'Local Clinic Code' allows identification of eConsults in the data collection.

Paying for virtual care in other sectors

Primary care

Medicare Benefits Schedule (MBS) items exist for telehealth (video and telephone) services provided by medical practitioners in general practice, specialists, nurse practitioners, participating midwives, allied health providers and dental practitioners. The items have the same clinical requirements as the corresponding in-person consultation items and have the same MBS benefit.

It is a legislative requirement that, except in limited circumstances, general practitioners (GPs) can only provide a service via telehealth where they have an established clinical relationship with the patient.

While these MBS services can be provided to older people living in residential aged care homes or receiving care and support at home and people living with disabilities, they generally cannot be provided to patients already receiving services at a public hospital.

Section 19 of the **Health Insurance Act 1973** provides that Medicare benefits are not payable for certain professional services (such as those provided in hospitals, multipurpose services and community clinics) where other government funding is already provided for that service. The exception is if the Australian Government Minister for Health and Aged Care, or his delegate, makes directions under subsection 19(2) of the **Health Insurance Act 1973** exempting the site.

This situation has implications for the reimbursement of virtual care for both admitted and non-admitted public hospital patients, where care costs are generated for both the public hospital and the private practitioner. The general rule is that only one provider can be reimbursed for the service event.

In contrast, IHACPA rules for ABF for non-admitted virtual care in public hospitals involving clinicians providing a video consult to a patient at another public hospital allow both the provider and the hospital where the patient is located to record a service event and attract ABF. However, the hospital providing the care is funded according to the class defined by the clinic type of the treating clinician (which may be medical, or allied health or specialist nurse led), while the hospital where the patient physically attends is funded according to one of two Tier 2 classes created especially for hosting a patient receiving telehealth (i.e. Tier 2 class 20.55 *Telehealth – patient location* where the clinic is provided by medical officers or nurse practitioners or Tier 2 class 40.61 *Telehealth – patient location* where the clinic is provided by allied health and/or clinical nurse specialists).

Aged care

ABF of residential aged care homes supports the use of virtual care to enhance service models of care and support, with ongoing models of virtual nursing care in aged care homes evident. While stakeholders indicated that in-home care funding rules do not currently make provisions for the use of virtual care, given the reliance on in-person care and support for service reimbursement, they indicated there are discussions underway to consider funding support for virtual care under the new support at home program to be implemented from 2025. There is some support for virtual care with the allied health and nursing services described in the existing Commonwealth Home Support Programme Manual 2023–24 referring to the use of telehealth technologies as a potential care modality. The Australian Government has funded Primary Health Networks to help aged care facilities set up telehealth equipment so residents can consult health professionals virtually.

The funding arrangements for aged care do not appear to act as a direct barrier for public hospitals to deliver virtual care to consumers receiving aged care funding support.

Disability care

Funding provided through the National Disability Insurance Scheme (NDIS) to support people living with disabilities allows for the claiming of telehealth to deliver direct supports where appropriate and with the agreement of the participant. Providers have a duty of care to their participants to ensure they are providing the same standard of care through video technology as in a clinical setting. Claims for telehealth services are made using the relevant support item as indicated in the NDIS Pricing Arrangements and Price Limits and by using the “Telehealth Services” option in the claim’s portal.

When support is provided to a NDIS participant via telehealth, the price should generally equate to the price level that would apply if the participant was receiving the support in the same location as the person

delivering the support. NDIS participants can spend up to \$750 on electronic devices (computer tablets or iPads) for telehealth and care or participating in online video classes.

The funding arrangements for disability care do not appear to act as a direct barrier for public hospitals to deliver virtual care to NDIS participants.

3.1.3 While variation exists, public hospitals are adopting common models of virtual care across the care continuum

Various models of virtual care have emerged across the Australian public hospital system, with different modalities, interaction types and across different settings. Where traditional mechanisms of virtual in-reach services have existed within rural and remote services for decades, the requirement for social distancing that arose as a result of the COVID-19 pandemic has accelerated this adoption in more areas of health care delivery. New technologies combined with the need to expand hospital capacity or enhance patient care have pushed health services to innovate across all aspects of the hospital system, including within non-admitted, admitted and emergency care services.

Clinicians can now more easily provide care beyond the walls of a physical hospital to support other hospitals, rural centres, community care and aged care facilities at a distance through synchronous or asynchronous means. Technology has also enabled clinicians to provide specialist advice on a larger scale beyond business as usual clinical advice and over longer durations. While traditionally virtual care modalities have previously substituted for in-person care, some models of care have evolved to predominantly provide virtual care or allow for a hybrid approach.

Despite the variations in the application of virtual care delivery within public hospital settings, there are common models of virtual care that have emerged. Figure 5 depicts these common models of virtual care, aligned to the three broad public hospital service categories. The subsequent Table 3 provides a detailed description of each model.

Figure 5 | Common models of virtual care

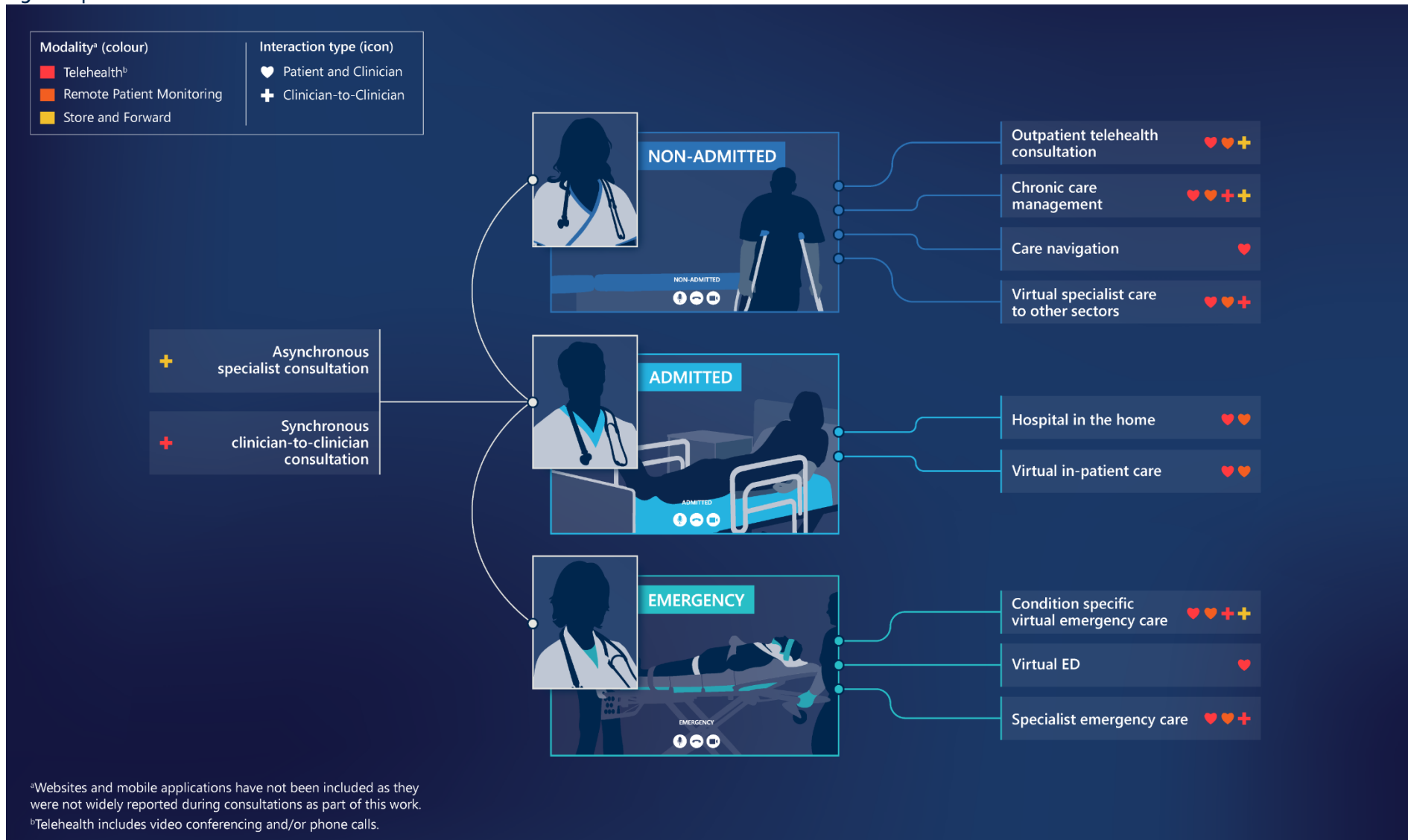


Table 3 | Descriptions of virtual care

Model	Description	Interaction Type	Modality
Non-admitted services			
Outpatient telehealth consultation	Virtual communications that allows patients to connect with hospital healthcare providers in an outpatient setting through video consultations or telephone calls.	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • Store and forward • RPM
Chronic care management	Virtual access to a multidisciplinary team for the treatment of a chronic condition, such as diabetes and chronic respiratory disorders. This may utilise RPM to monitor key metrics, or asynchronous methods of data collection, such as patient surveys or the sharing of lab results.	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM • Store and forward
Care navigation	A telephone or video service that supports patients to manage their journey through the health system, including scheduling appointments, connecting with healthcare service providers or understanding digital platforms.	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth
Virtual specialist care to other sectors	Healthcare professionals providing virtual specialist medical services and interventions to people within aged care facilities, regional or remote areas and/or primary community settings.	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Admitted services			
Hospital-in the-home (HITH)⁹	Acute inpatient equivalent care, utilising highly skilled staff, hospital technologies, equipment, medication, and safety and quality standards, to deliver care within a person's place of residence or preferred (non-hospital) treatment location. HITH is not exclusively virtual care; however, certain components of it can be delivered virtually.	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Virtual inpatient care	Healthcare professionals conducting inpatient consultations and assessments using virtual platforms, within or across health services.	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Emergency care services			
Virtual emergency department (ED)	Provision of urgent/emergency care by an ED to a patient virtually, through video consultation.	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth

⁹ Hospital In The Home Society Australasia. (2023). *HITH Society of Australasia Position Statement: Definition of Hospital in the Home*.

Model	Description	Interaction Type	Modality
Specialist emergency care	Inter-hospital or health service communication where an emergency clinician liaises with a local hospital or healthcare provider to share clinical expertise or oversight regarding a patient. Often in more rural areas where limited resources exist.	<ul style="list-style-type: none"> • Clinician-to-clinician • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Condition specific virtual emergency care	A virtual service that enables remote assessment, diagnosis and treatment of patients by condition specific specialists (e.g. stroke). Patients may be in an ambulance, ED or admitted to a ward.	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Clinician-to-clinician interactions			
Synchronous clinician-to-clinician consultation	Inter-hospital or health service communication where a hospital clinician liaises via video or telephone with a local hospital or healthcare provider to share clinical expertise or oversight.	<ul style="list-style-type: none"> • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Asynchronous specialist consultation	Asynchronous, consultative clinician-to-clinician communications within an electronic system. Often referred to as e-consults.	<ul style="list-style-type: none"> • Clinician-to-clinician 	<ul style="list-style-type: none"> • Store and forward

3.1.4 Jurisdictions offer a wide variety of virtual care services and initiatives

While common virtual care models have emerged, Australia’s federated health system gives rise to jurisdictional variations in the application of these models. Even within a similar model of care, jurisdictional differences were observed, highlighting that virtual care adoption is varied and nuanced. For example, virtual ED is an emerging model of care that has been adopted across New South Wales, Victoria, Queensland, South Australia and Western Australia. In Victoria, the Victorian Virtual Emergency Department (VVED) has evolved into statewide services that provides triaging, referrals and medical advice for non-life threatening emergencies. In New South Wales, VirtualKIDS is an urgent care service that assesses children following referrals from healthdirect or provides post ED discharge review. In contrast, the South Australian Virtual Care Service connects patients on-scene with ambulance, regional clinicians or aged care services, with senior emergency clinicians to avoid presentation to the ED. Queensland’s Virtual Emergency Care Service (VECS) provides Queensland residents and visitors, GPs and the Queensland Ambulance Services (QAS) access to specialist emergency care services by telephone or video conferencing.

Many examples of virtual care models emerged in the desktop review and in consultations with jurisdictions undertaken for this project. A sample of these models of virtual care is highlighted in Figure 6. Appendix B provides a detailed list of the models of virtual care described by stakeholders consulted throughout this review.

Figure 6 | Examples of state and territory virtual care services presented during consultations



3.1.5 Work is underway to establish guidelines for virtual care delivery

The absence of specific legislation regulating telehealth and virtual care in Australia has contributed to the development of various telehealth-specific or profession-specific guidance documents by the Australian Health Practitioner Regulation Agency (AHPRA), industry bodies and state and territory health departments. In addition, existing healthcare standards, policies, guidelines, and directives that apply to in-person services also apply to virtual care.

The increased uptake in virtual care and shift towards digital health has seen a growth in demand for clear, consistent guidelines and requirements for virtual care. Several national bodies have produced guidelines, standards and plans to support delivery of virtual care services.¹⁰

Australian Commission on Safety and Quality in Health Care (ACSQHC)¹⁰

In 2020, the ACSQHC launched the National Safety and Quality Digital Mental Health Standards describing the level of care and safeguards to be provided by a digital mental health service under clinical and technical governance, consumers, and model of care. A voluntary accreditation scheme commenced in

¹⁰ Australian Commission on Safety and Quality in Health Care. (2020). *National Safety and Quality Digital Mental Health Standards*.

November 2022, with national healthcare providers participating, such as the Royal Flying Doctors Service. In consultations for the scheme, all jurisdictions and state and territory health departments expressed an interest in the broader application of the Standards to virtual care services (including telehealth).

Standards Australia¹¹

Standards Australia represents the International Organisation for Standardisation (ISO) and provides access to the ISO 13131:2021 Health informatics – Telehealth Services Quality planning guidelines. These provide guidance on the implementation and operation of telehealth services, including planning, quality, and operational processes.

The Australian Health Practitioner Regulation Agency (AHPRA)¹²

The AHPRA Medical Board's guidelines on telehealth consultation with patients is used to inform registered medical practitioners and the community on the expected practices. Effective since September 2023, the guidelines include expectations on considerations and actions before and during a telehealth consultation, record keeping, and patient safety and privacy.

Australian Digital Health Agency (ADHA)^{13,14}

The ADHA has published The Connecting Australian Healthcare – National Healthcare Interoperability Plan 2023–28, which outlines a national vision to share consumer health information in a safe and seamless way. In addition, the ADHA has released a National Digital Health Strategy aimed to create a more connected, person-centred digital health system and realise the benefits of digital technology. A priority area for the National Digital Health Strategy is to improve and expand virtual care delivery by supporting patients to receive personalised and timely healthcare.

Australian Department of Health and Aged Care (Medicare Benefit Schedule)

The Australian Department of Health and Aged Care sets the requirements for telehealth services under the MBS. The documents outline the conditions to be met for a telehealth consultation and the associated MBS item number for billing. Access to MBS telehealth requires medical practitioners to have an established clinical relationship with their patients and they can only provide telehealth services to patients who they or another practitioner at the same clinic has seen in-person in the last 12 months.

3.2 Current data collection for virtual care services at the national and jurisdictional level

IHACPA collects hospital activity and costing data (including on non-admitted patient service events, ED presentations and admitted patient episodes of care) for the purposes of ABF. The section below provides an overview of the existing scope of national and jurisdictional data collections to capture and identify virtual care for ABF. The national and jurisdictional data collection specifications that underpin the analysis in this section are provided at Appendix D

¹¹ AS ISO. 13131:2022 *Health Informatics - Telehealth Services - Quality Guidelines*.

¹² The Australian Health Practitioner Regulation Agency. (2023). *Guidelines: Telehealth consultations with patients*. <https://www.ahpra.gov.au/Resources/Telehealth-guidance-for-practitioners.aspx>

¹³ Australian Digital Health Agency. (2023a). *National Digital Health Strategy 2023-2028*.

¹⁴ Australian Digital Health Agency. (2023b). *Connecting Australian Healthcare | National Healthcare Interoperability Plan*.

3.2.1 Emergency care

Virtual emergency department care is out-of-scope for the existing national data collection

The scope of data in the Non-admitted patient emergency department care (NAPEDC) national minimum data set (NMDS) only includes physical presentations to an ED. Consultations provided exclusively via telephone or videoconferencing are not in-scope.

IHACPA is conducting data collection on telehealth video consultations delivered by EDs

Under the *National Health Reform Act 2011*, IHACPA is charged with determining the eligibility of public hospital services to be funded by the Commonwealth.¹⁵ Eligibility of admitted and emergency care services is determined by the scope of activity defined in national data set specifications. For emergency care, services must be in-person to be eligible.

There is provision for arrangements between the Commonwealth and states and territories to fund innovative service models. For example, under the NHRA Addendum 2020–25, a few jurisdictions are being funded for models delivering urgent care virtually or where they have established their own virtual ED models. In all instances the models are being block funded as a suitable mechanism for funding them on an activity basis is not yet available.

IHACPA is currently receiving quarterly activity data from jurisdictions for these virtual care services through a voluntary data collection—the emergency virtual care (EVC) data request specification (DRS), as part of the Emergency Virtual Care Activity Data Submission project. For 2023–24, the quarterly data submissions are on a best endeavours basis and do not contribute to pricing or funding. Submission through the EVC DRS is in addition to the data reporting requirements set out in IHACPA’s Three Year Data Plan.

Consultations between clinicians are not included in the EVC DRS. Activity that falls under the reporting requirements of the NAPEDC NMDS or other related data collections is also excluded. However, while the activity of an ED where the patient is located should be reported through the NAPEDC NMDS, if another ED provides virtual care to the same patient, the activity of the remote ED service is reported under the EVC DRS.

Some jurisdictions have the capacity to record virtual ED activity

Victoria, Queensland and Western Australia currently have the capacity to record and report virtual ED presentations:

- In Victoria, service type codes exist for telehealth and virtual consults to distinguish between consults where the patient is with a clinician at a facility and those where the patient is at home.
- In Queensland, both virtual ED activity (i.e. where an ED clinician consults with a patient who is not physically present in an ED, such as at home) and ED telehealth consultations (i.e. when a patient is physically present at a public hospital ED and receives a consult from a clinician at another hospital) are captured under separate codes.
- In Western Australia, where the ambulance service receives advice from the Western Australia Virtual Emergency Department (WAVED) service at the scene with a patient, the data collection enables recording of ED departure status as “virtual emergency care completed at home”.

¹⁵ Independent Health and Aged Care Pricing Authority. (2023). *General List of In-Scope Public Hospital Services Eligibility Policy*. https://www.ihacpa.gov.au/sites/default/files/2023-08/General_List_of_In-Scope_Public_Hospital_Services_Eligibility_Policy-Version_8.0.PDF

3.2.2 Admitted patient care

There is currently no provision nationally to identify the use of virtual care modalities within an episode of admitted patient care and/or during the days in HITH. Queensland is the only jurisdiction that currently systematically records where care is provided virtually to admitted patients. Queensland's statewide Patient Administration System contains fields to report telehealth consultations within admitted patient episodes, including HITH admissions as well as those in physical facilities. A ward code is also used to capture virtual ward admissions where all interactions are conducted virtually.

New South Wales indicated that a 'virtual care flag' will be added to admission records in the jurisdictional data collection from July 2024.

While all jurisdictions record HITH delivery, except for the examples provided above, virtual care delivered during HITH episodes is not separately captured at a statewide level. For example, Victoria uses accommodation type to record HITH but while some admitted HITH activity is conducted virtually via videoconference, it is not possible to identify the mode of care delivery in the jurisdictional data collection. In South Australia, while the HITH service, My Home Hospital (MyHH), has its own entity code, it is not possible to distinguish virtual care delivery for patients admitted to this service. Additionally, MyHH requires daily in-person visits by a health professional, therefore, virtual care plays a more supplementary role within this service.

3.2.3 Gaps in national data collection relating to virtual care delivery

Consultation with stakeholders identified several potential gaps in national data collections relating to virtual care delivery. While some of these do not have an impact on ABF, data collection may be important for more accurate costing, analysis for pricing, and other uses, such as monitoring quality and safety and research and evaluation. Some states have started data collection in some of these areas, but a nationally consistent approach could provide greater utility for the intended uses of the data. The key gaps identified are:

- Asynchronous and synchronous virtual care involving interactions between clinicians: These include interactions between clinicians at different public hospitals, and with clinicians from other sectors (for example primary care, aged care and disability). This is also a gap for in-person care delivery. It is also acknowledged that data collection on care involving interactions between clinicians may potentially be onerous and outweigh benefits. A short-term collection involving a sample of services could be used to test the feasibility and value of this data.
- RPM provided in non-admitted settings: RPM is a continuous activity rather than a discrete service. A short-term collection involving a sample of services could be considered to identify the nature of the activities that occur outside of direct patient encounters.
- HITH provided virtually: Currently the instance of HITH is recorded (and the days in HITH), but not the mode of delivery.
- Virtual care provided by one public hospital to another hospital as part of admitted patient care or an ED presentation.

3.3 Current funding approach across Australia

Australian public hospital services are organised into patient service categories, with IHACPA developing suitable classification systems that support ABF in each category. Classification systems describe and categorise patients within each service category into clinically meaningful groups that are comparable in terms of resource use. Table 4 shows the classification systems used across each of the patient service categories. The classification systems do not differentiate between care provided virtually versus in-person,

except for two classes in Tier 2 that capture the location of the patient (Tier 2 class 20.55 *Telehealth – patient location* relating to medical and nurse practitioner consultations and Tier 2 class 40.61 *Telehealth – patient location* relating to nursing and allied health consultations).

Table 4 | Classification systems used across patient service categories

Service category	Classification	Current version (2024–25)
Admitted acute care	Australian Refined Diagnosis Related Groups (AR-DRGs) classification	AR-DRG Version 11.0
Subacute and non-acute care	Australian National Subacute and Non-Acute Patient Classification (AN-SNAP)	AN-SNAP Version 5.0
Emergency care – EDs	Australian Emergency Care Classification (AECC)	AECC Version 1.0
Emergency care – Emergency services	Urgency Disposition Groups (UDG)	UDG Version 1.3
Non-admitted care	Tier 2 Non-Admitted Services Classification (Tier 2)	Tier 2 Version 9.0
Mental health care*	Australian Mental Health Care Classification (AMHCC)	AMHCC Version 1.0

* Does not include non-admitted and residential mental health care, which is currently block funded.

Apart from block funding provided for specific virtual care services under the NEC Determination, virtual care is funded in the same way as in-person care under ABF. For example, a neurology consult delivered by a hospital outpatient department receives the same NWAU whether it is delivered via telephone, video conference or in-person.

The NHRA defines in-scope hospital services as all admitted services, all ED services and other outpatient, mental health, subacute or other services that could reasonably be considered a public hospital service.

3.3.1 Key features of ABF and implications for virtual care funding

“Activity” under ABF means the target of funding is a clinical encounter

Clinical encounters are defined differently for each patient service category, but in each instance, they involve a therapeutic/clinical interaction between a patient and a healthcare provider(s) and documentation of the interaction in the patient's medical record. For example, for non-admitted care, diagnostic tests are not considered as separate service events. Instead, they are grouped together with clinical consultations into a single service event for a patient, which is then categorised under a Tier 2 class. This grouping approach means that interactions between clinicians, without direct patient involvement, are not funded as separate events.¹⁶ It is assumed that these interactions are captured in the costs reported by hospitals and linked to relevant patient clinical encounters, which is used to develop the price weights for the Tier 2 classes and therefore is reflected in these weights.

However, despite standards articulated for national costing (i.e. the Australian Hospital Patient Costing Standards, which underpin the NHCDC), when clinician-to-clinician support occurs between hospitals,

¹⁶ There are a few exceptions to the above. For example, home-based treatments haemodialysis, peritoneal dialysis, and total parenteral and enteral nutrition are time-based (monthly), rather than by individual encounters. Additionally, MDCCs, where clinicians discuss and coordinate patient care for one or more patients are counted as separate service events.

hospitals may not accurately allocate costs to clinical encounters, and consequently, the costs may not be reflected in pricing (see “Funding under ABF follows the patient” below).

This approach to funding means that for virtual care delivery, some virtual care activities, such as RPM, care navigation and synchronous and asynchronous clinician-to-clinician support are not funded as separate activities. They are grouped with the clinical encounters that they contribute to. For example, for RPM, the costs of clinician time associated with monitoring that does not involve a consultation with the patient are assumed to be costed to the clinical encounters that occur, and thus reflected in the price for these clinical encounters.

Funding under ABF follows the patient

Hospitals count activity relating to patients treated at their facility, categorise the activity according to the relevant service category and group it to the appropriate classification for that category. This activity is submitted together with costs to inform national pricing. External input to “producing” hospital activity is not necessarily included in the costs reported by hospitals to the NHCDC, despite there being provision for such reporting (as mentioned above). Where hospitals cross-charge or otherwise redistribute third-party costs for the provision of external services when creating the cost ledger, these costs may be included in the NHCDC and thus more accurately reflected in national pricing.

This approach of funding means that for virtual care delivery, unless the costs of external support are cross-charged or otherwise allocated to the hospital where the patient is located and included in the NHCDC costs compiled for those patients, they may not be fully reflected in national pricing.

National pricing is based on average costs across patients and hospitals

National pricing reflects the average costs incurred by a diverse range of patients and hospitals. To facilitate funding, patients are grouped based on clinically similar characteristics through classification systems (examples are the AECC and AR-DRGs). These classifications also aim to group patients based on their level of resource use. ABF is designed to promote efficiency rather than to precisely reflect the costs of every service delivered, as such, sometimes ABF does not account for subgroups within classes that may require additional resources. It would also not be feasible to account for and accurately price each variation in care provision.

For instance, non-admitted patients being monitored remotely are allocated to Tier 2 classes based on where the clinical consultations related to the monitoring occur. The classes do not currently differentiate between patients that require ongoing monitoring and other patients whose care needs may be less intensive. While local non-admitted services may reflect the costs of remote monitoring in NHCDC submissions, nationally, the costs are averaged across all patients in the same Tier 2 classes regardless of whether they are being monitored, including patients of hospitals that do not use remote monitoring.

Ideally, the classification system could distinguish between patients needing more resource-intensive care based on patients’ characteristics. However, this is currently not always possible. Instead, other approaches have been used, such as reflecting the intervention in the class (e.g. angioplasty/angiography) or through funding adjustments (i.e. an uplift to the NWAU based on the use of a specific intervention, for example, hours in a specified intensive care unit).

IHACPA is currently developing a new non-admitted patient care classification to replace Tier 2. Tier 2 is a provider-based classification. It is intended for the new classification to be based on patient characteristics, such as diagnosis, complexity, and other patient factors that have an impact on resource use. This approach aims to group patients with similar complexities more accurately, allowing costs and pricing to be driven by patient complexity rather than the specific interventions performed.

Bundling under ABF

Under the funding framework established by IHACPA through the national pricing models, public hospital health services for admitted, non-admitted and ED patients are structured around a bundled payment approach. This model consolidates medical, nursing, allied health and associated services into a single payment, contrasting with fee-for-service, where each medical intervention is billed separately. Note that, in the NEP Determination, the concept of “bundling” is applied in a relatively narrow sense. This means that while services within a single clinical encounter are grouped into one bundle, the funding does not extend across the entire patient care pathway for a specific treatment or condition. Admitted and non-admitted patient services are still distinctly categorised and funded separately, unlike some bundled payment models in the USA, which cover a full treatment cycle across multiple settings, integrating both admitted and non-admitted encounters.

Under the NEP Determination, for non-admitted patients, the funding is based on “service events” that include all necessary services provided for the event. *This includes diagnostic tests as well as any specialist advice a clinician may seek from another clinician within the hospital or externally.* With a few exceptions, bundling encompasses the entirety of care within a single payment, regardless of the variety of services rendered during the event. For admitted patients, payment covers all aspects of care for “admitted patient episodes”. *This includes diagnostic tests, surgical procedures, medical consultations and medications,* integrating costs into a payment aimed at covering the complete range of hospital services for the specific admission.

While virtual care models like Telestroke present challenges due to the funding being bundled into a clinical encounter and directed at the hospital where the patient is physically present, this is not a novel issue within the Australian public hospital system. In the Telestroke example, specialists provide critical advice on stroke management from remote locations, influencing treatment plans without being the primary treating physicians. This setup mirrors traditional roles seen in other areas of medicine where specialists such as pathologists or radiologists influence patient care indirectly. Their contributions usually do not involve direct patient contact and are incorporated within the same bundled payments that cover direct care services. Often hospitals have cross-charging arrangements for this, and this applies whether the services are provided in-house or externally. The charges are included in the costs for patients who use these services. Similarly, in infectious disease consultation for antimicrobial stewardship, specialists analyse patient data and microbial cultures to guide treating physicians on the optimal use of antibiotics. They also often do not consult directly with patients, but their costs are bundled into the payment for the patient’s clinical encounter.

3.3.2 A process exists for accommodating innovative models of virtual care

Under the *National Health Reform Act 2011*, IHACPA is charged with determining the eligibility of public hospital services to be funded by the Commonwealth.¹⁷ Eligibility of admitted and emergency care services is determined by the scope of activity defined in the national data set specifications.

Similarly, eligibility for non-admitted services is determined by meeting the definition of a non-admitted service event. There are two broad categories of in-scope public hospital non-admitted services:¹⁸

Category A: Includes service events provided in all clinics in the Tier 2 classes in the 10, 20 and 30 series. However, the general practice and primary care (20.06) clinic is considered by the Pricing Authority as not eligible for Commonwealth funding as a public hospital service.

¹⁷ Independent Health and Aged Care Pricing Authority. (2023). *General List of In-Scope Public Hospital Services Eligibility Policy*. https://www.ihacpa.gov.au/sites/default/files/2023-08/General_List_of_In-Scope_Public_Hospital_Services_Eligibility_Policy-Version_8.0.PDF

¹⁸ IHACPA. (2024). *National Efficient Price Determination 2024–25*.

Category B: Includes other non-admitted patient services and non-medical specialist outpatient clinics – Tier 2 classes in the 40 series, which must:

- closely relate to an inpatient admission or an ED attendance, or
- be intended to substitute for an inpatient admission or ED attendance, or
- be expected to improve the health or better manage the symptoms of persons with physical or mental health conditions who have a history of frequent hospital attendance or admission.

In addition to Category A and B services defined by IHACPA, under the NHRA Addendum 2020–25, exploration and trial of innovative care models to improve efficiency and health outcomes is encouraged. The Telestroke service in New South Wales, where local emergency department doctors consult specialist stroke physicians virtually to provide the local patient with specialist stroke diagnosis and treatment, is an example of these models. This model has been implemented by a few states and is being block funded nationally. The NHRA Addendum 2020–25 includes funding for models that are primarily delivered outside of traditional hospital settings.

IHACPA's processes for expanding the General List of In-Scope Public Hospital Services and the NHRA Addendum 2020–25 provide initial opportunities to support new and emerging virtual care models in the future that have the potential to improve system efficiency and patient outcomes but are unable to be captured by current data collections under ABF. As with virtual ED models, longer term pricing and funding arrangements may still need to be found for services that are initially block funded through this process.

3.4 Alignment of current funding approaches to models of virtual care

Table 5 summarises the common models of virtual care and national funding for these within Australia.

The table shows that while there is a place for most of the virtual care models within the ABF framework, the costs of virtual care delivery may not be adequately captured against patient encounters, and thus not reflected in pricing, or may be averaged across patients within an ABF class, creating potential inadequacies for services that provide models that have higher costs.

Non-admitted models of virtual care are partially integrated into the existing ABF structures. These services are typically funded using the Tier 2 system, which also includes a multidisciplinary clinic adjustment for events involving multiple clinicians. However, gaps remain in how these models capture the costs and activities associated with virtual care. For instance, patients being monitored remotely for chronic conditions may be classified against many different Tier 2 classes (depending on the classification of the clinic that the patient is being managed by). Also, the costs associated with telehealth are averaged across all patients within a class, regardless of their actual use of virtual services. This averaging can obscure the true costs of virtual care delivery and potentially lead to underfunding of more resource-intensive virtual care models.

IHACPA acknowledges that Tier 2 is not an ideal classification for hospital outpatient care. The classification is currently under review with the intention to create a new classification that will be based on patient characteristics rather than provider characteristics. This may help address these identified issues and gaps.

In admitted services, virtual care such as virtual ward rounds and HITH delivered virtually are recognised and funded equivalently to traditional care under the respective AR-DRGs, AN-SNAP or AMHCC classifications. However, some elements of virtual care may not be costed appropriately (such as remote monitoring delivered to admitted patients through an external source). This inconsistency can lead to funding allocation that does not truly reflect the costs of these additional resources used.

Virtual emergency care services are the least integrated under ABF. Since funding is based on the location of the patient, the costs of models like Telestroke (where care is delivered externally) may or may not be included in national pricing; this depends on whether the services are cross-charged to the facility where the patient is located, or are redistributed when creating the cost ledger. Virtual EDs fall outside the scope of ED care under ABF and models where telehealth video consultations are delivered by EDs are currently block funded.

Overall, the key issues with pricing and funding virtual care models under ABF include the lack of specific data collection for virtual care activities and inconsistent inclusion of the costs associated with virtual care in national costing, which underpins pricing. Furthermore, even when costs of virtual care are reflected in national cost data, they are often averaged with those of in-person care. This could potentially mask any differential costs of virtual care that could be explored for pricing purposes.

Table 5 | Current funding for key virtual care models and issues in costing and pricing

Model	Funding	Issues
Non-admitted services		
Outpatient telehealth consultations	<p>General non-admitted patients are funded using Tier 2. This is according to the Tier 2 class that the local clinic is mapped to.</p> <p>For 2024–25, community mental health is being shadow priced using the AMHCC. It is anticipated that non-admitted mental health consumers in the mental health service category will be funded using the AMHCC from 2025–26. The AMHCC does not distinguish between in-person and virtual care delivery.</p> <p>For general non-admitted patients, if a patient is in another health service while receiving the telehealth consultation, the service supporting the patient is funded via the Tier 2 classes 20.55 and 40.61 <i>Telehealth – patient location</i>. This is in addition to the Tier 2 class payment for the clinician providing the service.</p> <p>This convention does not apply to mental health patients classified to the AMHCC.</p>	<p>The costs of telehealth consultations classified to Tier 2 classes are reported in the NHCDC and reflected in pricing for non-admitted service events. However, except for the Tier 2 classes 20.55 and 40.61 <i>Telehealth – patient location</i>, pricing for Tier 2 classes is averaged across in-person and virtual care delivery.</p> <p>Non-admitted mental health is currently shadow priced. The classification does not differentiate between in-person and virtual care delivery.</p>
Chronic care management	<p>Patient and clinician interactions are funded using Tier 2. This is according to the Tier 2 class that the local clinic is mapped to, supplemented by the multidisciplinary clinic adjustment where multiple clinicians are involved in the service event.</p> <p>Clinician-to-clinician interactions are incorporated into funding for the patient service event, except for MDCC, which is reflected in a separate Tier 2 class (20.65 or 40.62).</p> <p>RPM is also incorporated into funding for the patient service event.</p>	<p>The costs of RPM are reflected in pricing for service events to the extent that jurisdictions report these costs through the NHCDC. However, even when reported, jurisdictions are concerned the costs are averaged across all patients for the corresponding Tier 2 class, including those who do not use RPM. However, there is limited jurisdictional data available to support consideration of whether patients using RPM represent a significant proportion of the relevant Tier 2 classes.</p>

Model	Funding	Issues
Care navigation	<p>Clinical and patient interactions meeting the definition of a “service event” are funded using Tier 2 (according to the Tier 2 class that the local clinic providing the service event is mapped to).</p> <p>For patients in the mental health service category, data collection allows for service events where the consumer is not present (i.e. it is undertaken with a third party). However, the encounter must still involve a dated entry in the consumer’s medical record.</p>	<p>The requirement for a “service event” for funding under Tier 2 may exclude some activities undertaken by care navigators, such as contacting other providers to coordinate appointments for the patient.</p> <p>Care navigators may also provide services alongside other clinicians and thus their services may not be represented as a Tier 2 class count/claim. Instead, they may be part of a multidisciplinary team, in which case their contribution to a patient service event may attract a “multidisciplinary clinic adjustment” for that event.</p> <p>The costs of care navigation are reflected in pricing for service events to the extent that services report these through the NHCDC. However, even when reported, they are averaged across all patients for the Tier 2 class, including those that do not use a care navigator.</p>
Virtual specialist care to other sectors	<p>Clinical and patient interactions are funded using Tier 2. This is according to the Tier 2 class that the local clinic is mapped to, supplemented by the “multidisciplinary clinic adjustment” where multiple clinicians are involved in the service event.</p> <p>Clinician-to-clinician interactions are incorporated into funding for the patient service event, except for multidisciplinary case conferencing, which is reflected in a separate Tier 2 class (20.65 or 40.62).</p>	<p>The costs of telehealth consultations classified to Tier 2 classes are reported in the NHCDC and reflected in pricing for non-admitted service events. However, pricing for Tier 2 classes involving patient encounters is averaged across in-person and virtual care delivery.</p>
Admitted services		
HITH	<p>HITH is funded in the same way as admitted patients (i.e. admitted acute care using AR-DRGs or subacute and non-acute care using AN-SNAP end-classes).</p>	<p>HITH is not necessarily virtually provided. However, it can have elements of virtual care, including telehealth as a substitute for in-person home visits and RPM. While the current definition of HITH from the AIHW does not stipulate a requirement for in-person daily home visits,¹⁹ many jurisdictions reported having this as a local requirement. Therefore, some jurisdictions have refrained from expanding virtual care in this setting.</p> <p>Private patients in public hospitals cannot be treated as HITH unless agreed with the private insurer.</p> <p>HITH is costed in the same way as other admitted care. While some health services</p>

¹⁹ AIHW. (2024a). Hospital in the home care. <https://meteor.aihw.gov.au/content/327308>

Model	Funding	Issues
		take care to distribute costs to HITH patients in a way that reflects that the patient does not occupy a hospital ward, this is not done universally. Therefore, HITH costs in the NHCDC may not accurately reflect the costs of this mode of delivery.
Virtual inpatient care	<p>Virtual inpatient care can include virtual ward rounds as well as other virtual in-reach for admitted patients.</p> <p>All care provided to admitted patients, including elements provided virtually, are incorporated into funding for admitted patients (i.e. acute admitted care using AR-DRGs, subacute and non-acute care using AN-SNAP or mental health using the AMHCC).</p>	In most instances, funding under ABF follows the patient. Therefore, when external clinicians are involved in delivering care virtually, funding is to the hospital where the patient is admitted. This requires local redistribution of funds to recognise input by clinicians from different hospitals providing care to an admitted patient.
Emergency care services		
Virtual ED	<p>Virtual EDs are not currently funded under ABF. According to the AIHW definition of ED care, the scope includes only physical presentations.²⁰</p> <p>However, there are currently provisions for telehealth video consultations delivered in EDs to be block funded under the NEC Determination.</p>	<p>Virtual ED models vary across jurisdictions. For example, in some instances the services are public facing while others are accessed via a screening or service streaming process (e.g. Healthdirect).</p> <p>No costing of virtual ED is available at a patient level.</p> <p>Jurisdictions reported excluding the costs of virtual ED from the NHCDC.</p>
Clinician-to-clinician emergency care	ED activity is classified and funded using the AECC, which is based on an ED visit and the AECC's six variables. ²¹	<p>Funding under ABF is to the hospital where the patient is treated. Therefore, where clinicians from other hospitals are providing support, this requires local redistribution of the funds to recognise this input.</p> <p>Clinician-to-clinician support is included in the costing of ED activity submitted via the NHCDC only when the clinician providing the support is in the same hospital as the patients for whom the support is provided.</p> <p>It is also likely that costs of clinicians providing support to patients of other hospitals are distributed amongst the patients in the hospital of the clinician providing the support rather than the clinician receiving the support.</p>

²⁰ Australian Institute of Health and Welfare. (2024b). *Non-admitted patient emergency department care NMDS 2024–25*. <https://meteor.aihw.gov.au/content/775643>

²¹ Australian Institute of Health and Welfare. (2024a). *Emergency department stay*. <https://meteor.aihw.gov.au/content/472757>

Model	Funding	Issues
Condition specific virtual emergency care	Funding depends on where the patient is treated. ED activity is funded using AECC end-classes and admitted patient care is funded using AR-DRGs.	Unless cross-charged to the location of the patient, costs of condition specific virtual emergency care are not reflected in NHDC costing and thus not included in pricing for AECC end-classes or AR-DRGs.
Clinician-to-clinician interactions		
Synchronous clinician-to-clinician consultations	Except in very limited circumstances, clinician-to-clinician interactions are not recognised as “activity” under ABF. They are an input to care provided to patients. Funding under ABF is for a clinical encounter, which must involve an interaction between a clinician and a patient, have therapeutic/clinical content and is documented in the patient’s medical record.	Although the NHDC has provisions for clinician-to-clinician support to be costed, this usually only occurs when the clinician providing the support is in the same hospital as the patients for whom the support is provided. It is also likely that costs of clinicians providing support to patients of other hospitals are distributed amongst the patients in the hospital of the clinician providing the support rather than the clinician receiving the support.
Asynchronous specialist consultations	Except in very limited circumstances, clinician-to-clinician interactions, including asynchronous methods, are not recognised as “activity” under ABF. They are an input to care provided to patients. Funding under ABF is for a clinical encounter, which must involve an interaction between a clinician and a patient, have therapeutic/clinical content and is documented in the patient’s medical record.	Although the NHDC has provisions for clinician-to-clinician support to be costed, this usually only occurs when the clinician providing the support is in the same hospital as the patients for whom the support is provided. This is not always the case for specialist clinicians receiving patient information and subsequently providing advice on patient care, for example, radiological images.

Further detail on each model can be found in Table 3.

3.4.1 Hospital and primary care interfaces are blurred with expansion of virtual care

Virtual care has expanded opportunities for hospital specialists to work more closely with GPs, either to undertake joint consultations with patients or provide specialist advice to the GP. Under the ABF counting rules, advice to GPs by hospital specialists is not separately counted for non-admitted funding. This is the same rule that applies for advice provided to other clinicians within the hospital or from other hospitals. Under the ABF framework, funding is for direct clinical encounters with patients. Advice provided to other clinicians is assumed to be costed into patient clinical encounters and priced accordingly.

Funding for joint consultations between hospital specialists and GPs are subject to the rules of the MBS. Under the MBS, generally, both a specialist and a GP cannot charge separately for the same consultation if they are seeing the patient together at the same time (this applies to hospital specialists as well as specialists operating privately). Typically, only the clinician who provides the primary service or has the main responsibility for the patient during that specific consultation can bill Medicare. When a GP and a specialist consult together, they need to determine who is leading the consultation, and that clinician would be the one to bill for the service. The other clinician’s involvement would be considered part of the

collaborative care but would not be billed separately under Medicare. However, these situations are less common and would usually require clear documentation and justification to comply with MBS guidelines.

3.4.2 Many innovative models of virtual care have launched under block funding, but could fit the current funding paradigms


Models that do not fit within existing funding mechanisms can often be block funded under the NEC Determination or through the state or territory government. Challenges with existing arrangements often emerge where virtual care service provision crosses multiple hospital services, funding streams (e.g. primary care) or jurisdictional boundaries. The following case studies highlight some examples of models of virtual care, where there are elements that do not fit within existing funding mechanisms identified throughout the consultation process and literature review.

Figure 7 | virtualKIDS Urgent Care Service²²


VIRTUAL CARE MODEL

virtualKIDS Urgent Care Service (virtualKIDS)


New South Wales



Telehealth



Emergency



Clinician and Patient

Paediatric-specific virtual healthcare service

virtualKIDS offers video consultations to children up to 16 years old with non-life-threatening health concerns in NSW and select border areas. Run by the Sydney Children's Hospitals Network (SCHN) and Hunter New England Local Health District (HNELHD), the service is operated by paediatric nurses and paediatricians.

The virtualKIDS team assesses, treats, and refers children as needed. This includes providing information for at-home care, arranging consultations with paediatricians, referring to local healthcare facilities, and providing follow-up care through further video calls.

Two key services are provided under virtualKIDS:

1. virtualKIDS Acute Review service provides 24/7 clinical support to patients and their carers for up to 72 hours at home to facilitate earlier and safe discharge from an ED or paediatric ward.
2. A virtual urgent care service, following an initial triage through Healthdirect, primarily for rural patients.

Counting, costing and funding

virtualKIDS as a post-ED discharge review service is eligible for ABF under the Tier 2 non-admitted classification. The virtualKIDS virtual urgent service receives block funding under the "other public hospital programs" service category through the NEC Determination.

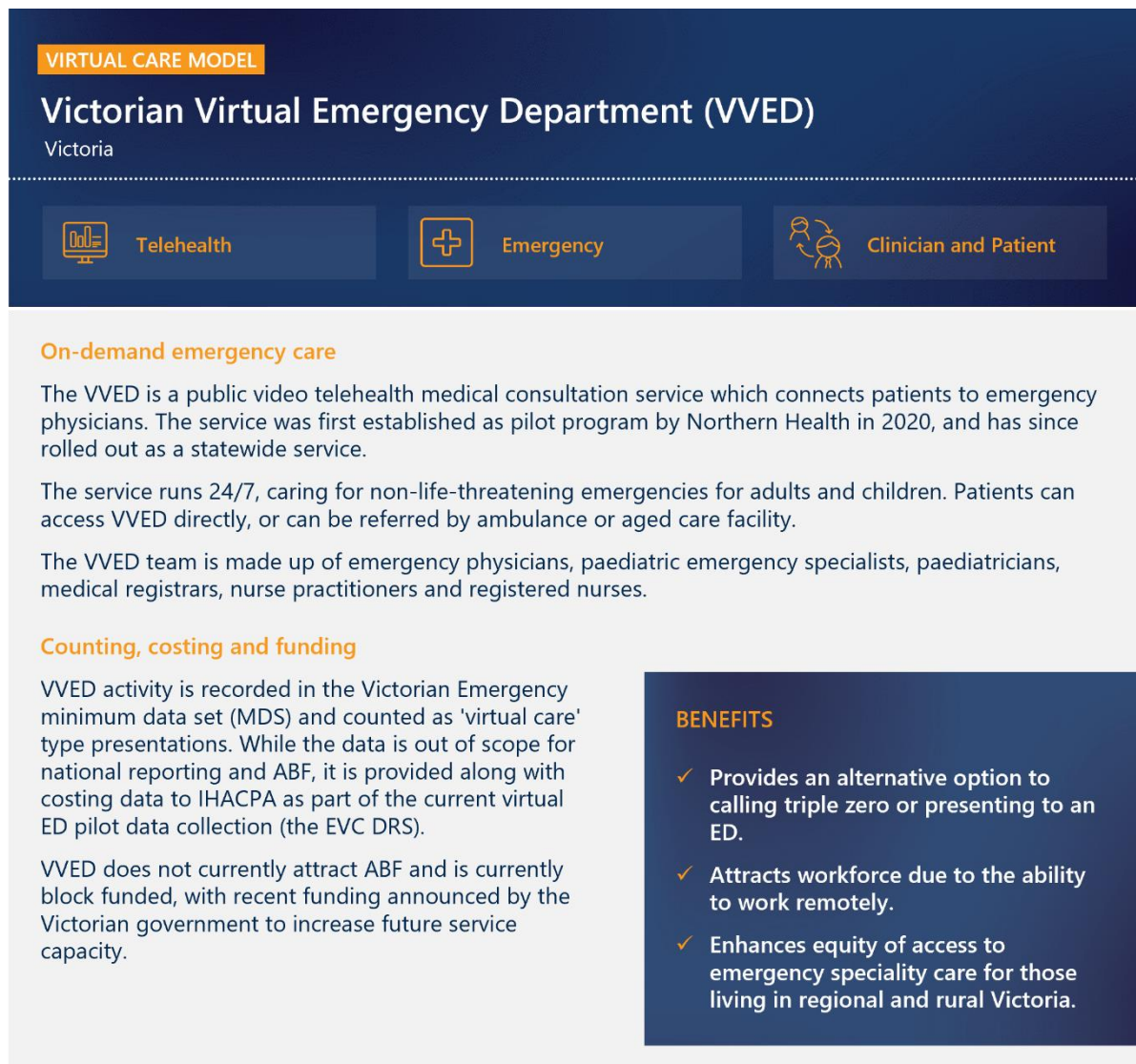
The service is a separate business unit, and although data are collected on patients using the service, the costs are not allocated to individual patients.

BENEFITS

- ✓ Contributes to hospital avoidance.
- ✓ Supports patients transitioning out of hospital, who can recover at home.
- ✓ Provides multidisciplinary care to patients without the need to travel.

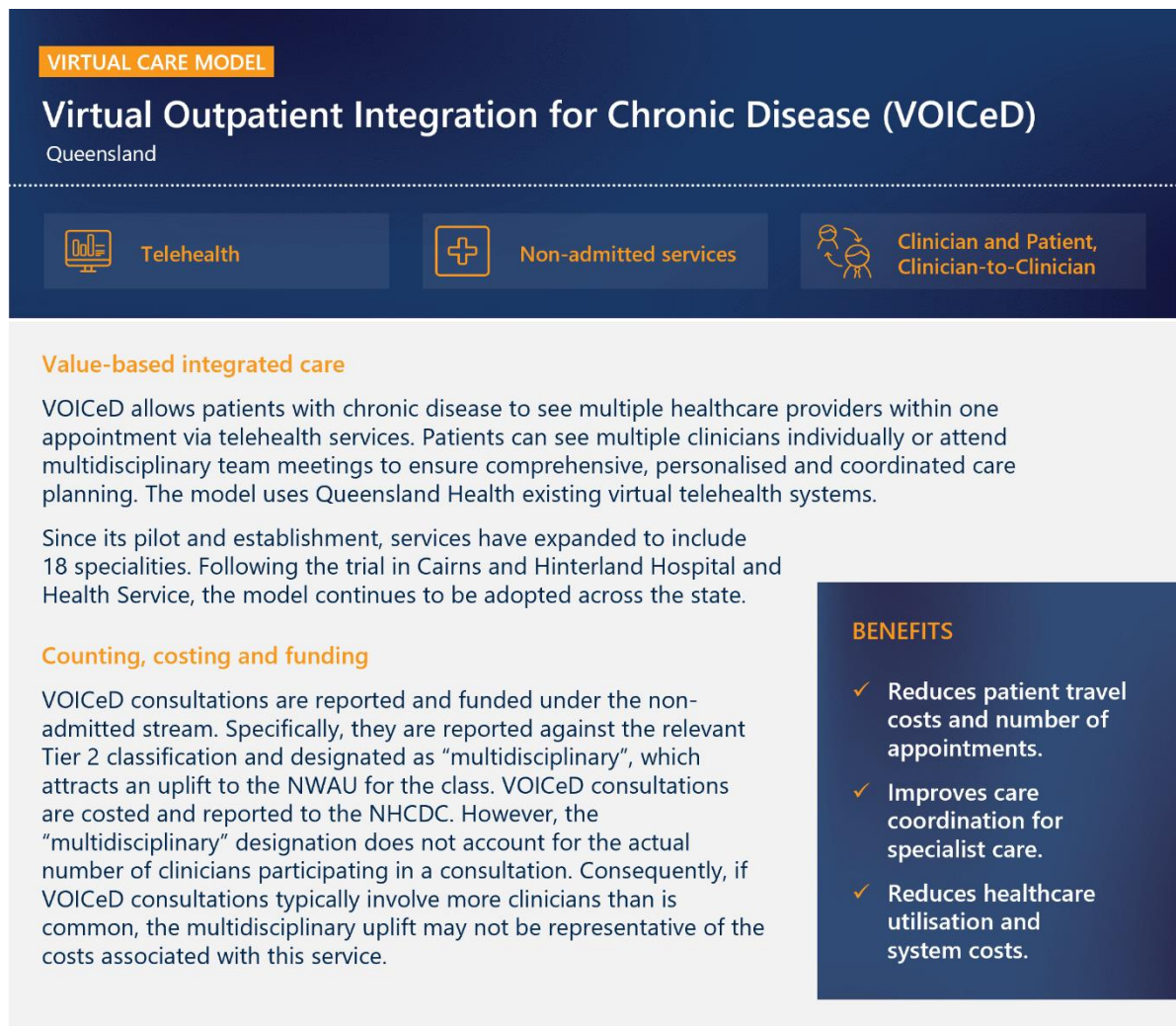
²² NSW Health. *virtualKIDS Urgent Care Service*. Retrieved April 2024 from <https://www.health.nsw.gov.au/Hospitals/Pages/urgent-care-virtual-kids.aspx>

Figure 8 | Victorian Virtual Emergency Department (VVED)²³



²³ Better Health Channel. *Victorian Virtual Emergency Department (VVED)*. Retrieved April 2024 from <https://www.betterhealth.vic.gov.au/health/servicesandsupport/victorian-virtual-emergency-department-vved>

Figure 9 | Virtual Outpatient Integration for Chronic Disease (VOICeD)²⁴



²⁴ Clinical Excellence Queensland. *Virtual Outpatient Integration for Chronic Disease (VOICeD)*. Retrieved April 2024 from <https://clinicalexcellence.qld.gov.au/improvement-exchange/virtual-outpatient-integration-chronic-disease-voiced>

Figure 10 | Health in a Virtual Environment (HIVE)²⁵

VIRTUAL CARE MODEL

Health In a Virtual Environment (HIVE) service

Western Australia

- Telehealth and Remote Patient Monitoring
- Admitted services
- Clinician-to-Clinician

Real-time inpatient monitoring

HIVE is Western Australia’s first admitted RPM service. It is run by East Metropolitan Health Service (EMHS), with the command centre located at Royal Perth Hospital. The model uses an Integrated Care Management System enabled by AI and RPM technology to track patient vital signs, such as heart rate, blood pressure and oxygen. Clinicians are notified when signs of clinical deterioration are detected. When an alert is generated, HIVE clinicians use a two-way audio-visual system to collaborate with staff on the ward.

The HIVE currently provides two distinct service streams:

1. Royal Perth Hospital and Armadale Hospital
2. Kalgoorlie Health Campus High Dependency Unit

Counting, costing and funding

The HIVE is a distinct operational unit within EMHS, located in the Command Centre at Royal Perth Hospital, established with funding from the WA Government. For cost allocation purposes, a file containing each patient’s medical record number (MRN), ward, and the start and end times of the service is provided to the costing staff. This data enables apportionment of HIVE service costs to patients at Royal Perth Hospital based on the duration of monitoring. Consequently, these costs are captured in the NHCDC. However, while the costs of HIVE services are intended to be covered under ABF, there is no explicit funding allocated specifically for HIVE under ABF; instead, these costs are absorbed into AR-DRG funding.

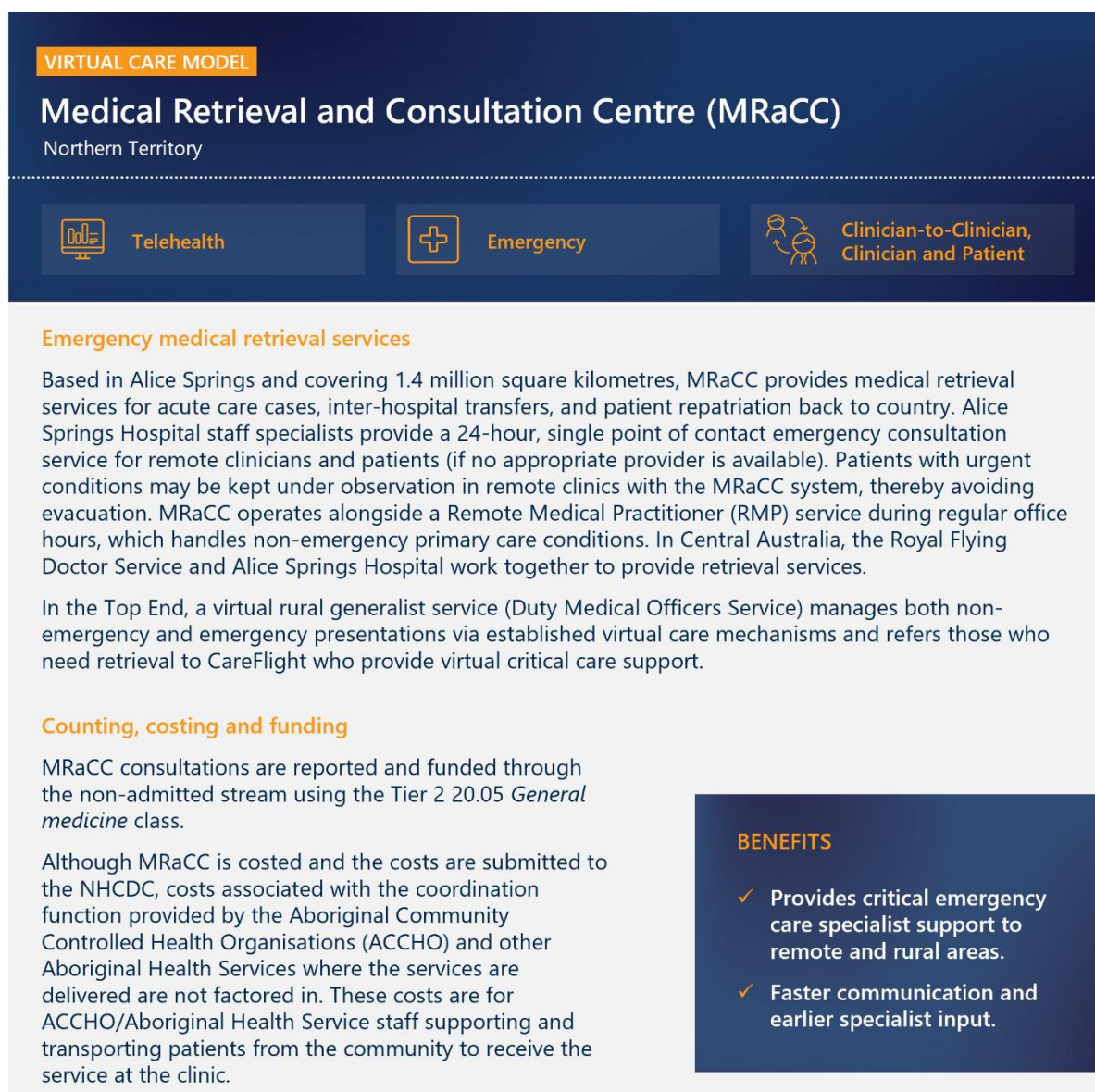
Costs associated with HIVE services provided to patients from Kalgoorlie hospital are not factored into their treatment costs and thus are not represented in the NHCDC. Additionally, Royal Perth Hospital does not bill Kalgoorlie hospital for the HIVE services rendered to their patients.

BENEFITS

- ✓ Predicts patient deterioration to enable pre-emptive intervention.
- ✓ Provides secondary monitoring for high dependency patients to support the treating team.
- ✓ Supports high acuity service in a ward setting to preserve ICU capacity.

²⁵ Government of Western Australia East Metropolitan Health Service. *HIVE – Health in a Virtual Environment*. Retrieved April 2024 from <https://emhs.health.wa.gov.au/Hospitals-and-Services/Services/HIVE>

Figure 11 | Medical Retrieval and Consultation Centre (MRaCC)²⁶



3.5 Other considerations to inform national pricing of virtual care delivery

Improved integration of virtual care into the national pricing model will also need to consider broader Australian health system challenges. Under the NHRA, IHACPA is responsible for determining the NEP and NEC for public hospital services each year, which forms the basis for calculating the Commonwealth funding contribution to public hospitals. State and territory governments also contribute funds for public hospital service delivery in addition to the Australian Government, including funding for elements that are out-of-scope of the NHRA (for example, capital infrastructure and technology). They also provide state-level guidance on regulatory aspects.

²⁶ Northern Territory Government. *Aerial medical services*. Retrieved April 2024 from <https://nt.gov.au/wellbeing/hospitals-health-services/aerial-medical-services>

In the consultations, multiple LHNs and health services shared common challenges to uptake in virtual care within hospital services and highlighted the need for stronger integration at the jurisdictional and national level. Common barriers include:

- Discrete funding sources across the public health system.
- Inconsistent guidelines and standards across jurisdictions.
- Significant infrastructure and upfront capital costs to invest in technologies.
- Foundational requirements for accessibility, coverage and equity of access.
- Workforce capacity and capability pressures, particularly in rural and remote areas.

Discrete funding sources across the public health system

Virtual care is breaking down the boundaries between ‘bricks and mortar’ hospitals, allowing health services to share expertise and resources. Currently, funding across the health system is separated into distinct streams, particularly across primary and specialist care, NDIS and aged care. A clinician’s ability to deliver the best care to a patient may be limited by where the service is being provided and how they are funded. Health services cited examples where current funding arrangements did not support optimal care. Case conferencing across primary care or in-reach into aged care facilities were common examples. Furthermore, services that are provided across states require cross-charging.

There are differences across the health system in how virtual care is funded. The requirements for the use of virtual care may differ across hospital and non-hospital based health services (including primary care and private specialists), and across the NDIS and aged care. These differences across the sectors are not always clear to clinicians or patients.

Roles and responsibilities of governments relating to funding of public hospital services

The funding of public hospital services in Australia is shared between the Australian Government and state and territory governments. The Australian Government funds a proportion of public hospital activity using ABF, as per the annual pricing advice developed by IHACPA. Additionally, the Australian Government provides block funding for services that are not suitable for ABF, typically for smaller regional hospitals or specialised services.

State and territory governments also fund hospital services and cover costs that are out-of-scope of the NHRA, such as capital infrastructure. State and territory governments are the direct system manager of public hospitals, including managing and distributing funds to LHNs.

While costs associated with purchasing IT in public hospitals are often considered capital costs and thus predominantly fall to state and territory governments, both levels of government collaborate on special projects of national significance or those targeting specific health priorities. For such projects, the Australian Government sometimes provides targeted grants or funding programs to encourage uptake or consistency across the states and territories.

Inconsistent guidelines and standards across jurisdictions, with no single ‘source of truth’

The complexity of Australia’s federated healthcare system, combined with an absence of a nationally consistent definition of models of virtual care, has contributed to variations in guidelines, standards and practices across jurisdictions and hospital services. This has also contributed to different interpretations of the current funding mechanisms. The HITH model provides an example of variations in its application

across various health services. While only accounting for 3% of current admitted services in Australia, the HITH model is seen to be a growing area of clinical service delivery.²⁷

Various sources cite different requirements for HITH. For example:

- The AIHW, in determining national eligibility, define HITH as “*Provision of care to hospital admitted patients in their place of residence as a substitute for hospital accommodation*” and requires adequate communication facilities to be present, but excludes patients who require continuous 24-hour assessment, treatment or observation.²⁸
- The HITH Society acknowledge that HITH can include different modalities, that is “**remote monitoring and/or video conferencing may be used as part of a HITH service but are not an entire substitute for HITH care**”.²⁹
- The Victorian Department of Health guidelines require patients to have “**face-to-face contact** with HITH staff to qualify for a reported HITH day, therefore services such as telephone calls cannot be reported to the Victorian admitted episode dataset (VAED)”.³⁰
- The Queensland Department of Health guidelines require: “minimum daily intervention or assessment by a HITH service to perform a clinical action or enable a clinical decision. This clinical interaction can be **delivered by various and flexible modes depending on the model of care and is not required to be face-to-face**”.³¹
- The South Australian Health Policy Guideline requires that to be eligible for HITH, patients need to receive at least one **face-to-face visit per day** and that the care must be equivalent to hospital level care.

Significant infrastructure and upfront capital costs to invest in technologies

The upfront capital needed to acquire and implement virtual technologies in health services may represent a significant barrier to innovation. In smaller health services, including in rural and remote communities, financial constraints can deter services from adopting virtual care, despite potential longer term cost savings. Health services were more likely to adopt virtual care models where jurisdictions and metropolitan hospitals provided common infrastructure and supporting digital platforms.

A harmonised patient experience through virtual technology heavily relies on technological integration or interoperability. Variations in medical record systems and in digital platforms may hinder efforts to integrate virtual care into clinical practice. Without the appropriate investment in enabling technology, services may struggle to provide a seamless service to their patients.

Foundational requirements for accessibility, coverage and equity of access

Regional and rural communities commonly cite poor internet and telephone service connectivity as a deterrent for virtual care. Virtual care has the potential to enhance equity of access for patients who live far from hospital services, however without the right reliable internet/telephone connectivity, this can exacerbate the equity divide.

Additionally, for Aboriginal and Torres Strait Islander people, or people with culturally and linguistically diverse backgrounds, interpreters or a liaison are often required to provide the most culturally appropriate

²⁷ Australian Institute of Health and Welfare. (2023). *Admitted patients: Admitted patient care 2021-22 5 What services were provided (Supplementary data)*. <https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients>

²⁸ AIHW. (2024a). *Hospital in the home care*. <https://meteor.aihw.gov.au/content/327308>

²⁹ Hospital In The Home Society Australasia. (2023). *HITH Society of Australasia Position Statement: Definition of Hospital in the Home*.

³⁰ Victoria Department of Health. (2011). *Hospital in the Home guidelines*. <https://www.health.vic.gov.au/publications/hospital-in-the-home-guidelines>

³¹ Queensland Health. (2023d). *Hospital in the Home: Standards of care*. <https://www.health.qld.gov.au/system-governance/policies-standards/guidelines/hospital-in-the-home/standards-of-care>

care. Where virtual modalities may allow a patient to receive care in their own community, insufficient provision of liaisons, local clinicians or interpreters, can prevent patients from being willing to take-up virtual service delivery options. Additional costs associated with involving interpreters or liaisons, can be inhibitive.

Workforce capacity and capability pressures, particularly in rural and remote areas

Virtual care is commonly adopted to alleviate workforce shortages, particularly in rural and remote areas. However, adopting virtual care requires equipping the workforce to deliver virtual care services safely and effectively. Privacy, data, monitoring, and clinical governance are complex considerations for the health workforce to balance, and as such education and training are key to ensure practitioners are confident to adopt virtual care approaches.

4 International classification and funding approaches to virtual care

This section outlines the key lessons for the Australian healthcare system from comparable international classification and funding approaches.

Five countries with comparable health services to Australia (Canada, Denmark, Germany, UK and USA) were selected, and interviews and desktop research were undertaken to explore the models of virtual care in operation, including any emerging models, and the approach to recording, costing and funding hospital-based virtual care activity. A summary of the key findings for each country's case study is presented below, including the applicability to the Australian healthcare system.

In seeking to identify the funding approaches used in the selected countries to support virtual care, consideration was also given to the role of value based health care (VBHC). While virtual care can contribute to value for patients, it is distinct from VBHC, and virtual care does not inherently align with or depend on VBHC.

VBHC and virtual care

VBHC focuses on optimising health outcomes for patients by aligning healthcare providers' incentives with the effectiveness and efficiency of the care they deliver. This approach can apply to both in-person services and virtual care.

Globally, health systems are aiming to integrate services more effectively, avoid unnecessary hospital visits, and improve cost efficiency. Strategies to achieve these goals include bundling payments across different types of care, implementing payments that emphasise patient outcomes and experience over service volume, and restructuring health service governance to break down sectoral barriers ("silos").

While virtual care can contribute to breaking down service silos and can provide other benefits such as enhancing access and clinical collaboration, it is distinct from VBHC. Virtual care is a modality and can be incorporated into diverse funding frameworks. For example, in the USA, organisations like Kaiser Permanente use virtual care within their global payment systems designed to optimise patient health outcomes. However, the deployment of virtual care does not inherently align with or depend on VBHC. In Australia, the broader agenda of structural health reforms, including VBHC, is being advanced through the NHRA and other initiatives. These efforts aim to integrate effective health care practices, including virtual care, into a comprehensive system that prioritises value and outcomes.

The hypothesis that virtual care could contribute to VBHC by potentially improving health outcomes and cost efficiency appears logical, but it has not yet been thoroughly tested in Australia or internationally. Evaluating the contribution of virtual care to VBHC will require rigorous assessment to determine if virtual interventions can indeed deliver these anticipated benefits effectively.

4.1 Key lessons for Australia from international case studies

The key lessons for Australia from the five international case studies are outlined below.

- **Enabling providers local flexibility in choosing modes of care delivery.**

There are flexibilities within the new National Health Service (NHS) Payment Scheme in England that enable innovative local models of care to be funded, whereby commissioning bodies can negotiate contracts with hospitals around volume and price for in-person and virtual outpatient activity, without making a distinction between mode of delivery. In Denmark (Grey Zone diagnosis-related groups (DRGs)) and Germany (Hybrid DRGs), a subset of DRGs has been identified that are considered amenable to innovation and allow providers to decide on service settings and modalities of care, including models of virtual care.

Lesson 1: Ensure the national funding model continues to support a flexible approach to the selection of local service delivery modalities and enhances uptake of effective virtual care models in Australia.

- **Equivalence in reimbursement of in-person and virtual care as a principle of pricing.**

In the USA, some states have enacted legislation post COVID-19 to ensure providers receive the same reimbursement for telehealth services as would be provided for in-person care, to not create a barrier or disincentive to employ virtual care where it is appropriate. In contrast to Germany, which sets a lower tariff for Hybrid DRGs, Denmark sets the same tariff for Grey Zone DRGs, regardless of setting or care modality in order to avoid disincentivising hybrid or virtual care.

Lesson 2: Price equivalence could be considered a guiding principle for reimbursement of virtual care to be included in a virtual care strategy for Australia where equivalent to in-person care.

- **Structured national approach to testing promising service innovations before adoption.**

Germany has a structured approach to introducing emerging models of care, with a national 'innovation fund' that allows for promising models to be piloted and evaluated before adoption into the basket of services available for reimbursement. Temporary payment codes are created to support the hospital service during the proof-of-concept phase. Health classifications in Australia have utilised the concept of placeholder codes for provisional use.³²

Lesson 3: Australia could strengthen access to temporary ABF support for promising service innovations involving virtual care under existing provisions of the NHRA Addendum 2020–25.³³

- **Redefining HITH programs to recognise virtual care as a substitution for in-person care.**

Emerging models of HITH in Canada, the USA and the UK are integrating virtual care, with RPM, assistive technology, and virtual in-person consults with a multidisciplinary team either partially or fully substituting in-person care in the home. Canada is currently seeking to establish national guidance on what constitutes a HITH model, given the current variations in models.

Lesson 4: The evolving role of virtual care in home-based models of admitted and non-admitted care requires Australia to clarify how HITH models of care will be defined and funded in the future.

³² For example, placeholder codes have been proposed for the Australian Classification of Health Interventions to facilitate activation of codes between development cycles for new and emerging health technologies – see IHACPA. (2021). Development of the admitted care classifications: Public Consultation.

³³ Council of Australian Governments. Addendum to National Health Reform Agreement 2024-25.

5 Recommendations for the improved integration of virtual care into the national pricing model

This section details the principles and recommendations to improve the integration of virtual care into the national pricing model.

There is currently limited national consistency in defining virtual care and capturing the associated activity and costs. Virtual care has become an integral component of public hospital services, with the potential to improve patient access to care and enhance the efficient use of hospital resources. The NHRA emphasises delivering safe, high-quality care in the right place at the right time, with a focus on prevention and managing health across one's lifetime. These goals align strongly with the emerging virtual care paradigm, offering flexible, accessible, and patient-centred health care.

There is opportunity for IHACPA, in collaboration with other Australian Government agencies and jurisdictional health departments, to address these challenges and improve the integration of virtual care into the pricing and funding for public hospital services through:

1. Developing a national definition and consistent taxonomy of virtual care delivery to provide clarity on the scope and boundaries for virtual care services.
2. Improving the visibility of virtual care in national data collections by identifying gaps in data collection processes and actioning the necessary changes to address those gaps.
3. Improving national consistency in identifying and allocating virtual care costs and consideration of an ongoing supplementary collection to the NHCDC to cost service innovations more appropriately.
4. Developing a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.

The following section details recommendations for a national strategy for the improved integration of virtual care into the broader health system. To enable continuing innovations in care and guide health system sustainability, IHACPA should consider:

- an addition to the IHACPA Pricing Guidelines, to ensure that pricing is not a barrier for services to adopting virtual care
- recommendations for the integration of virtual care into a national strategy.

5.1 Strengthen the IHACPA Pricing Guidelines to support clinically appropriate care across all modalities

The IHACPA Pricing Guidelines (see Appendix A) inform pricing and policy decisions for in-scope public hospital services and are reviewed annually within the Pricing Framework to support the annual determination of the NEP, NEC and price weights.

Stakeholders highlighted the following existing Pricing Guidelines as being of particular importance for pricing virtual care:

- Timely-quality care (particularly emphasising equitable access to high quality health services).
- Maintaining agreed roles and responsibilities of governments determined by the NHRA.

- Fostering clinical innovation.
- Minimising undesirable and inadvertent consequences.

Additionally, a principle echoed by multiple stakeholders, and demonstrated in case studies, is that pricing should be **modality agnostic for equivalent care**. For instance, Denmark has identified 80 DRGs, referred to as 'Grey Zone' DRGs, where care can be delivered through alternative service models. The tariffs for these DRGs remain consistent, regardless of whether the care is provided virtually or in-person.

The comparative cost of virtual versus in-person care remains uncertain. For instance, while there may be savings from reduced medical supplies, these could be offset by the expenses related to technology and licenses. The proposed modality agnostic pricing for equivalent care is intended to avoid creating a barrier or disincentive for services to use the modality of care that is deemed the most clinically appropriate.

5.2 Recommendations for the integration of virtual care into a national strategy

Five recommendations were identified through extensive consultation with Commonwealth agencies, jurisdictional health departments and LHNs to improve integration of virtual care within the Australian public health system, as summarised in Table 6.

Table 6 | Recommendations summary

Recommendation	
Definition and scope	Recommendation 1: Develop a national definition and taxonomy of virtual care.
Data collection	Recommendation 2: Improve the visibility of virtual care in national data collections.
Costing	Recommendation 3: Improve national consistency in the identification and allocation of virtual care costs.
	Recommendation 4: Consider supplementary collections to the NHCDC to cost service innovations (including virtual care).
Pricing and funding	Recommendation 5: Develop a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.

Further details on the recommendations are outlined below. Each recommendation is separated into the rationale and subsequent suggested actions for IHACPA's consideration.

Recommendation 1: Develop a national definition and taxonomy of virtual care.

Rationale:

Divergent standards and practices in virtual care delivery have emerged across jurisdictions (as identified in section 3.5). While numerous working groups and agencies have sought to develop national guidelines and practices to drive consistency (see section 3.1.4 for further detail), there is no national standard. A national standard is necessary to ensure uniformity.

The ACSQHC’s current definition of virtual care, adapted from ISO 13131:2021, and based on an international standard,³⁴ is suggested as the national definition for Australia. It defines virtual care as ‘Healthcare activity supported at a distance by information and communication technology service(s).’ Virtual care can be delivered by a range of modalities, including:

- telephone
- videoconferencing
- RPM
- store and forward
- website and mobile applications (apps).

Jurisdictions supported the use of this definition during this body of work. However, they noted that not all these modalities are in-scope for public hospital ABF. For example, website or mobile apps used for self-management without oversight from a healthcare professional are considered out of scope. Additionally, jurisdictions acknowledged that the list of modalities may quickly become outdated, and thus recommended that they do not form part of the definition of virtual care.

Instead, alongside the virtual care definition, a taxonomy to define and categorise models of virtual care that is regularly updated, is warranted, to support health services to understand what is in scope for funding purposes (that is, within IHACPA’s remit) and for other wider applications. A taxonomy for virtual care should include three categories to describe the scope of a virtual model of care:

1. **Setting**, including non-admitted, admitted, and emergency.
2. **Modality**, including telehealth, store and forward, and RPM.
3. **Interaction type**, including patient and clinician, and clinician-to-clinician.

This is illustrated in Table 7, in which the intersection between currently-available modalities, interaction type and setting can be used to describe virtual care models. The table below provides an illustrative framework, intended as a conceptual starting point. Further work will be required to refine and develop a comprehensive framework that aligns with national standards and policy objectives. The framework will also require regular review and updates to ensure its ongoing relevance.

Table 7 | Illustrative framework for models of virtual care

Model	Interaction type	Modality
Non-admitted services		
Outpatient telehealth consultation	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • Store and forward • RPM
Chronic care management	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM • Store and forward
Care navigation	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth

³⁴ ISO. 13131:2021 Health informatics - Telehealth services - Quality planning guidelines. <https://www.iso.org/standard/75962.html>

Model	Interaction type	Modality
Virtual specialist care to other sectors	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Admitted services		
Hospital-in the-home (HITH) ³⁵	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Virtual inpatient care	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Emergency care services		
Virtual emergency department (ED)	<ul style="list-style-type: none"> • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth
Specialist emergency care	<ul style="list-style-type: none"> • Clinician-to-clinician • Patient and clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Condition specific virtual emergency care	<ul style="list-style-type: none"> • Patient and clinician • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Clinician-to-clinician interactions		
Synchronous clinician-to-clinician consultation	<ul style="list-style-type: none"> • Clinician-to-clinician 	<ul style="list-style-type: none"> • Telehealth • RPM
Asynchronous specialist consultation	<ul style="list-style-type: none"> • Clinician-to-clinician 	<ul style="list-style-type: none"> • Store and forward

Without a national definition and taxonomy, inconsistencies in how virtual care is delivered and recorded will persist. Consequently, IHACPA's ability to accurately classify and price virtual care services will continue to be hampered. A national definition and taxonomy of virtual care is foundational for supporting the effective implementation of ABF across the health care system. The other recommendations in this final report will not be able to be progressed without broad endorsement of a national definition and taxonomy of virtual care. However, this report recognises that the absence of a national definition does not prevent jurisdictions identifying or allocating the costs of virtual care to relevant service outputs according to local definitions of virtual care.

Potential actions:

1.1 IHACPA to adopt an interim definition of virtual care

IHACPA could work with its advisory committees and working groups to adopt an interim national definition of virtual care to be used as a basis for refining costing standards, classification systems and pricing. The ACSQHC's definition is suggested due to its already wide support amongst jurisdictions and other stakeholders and its alignment with an international standard. The interim definition can guide

³⁵ Hospital In The Home Society Australasia. (2023). *HITH Society of Australasia Position Statement: Definition of Hospital in the Home*.

IHACPA in its work to refine the national pricing model to better account for virtual care in classifications, while concurrently progressing work on the other recommendations.

1.2 IHACPA to adopt an agreed taxonomy of virtual care

Based on the initial taxonomy provided in this report (Table 7), IHACPA can collaborate with its advisory committees and working groups to further develop and finalise a taxonomy for virtual care. This taxonomy will support the definition of virtual care by offering a structured framework that enhances clarity, consistency, and usability. It will help in promoting a nationally consistent, comprehensive understanding of the virtual care landscape across Australia. The taxonomy should also have benefits beyond funding, aiding in planning and policy development.

1.3 IHACPA to propose a definition and taxonomy of virtual care for national adoption

It is recommended for IHACPA to liaise with national data stakeholders, including the AIHW's Strategic Committee for National Health Information (SCNHI) and the National Health Data and Information Standards Committee (NHDISC) to develop a proposal for a definition of virtual care for national adoption. The consultation undertaken as part of this project, as well as with IHACPA's advisory committees and working groups, can be documented as support for the proposed definition. The taxonomy developed would also form part of the proposal, supporting the national definition of virtual care by providing a clear and systematic framework for understanding and contextualising virtual care.

Recommendation 2: Improve the visibility of virtual care in national data collections.

Rationale:

- Current national data collection on modalities of delivering hospital care remotely is largely related to non-admitted care, leaving a potentially significant gap in understanding where and how virtual services are delivered across other care settings. However, even within non-admitted care, certain aspects of virtual care, such as RPM, are not captured in national collections, and this may have flow on effects for pricing.
- Addressing the gap in data collection on virtual care is key to fully understanding the utilisation and resource impacts of virtual care and for monitoring safety and quality.
- There is a need, particularly within jurisdictions, to understand who is receiving virtual care and where this care is being provided. This allows assessment of the costs of providing this care and to ensure jurisdictional funding mechanisms are in place to appropriately reimburse providers and maintain accurate patient costing systems. Jurisdictions emphasised that, where possible, national data should be a by-product of routine operational information processes.
- Some jurisdictions are already routinely collecting data on aspects of virtual care activity provided to admitted and non-admitted patients, but the scope and extent of these data collections vary considerably. There is broad support for consistent data collection on virtual care covering admitted, non-admitted and emergency care hospital services and for this to capture all virtual care modalities.
- Jurisdictions with plans to establish data capture on virtual care in the future underlined the burden and complexities in integrating required data elements into existing information systems. The benefit of collecting additional virtual care data elements would need to be made apparent to jurisdictions. There is broad support for a long-term development pathway for building national data capacity.
- The NSW Health Virtual Care Data Framework (see box below) highlights the importance of a phased and structured approach in establishing virtual care data collection across various patient care settings. Initial efforts focus on capturing virtual care through specific flags in admitted and ED data, recognising the need for detailed future data on the nature, quantity, and provider types to better understand utilisation, costs, and value of virtual care.

Potential actions:

2.1 Identify gaps in representation of virtual care in current national data collections and prioritise the necessary changes to address these gaps

IHACPA could collaborate with its advisory committees and working groups to identify both the gaps and the rationale and/or benefits in the representation of virtual care in national data collections and identify priorities for changes, pending jurisdictional capacity and system capabilities.

2.2 Work towards filling the gaps in virtual care representation in the IHACPA DRS

As with the EVC DRS, IHACPA could establish a DRS for the collection of new data elements or to test the inclusion of additional elements into existing DRSs (e.g. as in the NSW Health case study below, a flag to indicate components of admitted care provided virtually, or a service contact mode for RPM in outpatient settings). This would provide data for classification refinement and allow testing of the data collections and/or data elements to prepare proposals for submission as national standards (see next action).

2.3 Progressively work towards filling the gaps in virtual care representation in broader national data collections

IHACPA could progressively develop and submit proposals for refinements to national data collection to NHDISC for the improved capture of virtual care, guided by consultation with jurisdictions. It is important to acknowledge and recognise that the effort to fill the gaps in virtual care representation in broader national data collections will require strong commitment and cooperation from all jurisdictions. In a few instances this would entail entire data collections (e.g. virtual ED) where supported by jurisdictions, but in other instances it may be new data elements or refinements to existing data elements within existing national data set specifications, including NMDSs and NBEDSs. The work on the proposals would be a by-product of work that IHACPA undertakes on its own DRSs to progressively make virtual care more visible in national data collections.

NSW Health Virtual Care Data Framework

The purpose of the NSW Health Virtual Care Data Framework will be to identify the overall arrangements to support the NSW Virtual Care Strategy. A phased approach to establishing a wholistic virtual care dataset is planned across admitted, ED and non-admitted patient care. The initial phase will focus on the introduction of a 'virtual care flag' to be captured via the admitted and ED clinical coding processes.

The admitted patient care flag will indicate if an episode of care was provided either solely through virtual care or that a hybrid approach was used. The ED flag will be limited to instances where a patient who has physically presented to an ED receives virtual care. The existing data collection already allows for the recording of ED services provided to patients who do not physically attend the ED.

The initial changes to the non-admitted data collection will include the implementation of a service contact mode for RPM and associated reporting rules, given individual virtual care service events are already recorded where there is an interaction between a client and a clinician.

It is recognised that in the longer term, there is a requirement for additional information about the nature and quantity of virtual care provided, and the provider types involved to support a better understanding of utilisation, costs and value of virtual care. Capacity to achieve this will be progressively developed through subsequent phases.

Recommendation 3: Improve national consistency in the identification and allocation of virtual care costs for ABF.

Rationale:

- There is a lack of national consistency in how virtual care costs are identified, allocated, and reported across jurisdictions. This inconsistency arises from data availability, inconsistent practices and potentially a lack of clear guidance specifically for costing virtual care.
- An area of inconsistency is where the costs for treating a patient are incurred by a different entity than the one in which the patient is located.
- There is increasing adoption of 'hub and spoke' models in public hospital virtual care, where costs are incurred for both the service providing the virtual care and the service where the patient is receiving the care. There are also models in which a third-party is contracted to provide services to patients in public hospitals.
- The ABF costing and pricing processes primarily operate on the principle of 'costs following the patient'. This means that costs incurred by public hospitals in providing virtual care or services purchased from third-party providers need to be accurately identified and allocated to the relevant patient service outputs.
- The Australian Hospital Patient Costing Standards (AHPCS), which underpin the NHCDC, are designed to provide direction for hospital patient costing and facilitate the capture the costs of services provided to patients at one facility by clinicians at another facility or by a third-party provider. However, jurisdictions are not consistently incorporating the costs of these external service provisions against the patients receiving them. The AHPCS are regularly reviewed in consultation with jurisdictions and are intended to be comprehensive enough for jurisdictions to accurately allocate costs to hospital activity to reflect resource utilisation in a consistent manner, including for the delivery of virtual care.
- Some jurisdictions have implemented local arrangements to ensure that both provider and recipient organisations are funded for their contribution to a patient service. For example, Queensland Health's approach eliminates the need for Hospital and Health Services (HHS) to cross-charge for services provided by one facility and received by patients of another facility, while still ensuring that each facility is compensated for their contribution to a virtual care service (see box below). While this approach might be considered nationally, it would require significant modifications to activity data collections, including enhanced capabilities to accurately link patient data across hospitals and settings.
- However, amongst the jurisdictions, the total cost of the service provision is not always reflected against the patient encounter. This inconsistency can lead to costs not being allocated to the relevant patient care activity when reporting costs to IHACPA through the NHCDC, and thus have an impact on pricing.
- Jurisdictions emphasised the need to balance accuracy in patient cost allocation with materiality of the costs. In some cases, the external costs of providing virtual care are only a small fraction of the total patient care costs and may not warrant the effort required for identification and allocation.
- To ensure fair and accurate pricing, and consequently funding of individual hospital services, it is critical to improve national consistency in the identification and allocation of virtual care costs, where they are material. Successful transition to ABF or developing pricing models that accurately reflect cost relativities is undermined by inconsistencies in reporting.

Queensland's ABF localisations and 2023–24 incentives for virtual care

Queensland Health's ABF model provides localisations and a time limited incentive (for 2023–24) for a range of telehealth/virtual care enabled clinical services, supporting services and HHS to provide care closer to where patients live. **These localisations aim to recognise the resource use at both the provider and recipient end** via the allocation of Queensland Weighted Activity Units (QWAU) to either the provider or recipient end or both.

There are three localisations and two incentives:

1. The purchasing localisation for **non-admitted patient telehealth service** events provides:
 - Provider-end telehealth service events funded by Tier 2 clinical specialty QWAU price weight excl. Pharmaceutical Benefits Scheme (PBS) associated with the Tier 2 Clinic.³⁶
 - Recipient-end telehealth service events funded by Tier 2 Clinical specialty QWAU price weight+ PBS associated with the Tier 2 clinic.
2. The purchasing localisation for virtual care provides:
 - **eConsult events and ED presentation telehealth consultations:**
 - Provider-end: Differential QWAU adjustment based on provider type (Medical officer/Other Health Professional).
 - **TeleHandover consultations:**
 - Provider and recipient end: Differential QWAU adjustment based on provider type (Medical officer/Other Health Professional).
3. The purchasing localisation for **admitted patient telehealth** events provides:
 - Provider end: Differential QWAU adjustment for each admitted patient telehealth event* based on provider type.
4. A time limited (2023–24) **virtual care incentive** provides:
 - In scope outpatient service events (telephone and telehealth), TeleHandover, ED presentation telehealth consultations, and eConsult events.
 - HHS baselines of Virtual Care activity as a percentage of total in-scope service events to be achieved to be eligible for a payment under this incentive.
 - On achievement of the baseline, the HHS may receive a non-recurrent flat rate incentive per additional virtual care service event.
5. A time limited (2023–24) **remote tele-chemotherapy incentive:**
 - Non-recurrent funding to support the implementation of a Queensland Remote Chemotherapy Supervision guidelines.
 - Non-recurrent flat rate incentive for each in-scope consultation.

Potential actions:

3.1 Identify barriers for jurisdictions in identifying and allocating virtual care costs for ABF

IHACPA could work with jurisdictions to more fully understand the barriers to identifying and allocating costs of virtual care to service outputs, with a view to creating resources for jurisdictions to support greater national consistency (see next action). Some of the barriers may relate to availability of data or accurate reporting of data, and these are addressed at recommendation 2. In addition, limited costing

³⁶ Note that this refers to the local version of the Tier 2 classification, which is subsequently mapped to IHACPA's Tier 2 classification.

capacity and perceived immateriality relative to the potential benefits of accurate costing are perceived barriers. IHACPA has on its workplan for 2024–25 to develop a data quality framework to support NHDC submissions.³⁷ This action could be integrated into this initiative.

3.2 Provide practical support to jurisdictions to promote national consistency and best practices in patient costing

Once barriers are identified, resolutions could be prioritised and included as part of the data quality framework to support NHDC submissions mentioned above. As part of these resolutions, practical support for jurisdictions could be provided to promote national consistency and best practices in patient costing. Jurisdictions are interested in sharing and learning from each other about approaches to identifying and allocating costs for virtual care to service outputs and reimbursing providers. IHACPA could facilitate this by organising forums for jurisdictions to exchange information on costing practices and publish practical guidelines informed by these exchanges to improve the quality of virtual care costing. This could occur through the existing NHDC Advisory Committee or separate forums.

Jurisdictions would be responsible for implementing necessary improvements in their costing processes and reporting on their progress. To facilitate this, a self-assessment tool could be developed as part of the data quality framework, allowing jurisdictions to evaluate their progress and identify areas needing further attention. This tool would also enable comparison across jurisdictions to assess progress towards national consistency.

3.3 Review the AHPCS and explore their development to improve cost allocation and reporting associated with virtual care

IHACPA could review the AHPCS to ensure they guide consistent and accurate costing of virtual care. This action would also involve exploring the development of the AHPCS tailored to virtual care.

Recommendation 4: Consider supplementary collections to the NHDC to cost service innovations, including virtual care.

Rationale:

- Due to the complexity and time requirements of the processes involved in costing, cost data preparation and submission, and subsequent pricing development, there is a three-year time lag between the end of the financial year for which cost data is being collected and the end of the financial year for the NEP determination using that year of cost data. While jurisdictions have expressed interest in reducing this timeframe, current capabilities and capacities for reporting comprehensive cost data do not allow for a shorter reporting period. Under the current IHACPA TYDP, jurisdictions are requested to submit the NHDC by the end of the February following the end of a financial year.
- The delay between the financial year in from which cost data is available and the NEP determination means that changes in costs and cost relativities arising from new service models are not reflected in national pricing processes any sooner than three years. Additionally, there is only limited capacity to explore the impact of these new models, until activity specifications have been incorporated into the NHDC. This timeframe does not align with the anticipated rapid changes in the availability and uptake of virtual care models in Australia.
- While the NHDC will remain as the source of data on costs for pricing, there may be a need for supplemental costing studies to obtain costing results more rapidly, for example to work out how the

³⁷ Independent Health and Aged Care Pricing Authority. (2024). *IHACPA Work Program and Corporate Plan 2024–25*. https://www.ihacpa.gov.au/sites/default/files/2024-06/ihacpa_work_program_and_corporate_plan_2024-25_.pdf

costing of the new service could be embedded into the NHDC or to inform the development of new activity or cost data specifications. Supplementary collections aligned with the NHDC that prioritise costing of specific service innovations could be considered as a way of addressing this need. The aim would be to cost service innovations that are not identifiable or well differentiated within activity data and potentially not costed at a patient level. The supplementary collections would be intended to provide a targeted approach for capturing the unique resource utilisation of service innovations rather than be used as a way of improving costing of services that are already costed at a patient level within the NHDC. The proposition is that for each round of the NHDC, a decision could be made on whether to undertake a supplementary cost data collection focussed on a priority area. The supplementary collection would be undertaken by jurisdictions and services that have or could obtain the necessary underlying data for costing at a patient level and have sufficient capacity and willingness to participate.

- The data submitted for the supplementary collection would be reconciled with the final NHDC data submissions. The AHPCS would provide the framework within which the supplementary study is conducted. However, the supplementary collection could incorporate additional or alternative information, for example, using new activity data and/or alternative relative value units. The new activity data may come from a separate DRS than those used routinely for costing. The EVC DRS is an example of a separate data source that could be used for costing emergency virtual care.
- The ultimate goal of undertaking a supplementary collection is to embed the costing of service innovations into the NHDC cycle.

Potential actions:

4.1 Identify and assess the feasibility of supplementary collections to the NHDC to cost service innovations, including virtual care

For each service innovation, assess whether it is appropriate for supplementary costing. Criteria might include that existing relative value units and/or overhead cost allocations used in the NHDC may not apply or be suitable due to the different nature of the activity. As an example, emergency virtual care might be a candidate for supplementary costing. Although similar data is currently collected for virtual emergency care (voluntarily by some services) compared to that collected for conventional emergency department care, existing costing methods may not fully capture the unique resource utilisation of patients receiving virtual care. Differences between patients in virtual emergency care compared to those in conventional emergency departments could impact the allocation of direct costs. The allocation of overheads may also differ due to the different physical infrastructure between virtual and conventional ED care, such as space and equipment. Additionally, some activity-related information, such as episode end status, may not reflect the cost drivers for patients receiving virtual emergency care. As a result, the costing methods for virtual emergency care might need to differ from those used for patients treated in conventional emergency departments.

This approach contrasts with the costing of Telestroke services used by patients in conventional EDs, which would not require a supplementary cost collection. In this case, it would be seen as an enhancement to the current costing practices. The rationale is that aside from incorporating the costs of the Telestroke service for each patient who used it, no other adjustments to the costing methods would be necessary to incorporate the additional cost of this virtually-provided service.

Finally, as part of this action, a systematic process for identifying and prioritising future service innovations for costing should be established, based on criteria such as alignment with stakeholder priorities for pricing, potential impact, resource requirements and capacity for a sufficient number of health services to participate.

4.2 Design the supplementary data collections

Where it has been decided that supplementary costing should be undertaken, design the supplementary costing process, ensuring it meets key requirements such as that all relevant costs are included and overhead costs are fully and appropriately absorbed. The supplementary costing process is likely to be documented in a guideline that participating services can use to undertake costing of the selected service innovations.

4.3 Incorporate costing of service innovations into the NHCDC

After collecting supplementary cost data for a specific service innovation, evaluate and validate the new cost models to ensure their accuracy and relevance. Integrate these into the NHCDC standards and methodologies, working towards routine costing of the service innovation into the future. Collaborate with stakeholders to refine costing guidelines, and if required, update AHPCS, ensuring the new service innovations are accurately represented in national cost data.

Recommendation 5: Develop a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.

Rationale:

- IHACPA maintains a General List of In-Scope Public Hospital Services (for Commonwealth funding contribution) as part of the NEP determination. There are provisions for jurisdictions to apply to have services included on the General List.
- Under the NHRA Addendum 2020–25, exploration and trial of innovative care models to improve efficiency and health outcomes is encouraged.
- One of the guiding principles of IHACPA's Pricing Framework is that ABF should be used for funding public hospital services whenever practicable and appropriate. ABF enhances funding transparency, links payments to service delivery, improves efficiency, and supports scaling local models to the national level.
- While some services added to the General List or funded under the NHRA Addendum 2020–25 can be immediately funded using ABF, other services may require a transition period due to availability of patient level activity and cost data reporting, and adequate capture within existing classifications. The transition may include partially or completely block funding the service under the NEC determination, with the intention of transitioning it to ABF when the required activity and costs and/or classification become available.
- The transition from block funding to ABF for service innovations can be slow. There is broad support for the jurisdictions and IHACPA to work together to identify feasible ways to improve the agility of the pricing system by enabling new and innovative models of care, including those involving virtual care modalities, to transition to ABF. This requires collection of necessary data and costing information.
- In some instances, alternatives to existing ABF models may better support service innovation, efficiency, and improved patient outcomes. While the current ABF models foster transparency and efficiency in funding, some services and patient groups might achieve greater value from alternative models, such as bundled payments (e.g., defined care pathways for interventions like stroke or hip/knee replacements) and capitation models (e.g., chronic condition management over extended periods). However, these alternative models also require data collection and costing to determine the most effective approach and appropriate pricing.

Potential actions:

5.1 Develop a pathway to transition new and innovative virtual care services from block funding to ABF or alternative funding models that improve value

For new and innovative services, IHACPA could work with jurisdictions to develop a comprehensive pathway designed to facilitate the transition from block funding to ABF or other suitable funding models that promote service innovation and improve value. This pathway would serve as a framework for jurisdictions, outlining key considerations, such as the following:

- **Block funding terms and funding mechanisms for the block funding period:** The pathway would define the approach for establishing the terms and conditions of the block funding period, including its duration and scope. It would also describe the funding mechanisms required to support services during this period, ensuring alignment with the overall goals of service innovation and value improvement.
- **Transition to ABF or an alternative model:** The pathway would outline the steps to evaluate and determine the most appropriate funding models, whether existing ABF models or alternative approaches, that best support the objectives of service innovation, efficiency, and enhanced patient outcomes.
- **Data reporting requirements:** The pathway would specify the data that jurisdictions need to report during the block funding period to support a smooth transition to ABF or other funding models. A principle that would be applied in the pathway is that existing national data collection specifications would be used as the basis for reporting requirements, supplemented by additional data as needed. Data reporting could be presented as a phased approach, for example:
 - **Initial data collection:** The pathway might recommend starting with basic data collection to capture essential details about the service and resource use. This could involve reporting on key patient characteristics, such as age and gender of patients, along with minimal service details. Depending on the service, this might include simple volume counts or more specific information about the nature of the services provided. For example, in a virtual HITH setting, the nature of the services could encompass broad categories such as chronic condition monitoring, post-surgical follow-up, or medication management.
 - **Enhanced data collection:** The pathway would detail how to expand data collection over time to include more comprehensive information on patient factors influencing service/resource use and the service delivery processes. For instance, enhanced data could include more detailed patient information such as the presenting problem/diagnosis, co-morbidities, interventions, time required for care delivery, and patient disposition following the service (e.g., referral to a GP, hospitalisation).
- **Costing:** The pathway would outline how costing should progress to ensure robust data for pricing and classification development, starting from preliminary costing and advancing to more refined costing models:
 - **Preliminary costing:** Initially, the focus would be on understanding the unit costs of the service, which could begin with basic data such as total operating costs, definition of appropriate interim products, and overall service volumes to determine per unit costs. If available, additional data such as relative value units (RVUs) for managing patients with different characteristics (e.g. age groups) or service types could be incorporated to enhance costing accuracy.
 - **Refined costing models:** The pathway would recommend further refinement of costing by incorporating more granular data and improving cost allocation practices to enhance accuracy.

- **Classification:** The pathway would provide guidance on the information required, criteria and time frames to refine relevant classifications to integrate the new service into ABF or an alternative model.
- **Pricing:** The pathway would detail the process for developing and refining pricing, including:
 - **Shadow pricing:** The pathway would suggest the development of initial or "shadow" prices. The process would include monitoring the impact of these prices on the services and identifying necessary improvements in activity and costing data.
 - **Final pricing recommendations:** Based on the experience with shadow pricing and incorporating additional data and insights, the pathway would guide the refinement of final pricing recommendations to ensure fair and effective valuation of services.
- **Evaluation criteria:** The pathway would establish criteria for assessing the success and sustainability of services, focusing on patient outcomes, service efficiency, and innovation. These criteria would also support continuous improvement and allow for the adaptation of services and funding models over time, ensuring they remain effective and responsive to evolving needs.

This framework would serve as a foundation, designed to be built upon and refined as jurisdictions and IHACPA gain a deeper understanding of the process.

5.2 Facilitate the transition of new and innovative virtual care services from block funding to ABF or alternative funding models

Once the pathway is established, IHACPA would work with jurisdictions to transition services from block funding to ABF or other suitable funding models. This process would involve:

- **Monitoring and support:** IHACPA and jurisdictions would use the criteria set out in the pathway to monitor the progress of the transition of services from block funding to ABF or other suitable funding models. This would involve providing ongoing support to services and making real-time adjustments as necessary to ensure the successful implementation of the pathway, addressing any challenges that arise during the transition.
- **Data integration and reporting:** Jurisdictions would collaborate with service providers to implement processes that meet the data reporting requirements outlined in the pathway. This ensures that the data collected is robust enough for monitoring activity, accurately costing services, and supporting the transition from block funding to ABF or other funding models.
- **Costing:** Jurisdictions would support service providers in accurately costing their activities according to the stepped approach detailed in the pathway. This would involve guiding services through the process of moving from preliminary to refined costing models, ensuring that all relevant costs are captured and integrated.
- **Classification:** If required, IHACPA would refine and adapt existing classification systems to reflect the new services for ABF or alternative funding.
- **Pricing:** IHACPA would undertake the necessary adjustments to pricing based on the steps in the pathway. This would involve implementing shadow pricing initially, followed by refining and finalising prices as more data becomes available.
- **Evaluation and continuous improvement:** Using the evaluation criteria developed in the pathway, IHACPA and jurisdictions would continuously evaluate the impact of the transition on service delivery, patient outcomes, and financial sustainability.

6 Implementation approach

This section details a proposed roadmap for implementing the recommendations and actions detailed in Section 5.

6.1 Implementation roadmap

The implementation roadmap, outlined in Table 8 consists of each recommendation and suggested actions, an assigned timeframe, roles and responsibilities and dependencies for consideration. Each recommendation falls into one of the three time period options:

- Short term: 1–2 years
- Medium term: 3–5 years
- Long term: 6–10 years

Table 8 | Recommendations and indicative roadmap

Recommendation	Potential Action	Timeframe	Roles and responsibilities	Dependencies
1. Develop a national definition and taxonomy of virtual care.	Action 1.1: IHACPA to adopt an interim definition of virtual care.	Short term	IHACPA to lead discussions with its advisory and working groups.	Agreement by IHACPA advisory committees and working groups
	Action 1.2: IHACPA to adopt an agreed taxonomy of virtual care.	Short term	IHACPA to lead discussions with its advisory and working groups.	Agreement by IHACPA advisory committees and working groups. May also be informed by findings from Action 2.1
	Action 1.3: IHACPA to propose a definition of virtual care for national adoption.	Short term	IHACPA to develop proposal. NHDISC members, in collaboration with SCNHI, to work on adoption of national definition.	Actions 1.1 and 1.2

Recommendation	Potential Action	Timeframe	Roles and responsibilities	Dependencies
2. Improve the visibility of virtual care in national data collections.	Action 2.1: Identify gaps in representation of virtual care in current national data collections and prioritise the necessary changes to address these gaps.	Short to medium term	IHACPA to undertake assessment of current national data collections. IHACPA and jurisdictions to prioritise key changes to address gaps.	Action 1.3
	Action 2.2: Work towards filling the gaps in virtual care representation in the IHACPA DRS.	Medium term	IHACPA to propose changes and work with its advisory and working groups to implement.	Action 1.3 and 2.1
	Action 2.3: Progressively work towards filling the gaps in virtual care representation in broader national data collections.	Medium to long term	IHACPA to develop proposals for changes to national data collections. NHDISC members, in collaboration with SCNHI, to work on adoption of proposals for changes to national data collections.	Action 1.3 and 2.1
3. Improve national consistency in the identification and allocation of virtual care costs.	Action 3.1: Identify barriers for jurisdictions in identifying and allocating virtual care costs for ABF.	Short to medium term	IHACPA to consult with jurisdictions to identify barriers.	Action 1.1, 2.1 and 2.2
	Action 3.2: Provide practical support to jurisdictions to promote best practices in patient costing.	Short to medium term	IHACPA to consult with jurisdictions to identify practical support strategies. IHACPA to provide practical support to jurisdictions.	Action 3.1
	Action 3.3: Review AHPCS business rules and explore the development of costing guidelines for virtual care.	Short term	IHACPA to lead with input from its advisory and working groups.	N/A
4. Consider supplementary collections to the NHCDC to cost service innovations, including virtual care.	Action 4.1: Identify and assess the feasibility of implementing supplementary collections to the NHCDC to cost service innovations, including virtual care.	Short term	IHACPA to lead with input from its advisory and working groups.	Action 1.1

Recommendation	Potential Action	Timeframe	Roles and responsibilities	Dependencies
	Action 4.2: Design the supplementary data collections.	Medium term	IHACPA to lead with input from its advisory and working groups.	Action 4.1
	Action 4.3: Incorporate the costing of service innovations into the NHCDC.	Medium to long term	IHACPA to lead with input from its advisory and working groups.	Action 4.2
5. Develop a pathway to facilitate the transition of service innovations to ABF or alternative funding models that improve value.	Action 5.1: Develop a pathway to transition new and innovative virtual care services from block funding to ABF or alternative funding models that improve value.	Short term ³⁸	IHACPA to lead with input from its advisory and working groups.	N/A
	5.2 Facilitate the transition of new and innovative virtual care services from block funding to ABF or alternative funding models.	Medium to long term	IHACPA to lead with input from its advisory and working groups.	Action 5.1

³⁸ The specified timeframe relates only to developing a pathway, as transitioning service innovations to ABF is an extended process achievable only in the medium to long term.

Figure 7 | Action timeline chart

ACTIONS	YEARS									
	1	2	3	4	5	6	7	8	9	10
1.1 IHACPA to adopt an interim definition of virtual care.	█									
1.2 IHACPA to adopt an agreed taxonomy of virtual care.	█									
1.3 IHACPA to propose a national definition and taxonomy of virtual care for national adoption.		█								
2.1 Identify gaps in representation of virtual care in current national data collections and prioritise the necessary changes to address these gaps.		█	█							
2.2 Work towards filling the gaps in virtual care representation in the IHACPA DRS.			█	█	█					
2.3 Progressively work towards filling the gaps in virtual care representation in national data collections.			█	█	█	█	█	█	█	█
3.1 Identify barriers for jurisdictions in identifying and allocating virtual care costs for ABF.	█	█	█							
3.2 Provide practical support to jurisdictions to promote best practices in patient costing.	█	█	█	█	█					
3.3: Review AHPCS business rules and explore the development of costing guidelines for virtual care.	█									
4.1 Assess the feasibility of implementing supplementary collections to the NHCDC to cost service innovations, including virtual care.	█	█								
4.2 If feasible and valuable, proceed to design the supplementary data collections.			█	█	█					
4.3 Progressively incorporate the costs of service innovations into the NHCDC.				█	█	█	█	█	█	█

5.1 Develop a pathway to transition new and innovative virtual care services from block funding to ABF or alternative funding models that improve value.										
5.2 Facilitate the transition of new and innovative virtual care services from block funding to ABF or alternative funding models.										

6.2 Other issues for consideration

Jurisdictions identified other issues relating to the funding for virtual care that are either not within IHACPA’s remit or are more general issues that are not exclusive to virtual care. IHACPA may share these findings with relevant departments to help inform policy decisions and inform broader strategic health issues. In addition, the current NHRA Addendum (2020–25) allows jurisdictions to trial innovative models that integrate multiple sectors and funding approaches and seek funding under the Addendum. There are also opportunities to raise these issues during the development of the next NHRA.

Issue 1 – Primary Care and MBS funding

Medicare benefits are generally not payable for professional services where other government funding is already provided for that service. Jurisdictions are concerned this issue limits the ability of public hospitals to involve GPs and other specialist clinicians in private practice to participate with colleagues working in public hospitals in virtual care activities. While it is appreciated this is an enduring funding issue that equally applies to in-person care, the issue appears amplified in the virtual care setting, which facilitates clinicians from a variety of settings to more readily work collaboratively.

This issue would be a relevant discussion during ongoing negotiations between the Commonwealth and jurisdictions under the NHRA Addendum.

Issue 2 – Aged care and disability

Public hospital avoidance strategies often involve interventions in the community, with individuals living in residential aged care facilities, supported accommodation and/or receiving community support and care. Presently, funding arrangements for aged care and disability care do not appear to act as a direct barrier for public hospitals to deliver virtual care to consumers receiving aged care or NDIS funding support. However, jurisdictions reported that hospital virtual care with outreach to aged care and/or NDIS providers and recipients can face funding complexity, particularly in relation to the provision of nursing and allied health care. For example, jurisdictions identified specific funding barriers relating to the provision of virtual medication reviews in multi-purpose services (MPSs) by hospital pharmacists.

Issue 3 – Multidisciplinary care

Multidisciplinary team care involves multiple health professionals from different disciplines coming together to collaborate and communicate as a team with a patient to address multiple aspects of the care of a non-admitted patient. While multidisciplinary care can be in-person or virtual, the virtual modality can facilitate this care by enabling the members of the clinical team to come together from different locations without having to be physically present with the patient.

Tier 2 includes a "multidisciplinary clinic adjustment" for outpatient clinics involving multiple clinicians, which results in an 'uplift' on the usual service payment levels. Jurisdictions are concerned the current classification does not enable the related service activities to be adequately reported or the pricing to

reflect the variation in costs of the different types and numbers of clinicians that can be involved in this care.

IHACPA is currently exploring the funding of multidisciplinary care in non-admitted settings as a broader issue beyond virtual care. Representation of multidisciplinary care is also being considered in the development of the new non-admitted patient care classification commissioned by IHACPA.

Appendix A IHACPA Pricing Guidelines

Pricing and policy decisions for public hospital services are underpinned by the Pricing Guidelines, as shown in Figure 8.

Figure 8 | IHACPA Pricing Guidelines

Overarching Guidelines that articulate the policy intent behind the introduction of funding reform for public hospital services comprising (ABF) and block funding:

- **Timely-quality care:** Funding should support timely and equitable access to high quality health services and reduce disadvantage for all Australians, especially for Aboriginal and Torres Strait Islander peoples.
- **Efficiency:** ABF should improve the value of the public investment in hospital care and ensure a sustainable and efficient network of public hospital services.
- **Fairness:** ABF payments should be fair and equitable, including being based on the same price for the same service across public, private or not-for-profit providers of public hospital services and recognise the legitimate and unavoidable costs faced by some providers of public hospital services.
- **Maintaining agreed roles and responsibilities of governments determined by the NHRA:** Funding design should recognise the complementary responsibilities of each level of government in funding health services.

Process Guidelines to guide the implementation of ABF and block funding arrangements:

- **Transparency:** All steps in the determination of ABF and block funding should be clear and transparent.
- **Administrative ease:** Funding arrangements should not unduly increase the administrative burden on hospitals and system managers.
- **Stability:** The payment relativities for ABF are consistent over time.
- **Evidence-based:** Funding should be based on the best available information, that is both nationally applicable and consistently reported.

System Design Guidelines to inform the options for design of ABF and block funding arrangements:

- **Fostering clinical innovation:** Pricing of public hospital services should respond in a timely way to the introduction of evidence-based, effective new technology and innovations in the models of care that improve patient outcomes.
- **Promoting value:** Pricing supports innovative and alternative funding solutions that deliver efficient, high quality, patient centred care.
- **Promoting harmonisation:** Pricing should facilitate best practice provision of appropriate site of care.
- **Minimising undesirable and inadvertent consequences:** Funding design should minimise susceptibility to gaming, inappropriate rewards and perverse incentives.
- **Using ABF where practicable and appropriate:** ABF should be used for funding public hospital services wherever practicable and compatible with delivering value in both outcomes and cost.
- **Single unit of measure and price equivalence:** ABF pricing should support dynamic efficiency and changes to models of care with the ready transferability of funding between different care types and service streams through a single unit of measure and relative weights.
- **Patient-based:** Adjustments to the standard price should be based on patient-related factors rather than provider-related characteristics wherever practicable.
- **Public-private neutrality:** ABF pricing should ensure that payments a LHN receives for a public patient should be equal to payments made for a LHN service for a private patient.

Appendix B Examples of models of virtual care across Australia

Table 9 includes examples of models of virtual care across each jurisdiction, identified through submissions to the *Consultation Paper on the Pricing Framework for Australian Public Hospital Services* (2023–24 and 2024–25) and stakeholder engagement as part of the project. Models that are consistent or present across all states and territories were excluded from the table below, including outpatient telehealth and HITH.

Table 9 | Examples of models of virtual care across jurisdictions

Program name	Description	Broad service category	Model of care type
New South Wales (NSW)			
Virtual Rural Generalist Service (VRGS)	VRGS doctors work virtually and in-person to provide rural generalist medical coverage for hospitals and multipurpose services, including consultations to ED patients, medical management of acute inpatients, virtual ward rounds for inpatients and clinical support for residential aged care residents in rural MPSs.	Admitted/ Emergency/ Non-admitted	Virtual inpatient care/ Virtual ED/ Virtual specialist care to other sectors
Virtual Clinical Pharmacy Service (VCPS)	Provides health facilities in Western NSW and Far West Local Health Districts (LHDs) with clinical pharmacy services including medication management where there is no onsite access.	Admitted	Virtual inpatient care
virtualKIDS Urgent Care Service	A paediatric-specific virtual service that offers video consultations to assess, treat and refer children up to 16 years old with non-life-threatening health concerns in NSW and select border areas.	Emergency Non-admitted	Virtual ED Outpatient telehealth consultation
NSW Telestroke Service	Provides rapid virtual access to specialist stroke diagnosis and treatment by connecting local emergency doctors to specialist stroke physicians via video consultation.	Emergency/ Admitted	Condition specific virtual emergency care
RPA Virtual	A virtual hospital providing patients with 24/7 hospital level support through a network of doctors, nurses, and allied health professionals.	Emergency/ Non-Admitted/ Admitted	Virtual ED/ HITH (includes RPM)/ Virtual inpatient care
vCare	Western NSW LHD clinicians providing 24/7 virtual support to patients, including care coordination, specialist or post specialist care, clinical	Non-admitted	Outpatient telehealth consultation (includes RPM)/ Care navigation

Program name	Description	Broad service category	Model of care type
	support/advice, patient transport and virtual monitoring.		
TeleECG	A telehealth service that links specialist nurses with rural hospital staff to support their patients with suspected acute coronary syndrome.	Emergency	Condition specific virtual emergency care
Police Ambulance and Clinical Early Response (PACER)	A police and mental health service response activated by police, offering on-scene assessment in the community at time of crisis, with mental health clinician as secondary response and provision of real time social and clinical information.	Emergency	Specialist emergency care
Virtual ICU	Virtual specialist consultations from the Royal Prince Alfred Hospital delivering advice and support to clinicians at the Broken Hill Intensive Care Unit.	Admitted	Synchronous clinician-to-clinician consultation
Virtual Care - Remote Patient Monitoring Program (VC-RPM)	eHealth NSW and Agency for Clinical Innovation supporting NSW LHDs and Speciality Health Networks (SHNs) by providing RPM to patients with type 2 diabetes, chronic heart failure and chronic obstructive pulmonary disease (COPD). The program includes the use of a clinician portal and a patient application to support the delivery of clinical care virtually.	Non-admitted	Chronic care management
Victoria (VIC)			
VVED	A 24/7 statewide virtual care service which connects patients to emergency clinicians to triage and treat non-life-threatening emergencies for children and adults, reducing non-emergency presentations to local EDs.	Emergency	Virtual ED
Critical Care Telehealth Scaling Project	Telehealth service connecting Mildura Base Hospital's Intensive Care Unit with 24/7 support from adult intensivists at the Alfred Hospital, nephrologists at Melbourne Health, and paediatric intensivists through the Paediatric Infant Perinatal Emergency Retrieval (PIPER) system. Supporting complex patients in the rural and regional setting to reduce avoidable patient transfers.	Emergency	Condition specific virtual emergency care
Victorian Stroke Telemedicine	Provides 24/7 support connecting hospitals across Victoria and Tasmania, to stroke consultants facilitating real-time consultations between clinicians, patients, and specialists. VST uses audio-visual communication between stroke	Admitted/ Emergency	Condition specific virtual emergency care (includes clinician-to-clinician, clinician and patient and store and forward)

Program name	Description	Broad service category	Model of care type
	consultants, patients and local clinicians and has real-time access to brain imaging to facilitate the remote consultations.		
Victorian Respiratory Support Service (VRSS)	Remotely treat people with chronic respiratory failure and who require long-term ventilation support in hospital and at home.	Non-admitted	Chronic care management
Better at Home	A home-based and virtual service supporting the delivery of acute, rehabilitation, geriatric evaluation and management, health independence program and specialist services in the home.	Admitted/ Non-admitted	HITH/ Outpatient telehealth consultation
Queensland (QLD)			
Virtual diabetes clinics	Virtual diabetes clinics provide specialist outpatient diabetes care through both nurse and medical-led models and may be supported by remote patient monitoring technologies.	Non-admitted	Outpatient telehealth consultation (may be supported by RPM)
Virtual Outpatient Integration for Chronic Disease (VOICeD)	Specialist multidisciplinary clinic services provided via telehealth, that enables a person with chronic disease to see their healthcare team in one appointment.	Non-admitted	Chronic care management
Queensland Virtual Hospital – Virtual Emergency Care Service (VECS)	Specialist service which supports patients, GPs and Queensland Ambulance Service (QAS) to access urgent emergency care by telephone or video conference.	Emergency	Specialist emergency care
Virtual Admission	Virtual admission of patients, where the provision of clinical consultation, support and monitoring is completed remotely by a clinical team/s for the duration of their admitted episode of care.	Admitted	Virtual inpatient care
Specialist Palliative Care Rural Telehealth (SPaRTa)	Statewide service that provides comprehensive multidisciplinary clinical advice and support to clinicians in rural and remote Queensland managing palliative patients utilising virtual care modalities.	Non-admitted	Outpatient telehealth consultation
Burns eConsult model	Allows healthcare providers to request clinical advice of a specialist clinician, supporting them to manage their patient.	Non-admitted/ Admitted/ Emergency	Asynchronous specialist consultation
Tele-pharmacy admitted patient ward rounds	A virtual pharmacy consultation service, for admitted patients with complex and extensive medication regimes which can	Admitted	Virtual inpatient care

Program name	Description	Broad service category	Model of care type
	be remotely managed via videoconference ward round.		
Emergency Retrieval Services Queensland (RSQ) telehealth support	Specialist retrieval services emergency consultation and advice provided via video conferencing to support clinicians with the management of critically ill in rural and remote locations.	Emergency	Specialist emergency care
South Australia (SA)			
South Australia Virtual Emergency Service (SAVES)	Connects doctors with patients and their local nurses in country EDs via the existing telehealth network.	Emergency	Virtual ED
Child and Adolescent Virtual Urgent Care Service (CAVUCS)	Connects parents with a virtual team of emergency doctors and nurses who can assess and provide medical advice for children, aged between 6 months and up to 18 years.	Emergency	Virtual ED
SA Virtual Care Service (SAVCS)	Provides virtual emergency care using an individualised assessment service for patients on-scene with ambulance, regional clinicians or aged care workers.	Emergency	Virtual ED
My Home Hospital (MyHH) service	SA Health HITH service delivered by Calvary-Amplar Health Joint Venture.	Admitted	Hospital in the home
Western Australia (WA)			
WA Emergency Telehealth Service (ETS)	Supports WA country doctors and nurses by providing 24/7 access to specialist clinicians to smaller hospitals and nursing posts.	Emergency	Synchronous clinician-to-clinician consultation
WA Virtual Emergency Department (WAVED)	Offers virtual urgent medical consultations to reduce ED visits and aims to alleviate hospital pressures. Specialist ED physicians can either provide telehealth assessment, clinical advice directly to consumers or to paramedics on scene. In addition, where required, electronic prescriptions and referral to appropriate healthcare services is provided too	Emergency	Virtual ED
WA Telestroke Service	A 24/7 service that connects clinicians with metropolitan stroke specialists to assist emergency clinicians in diagnosis, assessment, treatment (guidance on the use of intravenous clot-busting agents), and disposition of acute stroke and Transient Ischaemic Attack (TIA) patients.	Emergency	Condition specific virtual emergency care
TeleChemotherapy	Enables regional medical oncology and haematology patients to receive low risk	Non-admitted	Outpatient telehealth consultation

Program name	Description	Broad service category	Model of care type
	cancer treatments at a local site with the support of specialist clinicians based at a metropolitan cancer centre via video supervision.		
Health in a Virtual Environment (HIVE)	An admitted patient remote monitoring service that uses an Integrated Care Management System enabled by AI and RPM technology to track patients' vital signs and notify clinicians when signs of clinical deterioration are detected.	Admitted	Virtual inpatient care
Aged Care Co-HIVE	A geriatrician-led virtual service that enables patients to receive care in residential aged care facilities from a specialised team of clinicians. Future wearable technology will allow these patients to be monitored via HIVE.	Non-admitted	Virtual specialist care to other sectors
WA Country Command Centre	WA Country Health Service (WACHS) Command Centre service supports WA patients and clinicians, in health care facilities by providing access to: <ul style="list-style-type: none"> • emergency telehealth • inpatient telehealth • mental health emergency telehealth • midwifery and obstetrics emergency telehealth • advance patient monitoring systems • acute patient transfer coordination service. • Palliative care telehealth 	Admitted, Non-admitted, Emergency	Condition specific virtual emergency care
Diabetes RPM	Child and Adolescent Health Service (CAHS) assists patients to manage diabetes at home via remote monitoring from a specialised nurse.	Non-admitted	Chronic care management
Child and Adolescent Mental Health Service (CAMHS) Crisis Connect	Telehealth service providing support for children and young people suffering from a mental health crisis.	Non-admitted	Outpatient telehealth consultation
Virtual Immunology Clinic for General Practice (VIC-GP)	VIC-GP uses novel workflows and currently available Microsoft automation to provide primary care providers with synchronous access to online specialist consultant expertise, enhancing their patients' care by providing: <ul style="list-style-type: none"> • Timely and equitable access to specialist advice (especially patients in rural and remote settings), with 	Non-admitted	Virtual specialist care to other sectors

Program name	Description	Broad service category	Model of care type
	<p>the patient either at their primary care provider's office or at home.</p> <ul style="list-style-type: none"> In context education and upskilling of the primary care provider, reducing the need for referral of subsequent patients with similar problems. Care that is shared and coordinated between the primary care provider and the specialist. Facilitated access to in person procedures and treatments at the tertiary hospital (when required) 		
Remote Cochlear Care	Remote care solutions through the use of Remote Check, a virtual assessment tool, to provide care and monitor patient's progress.	Non-admitted	Chronic care management
Newborn Emergency Transport Service (NETS)	A mobile intensive care unit for newborns who require expert neonatal advice during transport to hospital.	Emergency	Specialist emergency care
Tasmania (TAS)			
Care@home	Remote healthcare in the home for vulnerable patients with COVID-19, other respiratory illnesses such as influenza (flu) or flu-like illness, who meet other specific referral criteria.	Non-admitted	Outpatient telehealth consultation
Telehealth Tasmania	Provides patients with an easy way to access video appointments in the Tasmanian Health Service without having to travel to the hospital. Appointments can be taken from the home, local health centre, or GP surgery.	Non-admitted	Outpatient telehealth consultation
Cardihab app	A partnership with Cardihab, Tasmanian Health Department and the Royal Flying Doctor Service to enable patients with heart disease to undergo rehabilitation programmes and receive medical advice at home through weekly telephone calls and video consultations.	Non-admitted	Outpatient telehealth consultation
Victorian Stroke Telemedicine (as above)	Provides 24/7 support connecting hospitals across Victoria and Tasmania to stroke consultants, facilitating real-time consultations between clinicians, patients, and specialists and providing access to brain imaging for remote assessments.	Admitted/ Emergency	Condition specific virtual emergency care (includes clinician-to-clinician, clinician and patient and store and forward)
Northern Territory (NT)			

Program name	Description	Broad service category	Model of care type
Medical Retrieval and Consultation Centre (MraCC)	Medical retrieval emergency consultation for acute care cases, inter-hospital transfers and repatriation of patients back to country.	Emergency	Specialist emergency care/ Virtual ED
District Medical Officer (DMO) consults	Expert advice to remote practitioners and clinical management of patients for virtual urgent care, pre-retrieval medicine and virtual GP consults.	Non-admitted	Outpatient telehealth consultation/ Synchronous clinician-to-clinician consultation
Hearing outreach program	Outreach services to First Nations children and young people by providing audiology, ear, nose and throat (ENT) and Clinical Nurse Specialist services.	Non-admitted	Virtual specialist care to other sectors
Australian Capital Territory (ACT)			
Virtual Care Program (VCP)	Is a nurse-led, telehealth service that provides short-term monitoring and support to patients being discharged from hospital for a period of up to two weeks.	Non-admitted	Outpatient telehealth consultations (includes RPM)
Mental Health Consultation Liaison	Provides specialist mental health assessment and treatment services through a multi-disciplinary team, and support, advice and educative practices with other clinical teams, families, carers, and other agencies.	Admitted/ Emergency	Synchronous clinician-to-clinician consultation Virtual inpatient care

Appendix C International case studies

This appendix features five case studies, summarising virtual care provision in countries with comparable healthcare systems to Australia. The countries selected include:

1. Canada
2. Denmark
3. Germany
4. UK
5. USA

The case studies summarise information from interviews and desktop research, which explored current and emerging models of virtual care, and each country's approach to recording, costing and funding hospital-based virtual care activity.

Three additional countries were considered and subsequently excluded from further exploration. These include:

- **Estonia** – While virtual care delivery has been advanced within the hospital sector, the virtual care services remain largely within the outpatient service category and paid as a fee-for-service.
- **Ireland** – Further investigation revealed little progress with data capture and funding of virtual care. Ireland has just embarked on piloting HITH. Outpatients care is block funded, with no ABF application.
- **New Zealand** – It was identified that New Zealand did not have significantly different approaches to funding virtual care services in the hospital sector when compared to Australia

KEY LESSONS FOR AUSTRALIA

- Canada has recently established Management Information Systems Standards for Virtual Health Care that are effectively guiding the way virtual care is reported nationally, with an emphasis on coding virtual and in-person care separately and recording the mode of delivery and type of provider.
- HITH programs are proliferating post COVID-19 and usually involve both in-person and virtual, along with RPM. Some programs are reporting HITH activity as admitted patient care while others report it as non-admitted activity. Canada is now looking to provide some structure to reporting these programs and to establish separate costing processes.
- Canada's information standards are centred on reporting patient care. RPM activity is only reported when the data triggers a change in clinical care and an encounter with the patient. No activity is recorded for the provision of data to the hospital or the checking of the data by clinicians at the hospital.

The health system structure and funding model

Canadian Medicare is the universal, publicly funded healthcare system that provides hospital and primary care that is free at the point of use to all citizens and permanent residents. The funding and administration of this care is decentralised and largely the responsibility of the provincial and territorial governments, with variations in the way services are funded and delivered across jurisdictions. About two thirds of the Canadian population also has private health insurance (PHI) to cover costs not covered by Medicare, including private hospitals, dental and eye care, and outpatient medications.³⁹

Hospital-based specialists are mostly self-employed and provide both inpatient and outpatient services on a fee-for-service basis, with fee schedules negotiated by the provincial ministries. Specialists who bill public insurance plans are not permitted to receive payment from privately insured patients for services that would be covered under public insurance.

Hospitals are predominantly funded on a global budget or block funding basis, under which hospitals receive an allocation of funds each year to look after patients. Several provinces have been considering introducing ABF, including Quebec, Ontario, Alberta, and British Columbia, with recent plans in Quebec to extend its existing transition to ABF, with full implementation by 2027–28.⁴⁰

National information system standards

Canada developed national information standards for virtual health care in 2022, which ensures that virtual visits are recorded separately to in-person visits and the mode of care and type of provider is recorded for each visit.⁴¹ However, Canada is still working through issues regarding counting and paying for various virtual care arrangements, particularly when it involves hospital to hospital virtual care.

³⁹ Marchildon, G. P., Allin, S., & Merkur, S. (2020). Canada: Health System Review. *Health Syst Transit*, 22(3), 1-194.

⁴⁰ Government of Quebec. (2023). Budget Plan: Budget 2023-2024.

https://www.finances.gouv.qc.ca/Budget_and_update/budget/documents/Budget2425_BudgetPlan.pdf

⁴¹ CIHI. (2022). Management Information System Standards 2022. <https://www.cihi.ca/en/management-information-system-standards>, Canadian Institute for Health Information. (2022). Changes to the Reporting of Virtual Health Service Activities in the MIS Standards 2022.

Models of virtual care

Hospital at Home

Select provinces have recently started hospital at home programs, involving a dedicated team within the hospital for patients. Care can involve in-person visits from clinical staff, patient visits to outpatient clinics and RPM. For example, while an acute care at home program in Vancouver provides patients with daily in-person visits, the patient is also connected with doctors, nurses and pharmacists via a virtual call bell and telephone number. The service manages patients with sepsis, pneumonia, COPD, and dehydration.⁴²

The way hospital at home activity is recorded varies across sites, with some sites recording it as admitted patient activity and others non-admitted activity. There is a view that many of these programs tend to operate as a post-acute services and duplicate existing home intravenous programs and community care and home-based rehabilitation programs.⁴³ The Canadian Institute for Health Information (CIHI) is seeking to provide some structure to reporting and establish separate costing processes for hospital at home care, including in-person and virtual care components.

RPM

RPM occurs in admitted patient and non-admitted patient contexts. CIHI only records RPM activity when the clinical team acts on the data and information provided and this impacts on direct patient care. No activity is recorded for the provision of data to the hospital or the checking of the data by clinicians at the hospital. This has implications for unit costing of these services, whereby the total operating cost of RPM is distributed across only the activity where there is a service/care provided to the patient, in line with the information standards.

Virtual urgent care

In Nova Scotia there are hospitals that have dedicated rooms with iPad stations and nurses to help patients connect to a video call with an emergency-room doctor. The facilities are meant for low-acuity patients with coughs, colds, sprains, ear infections or urinary tract infections. Doctors working from home or even from another province can see patients and prescribe next steps such as medication, tests or a referral for other hospital services.⁴⁴

eConsult

Electronic consultation service (eConsult) is a secure web-based tool that allows clinicians, mainly primary care physicians, to electronically consult with specialists regarding their patients' medical issues. After rolling out across Ontario in 2017, eConsult has been made available across many provinces in Canada.⁴⁵

Remote presence robotics/devices

Robotic devices (e.g., telepresence robots, robotic arms) are being used to deliver remote clinical services, such as triaging, consultations, guiding and conducting some procedures (e.g., diagnostic ultrasonography). For example, a robotic device can be operated from a central location with trained staff and be controlled remotely to perform ultrasounds.⁴⁶

⁴² News, C. (2024). *Hospital at Home acute care program comes to Vancouver*. <https://www.cbc.ca/news/canada/british-columbia/hospital-home-care-program-vancouver-1.7173331>

⁴³ Crisci, E. (2023). Hospital-at-home programs in Canada: challenges and pitfalls. *CMAJ*, 195(18), E653. <https://doi.org/10.1503/cmaj.148441-1>

⁴⁴ CBC News. (2024). *Virtual doctor, virtual waiting room: New tech holds promise of speeding up ER wait times*. <https://www-cbc-ca.cdn.ampproject.org/c/s/www.cbc.ca/amp/1.7173776>

⁴⁵ Breton, M., Smithman, M. A., Liddy, C., Keely, E., Farrell, G., Singer, A., Lamoureux-Lamarche, C., Dumas Pilon, M., Nabelsi, V., Gaboury, I., Gagnon, M.-P., Steele Gray, C., Shaw, J., Hudon, C., Aubrey-Bassler, K., Gagnon, J., Côté-Boileau, É., & Bush, P. L. (2019). Scaling up eConsult for access to specialists in primary healthcare across four Canadian provinces: study protocol of a multiple case study. *Health Research Policy and Systems*, 17(1), 83. <https://doi.org/10.1186/s12961-019-0483-5>

⁴⁶ Moms & Kids Health Saskatchewan. Virtual Care & Remote Presence. Retrieved April 2024 from <https://momsandkidsask.saskhealthauthority.ca/about-us/provider-resources/virtual-care-remote-presence>

Denmark

KEY LESSONS FOR AUSTRALIA

- Denmark is recognised as a world leader in digital health and virtual care. By not making a clear distinction between inpatient, same day, and outpatient care, the approach to hospital funding encourages and enables providers to pursue service innovations.
- A set of DRGs (Grey Zone DRGs) have been earmarked as particularly amenable to alternative care models, allowing for the same provider reimbursement regardless of service setting or modality.
- While Denmark does not differentiate DRG tariffs for virtual care, it has the capacity to effectively monitor virtual care through administration of a long-standing national patient data registry.

The health system structure and funding model⁴⁷

Denmark has a universal and decentralised health system. Complementary voluntary health insurance is purchased by 42% of the population to cover statutory co-payments and services not entirely covered by the state. Denmark has a digital-first approach to healthcare and has had a telehealth strategy in place since 2012, which has positioned them as a world leader in health digitalisation. Denmark also has leading national virtual care solutions, bolstered by a shared medication record and a national e-health portal 'Sundhed.dk'. Nearly all citizens have access to their electronic health records and most of them utilise telemedicine services.

National block funding arrangements

Denmark has extensive experience in ABF in hospitals but has recently moved away from the use of ABF at the national level and is currently relying on a combination of block funding and targets with regional authorities, to shift underlying incentives from activity and efficiency to cost containment and quality of care⁴⁸. National ABF prices are still calculated and made available for regional authorities to use for negotiating funding agreements with local hospitals. A revised national approach to funding of hospitals is anticipated and is likely to be established as part of national health reforms.

Incentives for service innovations

There is not a clear distinction between inpatient, same day, and outpatient care in the ABF system. This has created incentives for innovation and allowed the clinical communities to work through more cost-effective models of care, including virtual care. Denmark has a longstanding national patient registry that has supported the ABF system. Patient activity data stored in the registry allows identification of whether the care provided was physical or virtual. This means that while Denmark does not differentiate tariffs for virtual care, it monitors virtual care activity.

Approximately 80 DRGs have been identified in Denmark where it is amenable for care to be provided through alternative service models. These DRGs are referred to as 'Grey Zone' DRGs, which means that the tariff is the same whether the contact is in-person or virtual.⁴⁹ Denmark does not stratify costs across

⁴⁷ OECD/European Observatory on Health Systems and Policies. (2023). Denmark: Country Health Profile 2023, State of Health in the EU. *OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels.*

⁴⁸ Milstein, R., & Schreyogg, J. (2024). The end of an era? Activity-based funding based on diagnosis-related groups: A review of payment reforms in the inpatient sector in 10 high-income countries. *Health Policy, 141*, 104990. <https://doi.org/10.1016/j.healthpol.2023.104990>

⁴⁹ The Danish Health Data Agency. (2024). Grey Zone DRGs. <https://sundhedsdatastyrelsen.dk/da/afregning-og-finansiering/takster-drg/takster-2024>

physical and virtual modes of care for the Grey Zone DRGs, but rather takes the average costs to establish tariffs. It is considered that by reimbursing hospitals that provide virtual care at the same level as those that provide physical care, an incentive to innovate is created.

Outpatient episodes of care

Denmark combines time in non-admitted care – outpatient, urgent care, virtual care – into four-hour episodes for the same condition. If total time in care exceeds 4-hours, then two episodes of non-admitted care are recorded and reported. This has implications for recording and reporting virtual care. For example, while episodes of non-admitted RPM are routinely recorded, the data does not allow identification of how many times the patient was monitored, results sent to the hospital or patients were followed up by clinical staff.

Specialist advice and guidance

In Denmark, GPs are funded by the local authorities and this process is managed separately from regional funding of hospitals. If a hospital doctor provides virtual specialist support to a GP in relation to patient care, then there will be a payment for the non-admitted patient activity at the hospital and a separate payment to the GP. However, where a doctor from one hospital consults a doctor at another hospital to support patient care, then the hospital where the patient is present can record the activity and receive funding while the other hospital will not record activity or be able to receive funding.

Models of virtual care⁵⁰

Most telemedicine programs in Denmark are centred around RPM, video-conferencing and digital photo exchange. Successfully tested and scaled telemedicine models include:

Chemo at Home

This model provides eligible patients with chemotherapy or antibiotics in a backpack, with a pump connected to an intravenous catheter. The program is used in haematological clinics across Denmark, providing 24/7 access to a hospital team.

Home monitoring of women with pregnancy complications

The telehealth solution is built on a user-friendly open-source platform and uses a tablet linked to a cardiotocograph to detect contractions and foetus heartbeat. Readings are sent to the clinician to monitor.

Additional models that were piloted, deemed successful and are now in preparation for scaling, include:

TeleCare North Program

Patients with heart or lung disease use RPM software and hardware ‘telekits’ and receive operational support from several parties including the vendor and clinicians providing virtual care.

Sensor-based digital rehabilitation program

This program enables the patient to access digitally prescribed and guided exercise programs following surgery. Technology includes wearable sensors to monitor activity, an app with a chat/call function for clinicians to provide personalised feedback and the ability for patients to report progress.

Innovative video capsule for cancer diagnostics at home

This requires patients to swallow a video capsule that records its passage through the digestive system. This is done at home with telehealth support for recordings and to transfer images to a diagnostic centre.

eHospital

Denmark has also one virtual hospital in Region Zealand. The eHospital is delivered via a strong partnership between the hospital and primary health services, allowing patients to receive care in their homes.⁵¹

⁵⁰ Healthcare Denmark. (2018). Connected Health | Denmark - a telehealth nation [White Paper].

⁵¹ Denmark Region Zealand. (2024). *eHospital*. <https://www.e-hospitalet.dk/>

KEY LESSONS FOR AUSTRALIA

- Germany employs a systematic evidence-based approach to hospital services pricing, with a national 'innovation fund' that allows for new models of care to be piloted and evaluated. Temporary payment codes are created to support the hospital service during the proof-of-concept phase.
- Models of clinical tele-consultation such as stroke and cancer care are regulated. University hospitals supporting smaller rural hospitals need to meet specified quality standards to be deemed a 'Centre of Excellence' and attract enhanced funding under ABF (a loading to the base price for relevant DRGs) through statutory health insurance (SHI).
- Clinician tele-consultation between specialist and rural health services is being integrated into ABF, with a loading applied on relevant DRGs.

The health system structure and funding

In Germany, health insurance is mandatory. Approximately 90% of the population are covered under SHI, with the remaining falling above the income threshold, covered by PHI. There is a distinct difference between hospital care and ambulatory care (including primary and specialist care). Ambulatory care is primarily funded through fee-for-service payments from the SHIs, whereas hospitals provide inpatient care through a DRG system.⁵²

The German Federal Joint Commission (G-BA) is a statutory body responsible for determining which health services are paid for by the SHI. A national innovation fund was introduced in 2016. It is through this fund that new models of care are piloted, evaluated and if successful, included by the G-BA in the benefit catalogue for insurers. During the trials, a limited number of temporary payment codes are created to financially support the provision of the services by clinicians. These evolve into permanent codes if the services are subsequently listed in the benefit catalogue.

Virtual care models

Germany has limited widespread adoption of virtual care compared to Australia, however RPM and tele-consultation amongst clinicians have formalised pathways through the G-BA.

Patient telehealth consultation

Telemedicine was largely restricted under German regulation until 2019. The country saw an acceleration of telehealth consultations throughout COVID-19. Most notably in the primary care setting, however, the acceleration has not been sustained across all service types. Insurers cover a range of telehealth consultations, however widespread adoption has been limited by data privacy, security concerns and community preference. There is also a general requirement that a patient be physically present at a consult where possible.

Clinician tele-consultation

Remote consultations between specialist and rural health services have become increasingly common. Some states in Germany are trialling service models where selected university hospitals are deemed

⁵² Blümel M, S. A., Achstetter K, Maresso A, Litvinova Y, Busse R (2022). *Germany Health System Summary* (2958-9193 (online)).

'Centres of Excellence' and provide specialty expertise, support and advice to a smaller rural hospital. These are mainly in the areas of stroke and cancer care.

Initially both university hospitals and rural hospitals received a state grant for the service, with infrastructure and staff costs covered for the university hospital and only infrastructure costs covered for the rural hospital. These arrangements are now being integrated into ABF with a loading on the base price of the Centres of Excellence for the relevant DRGs. No new DRG or payment codes have been developed to support the models.

The G-BA controls the establishment of Centres of Excellence, with requirements similar to ISO standards, to ensure the services are fit for purpose. Once established, a Centre can receive payment from the health insurers. With an accreditation 'stamp' of approval, an expert 'hub' (commonly a university hospital) provides virtual consultation or review of digital patient information, to support a rural hospital.

RPM⁵³

Germany's adoption of RPM has evolved over the past 10 years. RPM of patients with heart failure has been reimbursed by the SHI since January 2022 and has been made available to patients who meet specific criteria. Clinicians can charge a fee for service for education and counselling of patients being monitored and communication with the centre responsible for RPM. For further support, flat rate payment is provided once per quarter. For the centre responsible for RPM a flat rate payment is made per patient for collection, analysis and review of data, which may be supplemented for intensified monitoring on weekends and public holidays.⁵⁴ This model sends health data to the patients' cardiologist on a daily basis during clinic hours and if any irregularities are detected, this will trigger an intervention.

Innovative funding models

Hybrid DRGs: A hospital avoidance initiative

Germany is exploring hospital avoidance initiatives to reduce the length of stay in hospital and avoid hospital readmissions. To support these initiatives, a limited set of 'hybrid DRGs' have been identified that attract ABF at 80% of the price but are agnostic to the modality of care.⁵⁵ While this enables hospitals to be reimbursed for cost saving models of care, including day surgery, HITH and telehealth, there are concerns that lower price acts as a disincentive for innovation. Germany aims to have 25% of hospital patients funded through hybrid DRGs in the future.

⁵³ Koehler, F., Störk, S., & Schulz, M. (2022). Telemonitoring of heart failure patients is reimbursed in Germany: challenges of real-world implementation remain. *European Heart Journal - Digital Health*, 3(2), 121-122. <https://doi.org/10.1093/ehjdh/ztac017>

⁵⁴ Cosinuss. (2022). *Telemonitoring in advanced heart failure reimbursable since 2022*. <https://www.cosinuss.com/en/2022/03/22/telemonitoring-in-advanced-heart-failure-reimbursable-since-2022/>

⁵⁵ German Federal Ministry of Justice. (2023). Hybrid DRG regulation. <https://www.g-drg.de/ag-drg-system-2024/fallpauschalen-katalog/fallpauschalen-katalog-20242>

United Kingdom



KEY LESSONS FOR AUSTRALIA

- There are flexibilities within the new NHS Payment Scheme that enable commissioning bodies to support innovative local models of care, including virtual wards and virtual outpatient services.
- NHS England is building HITH capacity that is enabled by virtual care, with funding made available to establish virtual ward pathways for respiratory infections, frailty, and heart failure. Pilot data collection and patient costing efforts are being undertaken before integration into national processes.
- NHS England commissioning bodies can negotiate contracts with hospitals around volume and price for in-person and virtual outpatient activity, not making a distinction between mode of delivery. Well established data and costing systems exist for both modalities.
- Synchronous or asynchronous specialist advice to another clinician (usually a GP) regarding patient care is also able to be reimbursed under locally agreed funding arrangements.

The health system structure and funding model

The NHS in the UK provides universal access to health services on a need basis, rather than ability to pay for all UK residents. NHS services are generally free at point of use, with some notable exceptions, for example, fixed co-payments are applied to dental care and prescription pharmaceuticals in England. The responsibilities for planning, operation and management of public health agencies are devolved to the four respective governments in England, Scotland, Wales, and Northern Ireland.

NHS England uses weighted capitation to determine health funding for integrated care boards (ICBs) – the regional commissioning bodies. England has started to move away from a national ABF tariff payment system by introducing a blended payment arrangement that allows commissioning bodies and hospitals to agree fixed and variable elements to service contracts, with the variable element based on outcomes, risk sharing and activity levels as appropriate to local circumstances. The NHS Payment Scheme was introduced in 2023 and this formally introduced the aligned payment and incentives (API) blended payment mechanism for hospitals, along with block contracts for low volume services and more traditional ABF. These arrangements allow for quality incentives and best practice tariffs to incentivise national quality standards to be built into contracts.

Virtual care models

The NHS uses telehealth to supplement the provision of healthcare, with little differences in telehealth regulation compared to those applied to in-person services. The following three service models are being utilised across NHS hospital services, with established arrangements for reporting, costing and funding.

Virtual wards (including hospital at home)

NHS England defines a virtual ward as ‘an alternative to NHS bedded care that is enabled by technology’.⁵⁶ Specific temporary funding was recently provided to ICBs to establish virtual wards for two years, including virtual ward pathways for acute respiratory infections and frailty, and for patients with heart failure.⁵⁷

Targets were set for ICBs to provide capacity of 40–50 virtual beds per 100,000 population. The most recent data from NHS England⁵⁸ suggests nearly 12,000 ‘bed’ capacity has been achieved, treating over 8,500 patients. This equates to an average of 23 ‘beds’ per 100,000 population.⁵⁹ The data collection is ‘experimental’ and is conducted through specific data collection to NHS England and not yet included in routine collections.

The approved patient level costing guidance for 2023 requests NHS providers to cost virtual wards on a ‘soft implementation’ basis with a view to mandating the collection in 2024.⁶⁰

Virtual outpatient clinics

There are both long standing arrangements relating to telehealth for non-admitted care in NHS England with well-established data collections with specific in-person and virtual outpatient items, including telephone and telemedicine.

NHS providers are mandated to submit patient level costs for outpatient activity, with virtual outpatient care costs submitted separately from in-person care. These costs feed into the national payment system process.⁶¹

Virtual and in-person outpatient activity is subject to local negotiation around volume and price by the commissioning bodies as part of the API agreement, not making a distinction between mode of delivery. Where local agreement cannot be reached, previously published prices from 2020–21 should be used.⁶²

Advice and guidance

Advice and guidance are virtual activities delivered by consultant-led services which can be synchronous or asynchronous and allow a clinician (usually in primary care) to seek advice from another clinician (usually a specialist) regarding patient care. For example:

- Teledermatology services that review images prior to outpatient referrals being generated.
- Hospital pharmacists that provide specialist medication reviews for GP surgeries.

These services are seen as playing a key part in improving elective care waiting times and are reimbursed according to locally agreed arrangements under the API agreements. Providers and commissioners are required to agree a fixed payment to deliver an agreed level of service, with locally agreed variable payments for use if demand on the service is higher or lower than expected.

Innovative funding models

There are flexibilities within the new NHS Payment Scheme that enable commissioning bodies to support innovative local models of care and technology as part through the fixed element of the API blended payment system. Virtual wards and virtual outpatient services have been identified as candidates for funding. Commissioners in negotiating service contracts are required to promote these innovations, with

⁵⁶ Nuffield Trust. (2023). *Virtual wards: the lessons so far and future priorities*. <https://www.nuffieldtrust.org.uk/news-item/virtual-wards-the-lessons-so-far-and-future-priorities#:~:text=What%20is%20a%20virtual%20ward,that%20is%20enabled%20by%20technology>.

⁵⁷ NHS England. (2023d). NHS virtual wards to treat thousands of patients with heart failure at home. <https://www.england.nhs.uk/2023/10/nhs-virtual-wards-to-treat-thousands-of-patients-with-heart-failure-at-home/>

⁵⁸ NHS England. (2023a). Virtual Ward. <https://www.england.nhs.uk/statistics/statistical-work-areas/virtual-ward/>

⁵⁹ These data are a snapshot based on a specific data in December 2023.

⁶⁰ NHS England. (2023b). 2023/25 NHS Payment System: NHS provider payment mechanisms v1.1.

⁶¹ National Casemix Office and NHS England. (2024). Chapter summaries: HRG4+ 2023/24 National Costs Grouper.

⁶² NHS England. (2023c). 2023/25 NHS Payment Scheme. Annex B: Guidance on currencies.

funding models taking a holistic approach to reflecting the costs of the services and ensuring appropriate balancing of risk and rewards to strengthen sustainability.

United States of America

KEY LESSONS FOR AUSTRALIA

- Medicare in the USA is only just starting to move from the 'bricks and mortar' of hospital to virtual substitutes for admitted patient care. The loosening of regulatory rules during the COVID-19 pandemic and the recent enactment of legislation to entrench 'equivalence' in payment for virtual and in-person care is accelerating the uptake of telehealth and virtual enabled HITH programs.
- Alternative payment models for hospital admitted and non-admitted care are being explored by Medicare, including bundled payments and capitation payments to effect better coordination of care and encourage innovations in care to improve outcomes and reduce costs. Examples of provider integration of virtual care into delivery models under these payment models is evident.
- Private health insurers are facing similar issues to Medicare, with the same payment processes and funding methods applying to virtual care.

The health system structure and funding model

The USA health system is a mix of private and public, for-profit, and non-profit insurers and health care providers. Medicare and Medicaid are government funded programs, providing support for older people and people on low incomes or who have a disability. PHI is the dominant form of cover, and largely provided by employers. Over 90% of the population is insured, with two thirds of the population holding private insurance. Compared to other insurance coverage types, the older population covered by Medicare have the lowest adoption rate of virtual care at 12%. Virtual care adoption is highest in mental health specialities, with over three times the uptake of other specialities.

Medicare pays hospitals through prospective ABF rates, which do not include doctor payments. Doctors are paid through a variety of methods including capitation, scheduled fees and negotiated payments. Medicare has been experimenting with alternative payment methods. For example, bundled payments are being used to encourage improved care coordination and to reward cost-effective services by having one payment for all the services delivered by multiple providers for an episode of care. However, fee-for-service remains the dominant payment method.

Virtual care models^{63,64}

The following are examples of models of virtual care which are commonly used in the USA healthcare system.

Medicare telehealth visits

Specific telehealth codes are used by Medicare to pay doctors for consultations. Prior to the COVID-19 pandemic, Medicare only covered a limited range of telehealth services. The patient had to be at a specific provider site and the consultation had to include video. These rules were loosened during the pandemic and reimbursement rates were set equivalent to those for in-person consultations. In the aftermath of the pandemic, state laws have been passed that entrench 'equivalence' in payment. From 2025, coverage of

⁶³ Medicare.gov. *Your Medicare Coverage*. Retrieved April 2024 from <https://www.medicare.gov/coverage/is-your-test-item-or-service-covered>

⁶⁴ Centers for Medicare & Medicaid Services. *Medicare Telemedicine Health Care Provider Fact Sheet*. Retrieved April 2024 from <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet>

telehealth services will again require patients to be in an office or a rural medical facility for most services, with exceptions for certain conditions, such as acute stroke or behavioural health.

The Medicare Payment Advisory Commission has outlined possible alternative approaches for paying for telehealth,⁶⁵ including:

- The bundling of telehealth services into a larger single payment to reduce the incentives to bill for more services. However, the complexity of appropriate bundling remains a challenge in implementation.
- Reducing the rates of payment for telehealth to reflect the expected lower practice and facility costs.
- Paying direct to consumer telehealth vendors at a lower rate than for clinicians that also deliver in person care, again due to the lower overheads of these providers. However, the process to recognise the vendors as a new provider type would be difficult to implement.

Acute Hospital Care at Home (AHCAH) Initiative

The Centers for Medicare & Medicaid Services launched the AHCAH initiative in 2020, in response to the COVID-19 pandemic and is scheduled to operate until the end of 2024. The initiative allows Medicare-certified hospitals to provide inpatient level care at home. The model requires significant infrastructure setup, as it involves virtual care. The model is agnostic to the type of care, with virtual care able to replace in-person care.

The program has specific requirements, including that the patient can only be admitted from an ED or an inpatient bed, an immediate on-demand remote audio connection with the AHCAH member is available, that daily remote or in-person patient evaluation is undertaken, and patient safety metric tracking and reporting is provided.

Medicare has provided grant-based funding for the infrastructure and equipment, with the operation of the model usually funded through a bundled payment.

Virtual check-ins

This refers to a brief (5–10 minute) patient-initiated check-in between established patients and clinicians via a telecommunication device to decide whether an office visit or another service is needed and can include a remote evaluation of video and/or images submitted by the patient.

E-visits

Generally refers to patient-initiated communication between an established patient and their practitioner through an online patient portal. Communications can occur over a 7-day period. It can also refer to hospital specialists supporting primary care doctors in rural locations, using both synchronous and asynchronous virtual modalities. In these instances, both the hospital specialist and the primary care doctor can claim a fee-for-service payment.

RPM

RPM is expanding in the USA, with two main payment methods:

- Monthly bundled payment, whereby one payment for RPM is paid to cover recording and transmission, staff monitoring and clinical action, where necessary.
- Integration into a global payment system which helps the clinicians to decide what care to provide and by what modality. For example, Kaiser Permanente (major health care provider organisation) has experience in integrating virtual care through this method.

Providers in the USA tend to focus on short term return on investment, preferring the use of RPM on episodic patients with heart failure and post-acute COPD rather than continuous and longer-term monitoring of patients with diabetes.

⁶⁵ Medicare Payment Advisory Commission. (2023). *Medicare and the Health Care Delivery System: Report to Congress - June 2023*. https://www.medpac.gov/wp-content/uploads/2023/06/Jun23_MedPAC_Report_To_Congress_SEC.pdf

Appendix D Details of hospital service data collections in Australia

The section summarises information according to key datasets relating to non-admitted care, emergency care and admitted care.

D.1 Non-admitted care

D.1.1 National

Non-admitted hospital patient activity is reported nationally using data from two different databases.⁶⁶

- **Clinic-level** data from national Non-admitted patient care aggregate database (NNAPC(agg)D) is used to describe overall Non-admitted patient care reported.
- **Episode-level** data from national Non-admitted patient episode-level database (NNAP(el)D) accounts for 80% of Non-admitted patient service events. These service events are specified to provide more detailed information, including:
 - patient characteristics of those who used these services
 - how the services were delivered
 - the type of care provided.

The data sets for these databases are the Non-admitted patient care aggregate NBEDS and Non-admitted patient NBEDS, respectively.

Non-admitted patient service event

The fundamental unit of measurement for non-admitted hospital patient activity is a 'service event'. For national data purposes, a non-admitted patient service event is defined as "an interaction between one or more health-care provider(s) with one non-admitted patient, which must contain therapeutic/clinical content and result in a dated entry in the patient's medical record."⁶⁷

Service events delivered via ICT, including but not limited to telehealth and where the patient is participating via a video link, are included if:

- they are a substitute for an in-person service event
- the definition of a service event is met.

A telehealth consultation has a service event counted at the location of the healthcare provider and the location of the patient, whereas a telephone consultation is only counted as one non-admitted patient service event, irrespective of the number of health professionals or locations participating in the consultation.

⁶⁶ AIHW. (2024b). *Non-admitted patient activity*. <https://www.aihw.gov.au/reports-data/myhospitals/intersection/activity/nap#:~:text=A%20non%2Dadmitted%20patient%20service,in%20the%20patient's%20medical%20record.>

⁶⁷ AIHW. (2023). *Non-admitted patient NBEDS 2024–25*. <https://meteor.aihw.gov.au/content/775784>

Service delivery mode

The 'service delivery mode' data element is included in the Non-admitted patient NBEDS for 2024–25, which allows the recording of modality by which a service event was conducted.⁶⁸

Tier 2 Non-Admitted Services Classification

The Tier 2 classification was developed to support the introduction of ABF for Non-admitted hospital services. It provides a standard framework under which clinics providing similar health services can be grouped together, with each resultant group being referred to as a class.

The Non-admitted patient NBEDS is the primary non-admitted patient data set specification reported for ABF purposes.⁶⁹

Non-admitted patient service event by ICT

For ABF, services delivered via ICT should be counted by the clinic providing the consultation service and by the public hospital service provider where the patient physically attends. The clinic providing the specialist consultation should be assigned to an appropriate Tier 2 class which reflects the clinic's specialisation.

The clinic where the patient physically attends should be classified to either Tier 2 class 20.55 *Telehealth – patient location* where the clinic is provided by medical officers or nurse practitioners, or Tier 2 class 40.61 *Telehealth – patient location* where the clinic is provided by allied health and/or clinical nurse specialists.⁷⁰

Non-admitted multidisciplinary case conference

Whilst MDCCs (where the patient is not present) do not meet the definition of a non-admitted patient service event, they are reported through the Non-admitted patient NBEDS for ABF purposes, provided there is documentation of the conference and associated outcomes in the patient's medical record and involves three or more health care providers who have direct care responsibilities for the patient discussed. The relevant Tier 2 classes are 20.56 for medical officer and nurse practitioner MDCC and 40.62 for allied health and/or nursing professional MDCC.⁷¹

D.1.2 States and territories

A review of the data element specifications for the state and territory non-admitted data collections that are available online confirms that New South Wales, Victoria, Queensland, and Western Australia include a data element in their collections that broadly aligns to the Non-admitted patient NBEDS 2024–25 specification.^{72,73,74,75,76} Non-admitted data collections specifications were not able to be accessed online for the other states and territories.

⁶⁸ Ibid.

⁶⁹ IHACPA. (2023b). Tier 2 Non-Admitted Services Definitions Manual 2023–24. https://www.ihacpa.gov.au/sites/default/files/2023-03/tier_2_non-admitted_services_definition_manual_2023-24_0.pdf

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² NSW Health. (2019). Non-Admitted Patient Data Collection: Reporting requirements for services provided from 1 July 2019. https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/IB2019_017.pdf

⁷³ Victorian Department of Health. (2023d). Victorian Integrated Non-Admitted Health Minimum Data Set (VINAH MDS) manual 2023–24: Section 3 – Data elements. <https://www.health.vic.gov.au/publications/victorian-integrated-non-admitted-health-minimum-data-set-vinah-mds-manual-2023-24>

⁷⁴ Queensland Health. (2023b). Queensland Health Non-Admitted Patient Data Collection: Reference Guide 2023–2024. <https://www.health.qld.gov.au/hsu/collections/qhnapdc>

⁷⁵ Western Australia Department of Health. (2023b). Non-Admitted Patient Data Collection Data Dictionary. <https://www.health.wa.gov.au/-/media/Corp/Policy-Frameworks/Information-Management/Patient-Activity-Data/Supporting/Non-Admitted-Patient-Data-Collection-Data-Dictionary.pdf>

⁷⁶ AIHW. (2023). Non-admitted patient NBEDS 2024–25. <https://meteor.aihw.gov.au/content/775784>

However, each of the jurisdictions also has variations to the national specification of the service delivery Table 10).

Table 10 | Variations in state and territory Non-admitted activity reporting

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
Variation to national service delivery mode data element	Yes	N/A	Yes	N/A	Yes	N/A	NA	N/A
• Telehealth support codes	Yes	N/A	Yes	N/A	Yes	N/A	Yes	N/A
• Case conference codes	Yes	N/A	Yes	N/A	Yes	N/A	Yes	N/A
• Patient self-administer codes	Yes	N/A	Yes	N/A	Yes	N/A	NA	N/A
• Provider end codes	Yes	N/A	Yes	N/A	No	N/A	Yes	N/A
Specific patient present codes	Yes	N/A	Yes	N/A	No	N/A	Yes	N/A
Ability to report out-of-scope Non-admitted virtual care activity	Yes	N/A	Yes	N/A	No	No	NA	N/A

N/A indicates information was not available at the time of publication.

Variations in service delivery mode data element

The key variations with the national service delivery mode data element include:

- **Telehealth support codes:** New South Wales (see Figure 9), Queensland (see Figure 11) and Western Australia (see Figure 12) have codes for capturing when a patient had support with them during a telehealth call, with New South Wales differentiating between clinical and administration support for videoconferences. In Victoria care type codes exist that enable identification of telehealth support for selected programs (e.g. palliative care).
- **Case conference codes:** New South Wales and Western Australia have specific codes for case conferences, with New South Wales differentiating between cases conferences and case planning and review.
- **Patient present codes:** Victoria (see Figure 10) and Queensland have a separate data element that allows for reporting various situations for where a patient is not present in a non-admitted patient event.
- **Patient self-administered codes:** Queensland and Western Australia have specific codes for patient self-administer codes, with differentiating diagnostic monitoring from other forms of self-administration.
- **Provider end codes:** New South Wales and Queensland have codes for capturing the provider end (clinician) as well as the patient end (receiver) for telehealth calls.

Patient Present Data Elements

The Victorian integrated Non-admitted health minimum dataset (VINAH MDS) and the Queensland Health Non-admitted patient data collection (QHNAPDC) include a client present status/patient not present indicator data element in addition to the service delivery mode data element, which allows for the recording of non-admitted events where the patient is not present. This, coupled with the service delivery mode, allows greater scope for identification of virtual care modalities where patients are not present.

For Victoria, three options exist where the patient is not present, one where only the carer or relatives are present, another where the patient did not attend a scheduled appointment and finally where the service provider contacts another person who is not the patient, the carer, or the family (for example, another service provider).

Figure 9 | NSW service contact mode data element

Service Contact Mode Code		
EDWARD Code	WebNAP Code	Descriptive Label
1	1	In Person
2	3	Audio – Clinician End
4	5	Email
5	6	No client contact – case conference
6	7	No client contact – case planning and review
7	C	Postal / courier service
8	D	Other technology – not elsewhere classified
9	9	No client contact – Other
C	G	Audiovisual – Clinician End
N	N	Audiovisual – Patient End with admin support only
P	F	Audio visual – Patient End with clinician
T	T	Audio – Patient End with clinician

Source: Non-admitted patient data collection: Reporting requirements for services provided from 1 July 2019

Figure 10 | Victorian contact delivery mode data element

Code	Descriptor
1	In person (face-to-face)
2	Telephone
3	Telehealth video
4	Written (postal/courier)
5	Electronic mail
8	Secure messaging
9	Not applicable

Source: Victorian integrated Non-admitted health minimum data set manual 2023-24

Figure 11 | Queensland service delivery mode data element

1 - In person
2 - Telephone
4 - Electronic mail
5 - Postal/courier service
6 - Telehealth - provider - END-DATED 30/06/2023
7 - Telehealth - recipient - END-DATED 30/06/2023
8 - Other
9 - Patient self-administered - other
10 - Patient self-administered - diagnostic monitoring (telemonitoring)
11 - Telehealth - provider - EFFECTIVE 01/07/2023

Source: Queensland Health non-admitted patient data collection: Reference guide 2023–2024

Figure 12 | Western Australia appointment delivery mode data element

CLP - Client Present (face to face)
ELE - Electronic (e.g. Email, SMS)
GCP - Group Client Present (face to face)
HOM - Home Visit
MCC - Multidisciplinary Case Conference - patient not present
OTH - Other
POS - Postal Service
SLF - Self-administered Treatment
TEL - Telephone
THC - Telehealth Support Clinician
THH - Telehealth at non-WA Health Site
THS - Telehealth at WA Health Site
UNK - Unknown

Source: Non-admitted patient data collection data dictionary, 2023

Reporting out-of-scope Non-admitted virtual care activity

Queensland records non admitted activity that does not meet the definition of a service event for the Non-admitted patient NBEDS,⁷⁷ including:

- **eConsults** involve the asynchronous written provision and electronic transmission of clinical advice about a patient from a healthcare provider to a healthcare provider, based on assessment of digitised clinical data sent as a request, and results in a dated entry in the patient's medical record.

Queensland has commenced inclusion of eConsults in the non-admitted patient data collection to monitor activity from 1 July 2023. eConsults are mapped to the Queensland Tier 2 Code of 76.48 for the activity of medical officers and 76.49 for the activity of nurses, allied health and other health professionals. These records are excluded from national reporting to the AIHW and IHACPA. The use of a 'local clinic code' allows identification of eConsults in the data collection.

- **Emergency Telehealth** Queensland has commenced inclusion of emergency telehealth in the non-admitted patient data collection to monitor activity from 1 July 2023. There are two main scenarios of emergency telehealth:
 - The patient is physically present at a Queensland Health public hospital ED or emergency service and that hospital seeks clinical consultation from another hospital's ED.
 - The care provider is from a public hospital ED or emergency service, but the patient is not physically present in an ED or emergency service.

Emergency Telehealth events are mapped to the Queensland Tier 2 Code of 77.60 for the activity of medical officers and 77.61 for the activity of nurses, allied health and other health professionals.

These records are excluded from national reporting to the AIHW and IHACPA. The use of a 'Corporate Clinic Code' allows identification of Emergency Telehealth in the data collection.

In their response to IHACPA's public consultation on the *Pricing Framework for Australian Public Hospital Services 2024–25*, Queensland stated that 'appropriate data elements must be developed, and data collections updated, to enable jurisdictions to report all virtual care activity and initiatives. Queensland is concerned that eConsults have a significant impact on hospital avoidance but are not currently considered in the national collections.'⁷⁸

⁷⁷ Queensland Health. (2023b). Queensland Health Non-Admitted Patient Data Collection: Reference Guide 2023-2024. <https://www.health.qld.gov.au/hsu/collections/qhnapdc>

⁷⁸ Queensland Health. (2023c). *Department of Health Submission to the IHPA: Pricing Framework for Australian Public Hospital Services 2023-24*.

D.2 Emergency care

D.2.1 National

State and territory health authorities provide data to the Australian Institute of Health and Welfare for national collation of data for the NAPEDC NMDS. The states and territories also provide the data to the Independent Health and Aged Care Pricing Authority on a quarterly basis.⁷⁹

The scope of data in the NAPEDC NMDS for 2024–25 includes only physical presentations to EDs. Advice provided by telephone or videoconferencing is out-of-scope, although it is recognised that advice received by telehealth may form part of the care provided to patients physically receiving care in the ED.⁸⁰

The Emergency service care (ESC) NBEDS and the Emergency service care aggregate (ESCA) NBEDS work together to collect data on emergency services activity in the public hospital system.⁸¹

IHACPA is currently inviting jurisdictions to submit EVC activity through the EVC DRS, as part of the Emergency Virtual Care Activity Data Submission project.⁸²

The virtual care must be equivalent to an in-person consultation, where the patient and emergency clinician interact via an audio-visual link. The patient's presenting condition and/or injury must be visible to the remote emergency clinician. The virtual care must be provided by an emergency clinician as part of a hospital ED and/or emergency service.

Situations which are in-scope are EDs or emergency services that provide virtual care to a patient who is:

- at home or other location in the community
- physically in the presence of a clinician.

This includes where the patient is in an ambulance, residential aged care facility, GP clinic and other ED/services.

Consultations between clinicians are out-of-scope and patients who are in-scope for reporting through the NAPEDC NMDS, ESC NBEDS and ESCA NBEDS are excluded from this data collection. For example, where an ED is providing virtual care to a patient physically present in another hospital's ED, then the activity of the remote service is in-scope for the EVC DRS and the activity of the ED where the patient is located should be reported through the relevant data set specification, whether this be the NAPEDC NMDS, ESC NBEDS or ESCA NBEDS.⁸³

For 2023–24, data submission is requested quarterly on a best endeavours basis and there is no requirement for jurisdictions to submit data. Victoria, South Australia and Western Australia submitted data for the first quarter of 2023–24. Data for the second quarter was due by the end of March 2024.

D.2.2 States and territory

A review of the data element specifications for the state and territory emergency care data collections that are available online confirms that Victoria, Queensland, and Western Australia have current capacity to collect and report virtual ED presentation data (as seen in Table 11).

⁷⁹ AIHW. (2024c). Non-admitted patient emergency department care NMDS 2024–25. <https://www.aihw.gov.au/reports/hospitals/non-admitted-patient-emergency-dept-care-nmds/summary>

⁸⁰ Ibid.

⁸¹ AIHW. (2024d). *Emergency service care aggregate NBEDS 2024–25*. <https://meteor.aihw.gov.au/content/775634>

⁸² IHACPA. (2023a). *Emergency Virtual Care 2023–24: Data Request Specifications*.

⁸³ Ibid.

Table 11 | Virtual ED presentation data

	NSW	VIC	QLD*	SA	WA	TAS ⁸⁴	NT	ACT
Reports virtual care ED presentations	No	N/A	Yes	No	Yes	No	No	No

*Through the Queensland non-admitted data collection

N/A indicates information was not available at the time of publication.

New South Wales

The NSW emergency department data collection (EDDC) reporting and submission requirements require all presentations to NSW public hospital or contracted private hospital EDs to be recorded, including patients that are provided with clinical assessment and advice via telehealth. Such services must be identified as being provided via telehealth.⁸⁵

However, a review of information on the variables for the data collections does not appear to support data capture where ED patients are provided with clinical assessment and/or advice via telehealth.

Victoria

Telehealth consultations provided by ED clinicians have been reportable in the Victorian emergency minimum dataset (VEMD) since July 2019.

In February 2022, the Victorian Government announced funding for Northern Health’s VVED. Victoria subsequently established guidelines to assist health services to differentiate between the VVED model and the existing telehealth model for the purposes of reporting to the VEMD from 2022–23.⁸⁶

In 2023–24 new data elements were included in the VEMD to record ED virtual care, including a ‘virtual’ code for the service type data element.⁸⁷ The VEMD now allows for two related service types, telehealth and virtual.

- A telehealth consult is one that is delivered remotely to a patient who is physically present with a nurse or doctor e.g. is in a public urgent care clinic or ED, a residential aged care service or a correctional centre.

The counting rules state that the ED that provides the consultation via telehealth should report the activity, whereas the health service where the patient physically attends should not report the presentation.

- A virtual consult is one that is delivered remotely to a patient who is not physically present with a nurse or a doctor e.g. is at home.

When reporting a ‘telehealth’ or ‘virtual’ consult, the health service providing the service must report the patient location (for example, campus, residential aged care service, correctional facility, home etc).

All consultations delivered via telehealth or virtually must be equivalent to an in-person consultation.

Queensland

Reporting of emergency telehealth events in Queensland is discussed in the non-admitted outpatient care section above.

⁸⁴ Relevant codes values not specified in available documentation.

⁸⁵ NSW Health. (2018). NSW Emergency Department Data Collection (EDDC) Reporting and Submission Requirements. https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2018_047.pdf

⁸⁶ Victorian Department of Health. (2023b). VEMD reporting guidelines telehealth and virtual consults. <https://www.health.vic.gov.au/data-reporting/victorian-emergency-minimum-dataset-vemd>

⁸⁷ Victorian Department of Health. (2023a). Victorian Emergency Minimum Dataset (VEMD) manual 2023-2024. <https://www.health.vic.gov.au/data-reporting/victorian-emergency-minimum-dataset-vemd>

South Australia

The South Australian Non-admitted emergency care (NAEC) data domain contains state-wide data about patients presenting to EDs or emergency services within South Australian public hospitals. Similar to the NAPEDC NMDS, the scope of the NAEC was still limited to physical presentations to EDs in the latest documentation retrieved online.⁸⁸

Western Australia

The Western Australian EDDC enables recording of virtual care through the departure status data element.

When a patient receives care from St John Western Australia Ambulance Service paramedics at the scene and requires WAVED services, the paramedics will connect with the WAVED command centre clinicians by telephone or video call.

The departure end status of the patient is recorded as 'virtual emergency care completed at home'.⁸⁹

Tasmania

The Tasmanian ED dataset includes ED stay—service delivery location data element which could potentially be used to allow identification of telehealth or virtual care presentations.⁹⁰ However, permitted code values were not specified in available documentation.

D.3 Admitted patient care

D.3.1 National

The Admitted patient care NMDS for 2024–25 specifies that treatment and/or care provided to a patient following admission occurs over a period and can occur in hospital and/or in the person's home, for HITH patients.

The criteria for inclusion as HITH⁹¹ includes:

- without HITH care being available, patients would be accommodated in a hospital
- the treatment forms all or part of an episode of care for an admitted patient
- the hospital medical record is maintained for the patient
- there is adequate provision for crisis care.

The Leave and HITH care NBEDS 2024–25 provides for the identification of formal absences from care facilities during an episode of admitted patient care, including periods of leave or hospital in the home care. The data element Number of days in HITH is used to capture HITH activity that may or may not involve virtual care (telehealth, RPM, store and forward).

There is currently no provision to identify use of virtual care modalities within an episode of care and/or during the days in HITH.

⁸⁸ SA Health. (2021). Non-Admitted Emergency Care Data Domain Reference Manual.

<https://www.sahealth.sa.gov.au/wps/wcm/connect/f0b277b4-0940-4007-96e6-b4c7ad2e2b36/Non-Admitted+Emergency+Care+Data+Domain+-+Reference+Manual.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-f0b277b4-0940-4007-96e6-b4c7ad2e2b36-oDvSL32>

⁸⁹ Western Australia Department of Health. (2023c). Emergency Department Data Collection Data Dictionary.

<https://www.datalinkageservices.health.wa.gov.au/wp-content/uploads/2023/08/Emergency-Department-Data-Collection-Data-Dictionary-2023.pdf>

⁹⁰ AIHW. (2024e). Tasmanian Emergency Department Data Set - 2023. <https://meteor.aihw.gov.au/content/774793>

⁹¹ AIHW. (2024a). Hospital in the home care. <https://meteor.aihw.gov.au/content/327308>

D.3.2 States and territory

A review of the data element specifications for the state and territory emergency care data collections that are available online confirms that New South Wales, Queensland, and Western Australia have current capacity to collect and report virtual care episodes of admitted care data (Table 12). Only Queensland has the ability to collect and report virtual care activity provided during an admitted patient episode of care.

Table 12 | Virtual care episodes of admitted care data

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
Ability to specifically report virtual care episodes of admitted care	No*	N/A	Yes	No	No	No	No	No
Ability to report virtual care events provided to admitted patients	No	N/A	Yes	No	No	No	No	No

*Not routinely captured

N/A indicates information was not available at the time of publication.

New South Wales

While virtual episodes of care may not be routinely captured in the data collection there may be some capacity to identify virtual admitted patient activity in some clinical units. The NSW admitted patient data collection includes a unit type on admission data element. The code list for this data element specified the description, type (admitted patient, other) and sub-category (overnight, designated psychiatric, virtual, statewide specialist unit, same day) of the units (see Table 13). A few admitted virtual units are listed including HITH, Collaborative Care Service and ED.⁹²

Table 13 | Extract of unit types on admission

16	Neonate Special Care Nursery	Admitted patient	Overnight
17	Emergency Department - Level 4 and Above	Admitted patient	Virtual
18	Mother Craft	Admitted patient	Overnight
20	Psychiatric Extended Care	Admitted patient	Designated psychiatric
21	Neuro-Psychiatry	Admitted patient	Designated psychiatric
22	Dual Diagnosis	Admitted patient	Designated psychiatric
24	Confused and Disturbed Elderly (CADE): Psychiatric Not used after 20170701	Admitted patient	Designated psychiatric
25	Hospital in the Home - General	Admitted patient	Virtual
26	Hospital in the Home - Drug and Alcohol	Admitted patient	Virtual
28	Hospital in the Home - Mental Health NOT CURRENTLY IN USE	Admitted patient	Virtual
29	Collaborative Care Service Provider - General	Admitted patient	Virtual
30	Collaborative Care Service Provider - Drug and Alcohol	Admitted patient	Virtual
32	Collaborative Care Service Provider - Mental Health	Admitted patient	Virtual
33	Coronary Care	Admitted patient	Overnight

Source: NSW Admitted Patient Data Collection: Legacy Data dictionary for data to 30 June 2023

⁹² NSW Health. (2024). NSW Admitted Patient Data Collection: Legacy Data dictionary for data to 30 June 2023. <https://www.cherel.org.au/media/38875/nsw-apdc-data-dictionary-april-2024.pdf>

NSW indicated during the consultations for the report that a 'virtual care' flag will be added to the admission episodes of care from July 2024. The flag will be for an encounter (an on/off flag), and will not identify modality type, intensity or frequency.

Victoria

The Victorian admitted episodes dataset (VAED) provides the recording of HITH as an option for the type of accommodation occupied by the patient during their admission.⁹³ Other similar or related codes include the following:

- **Off-site care** is defined as care delivered in an off-site facility which is not the patient's usual place of residence and it specifically excludes the HITH program,
- **Ward Based/Medi-Hotel** is where a patient receives treatment as an inpatient in a traditional hospital setting during the day and resides in the hospital's Medi-Hotel overnight.

While no specific virtual care accommodation type is specified, there may be opportunities to include such in the future. Similarly, the admitting unit/speciality data element could potentially allow for identification of a virtual ward but currently only HITH has a code.

The Victorian Department of Health and Human Services has reported that some admitted HITH activity is conducted virtually via videoconference. However, currently, it is not possible to identify in the VAED the mode of care delivery (i.e. whether care was delivered virtually via videoconference or in-person).⁹⁴

Queensland

Queensland Health has been capturing and incentivising virtual care delivery for admitted service categories via the QHAPDC for admitted inpatient care (e.g. telehealth, tele-handover, store and forward).⁹⁵ For example, Queensland introduced an incentive payment in 2017 for store and forward telehealth events to promote the uptake of this emerging technology.

The Queensland Hospital admitted patient data collection (QHAPDC) provides for the recording of standard ward codes for HITH and virtual care (services provided to admitted patients in their home under a virtual care model).

It also provides for identification of admitted patient telehealth in public hospital activity through the recording of telehealth sessions and events.⁹⁶ This allows reporting of the use of videoconferencing technology in the delivery of clinical care to admitted patients.

One or more telehealth events (that is, real time clinical activities provided to admitted patients) can be reported during a telehealth session (that is, the transmission of real time audio and visual information between sites). To be an event the interaction must include a patient and the clinical activity be recorded in the medical record, except where the activity is a case conference. A telehealth event may occur more than once during an admitted patient episode of care. Activity related to clinical education or Non-admitted (outpatients) patients is out-of-scope.⁹⁷

The Telehealth event type data elements allow for identification of the activities (see Table 14). Recipient and provider facility, type and unit are recorded. The provider is responsible for capturing the details of the telehealth events.

⁹³ Victorian Department of Health. (2023c). Victorian Admitted Episodes Dataset (VAED) manual 2023-24 Section 3 Data definitions. <https://www.health.vic.gov.au/publications/victorian-admitted-episodes-dataset-vaed-manual-2023-2024>

⁹⁴ Victorian Department of Health. (2022). Consultation paper on the pricing framework for Australian public hospital services 2023-24 Victorian Department of Health response.

⁹⁵ Queensland Health. (2023c). *Department of Health Submission to the IHPA: Pricing Framework for Australian Public Hospital Services 2023-24*.

⁹⁶ Queensland Health. (2023a). Queensland Hospital Admitted Patient Data Collection (QHAPDC) Manual 2023-2024. <https://www.health.qld.gov.au/hsu/collections/qhapdc>

⁹⁷ Ibid.

Table 14 | Telehealth event types

	HBCIS		Extracted/mapped by HQI as:	
	Code	Description	Code	Description
HBCIS Hospitals	19	Ward round	01	Ward round
	20	Clinical consultation	02	Clinical consultation
	21	Discharge planning case conference	03	Discharge planning case conference
	22	Cancer care case conference	04	Cancer care case conference
	23	Psychiatric case conference	05	Psychiatric case conference
	24	Multidisciplinary case conference	06	Multidisciplinary case conference
	25	Telehandover case conference	25	Telehandover case conference
	98	Other	98	Other
	99	Not stated/unknown	99	Not stated/unknown

Source: Queensland Hospital Admitted Patient Data Collection (QHAPDC) Manual 2023–2024

Other jurisdictions

In Western Australia, the ward location immediately prior to discharge data element could potentially allow reporting of virtual care similar to Queensland. However, permitted code values were not specified in available documentation.⁹⁸ Similarly, the Ward on admission/discharge data element in South Australia⁹⁹ and admission/discharge/transfer ward data element in NT could potentially allow reporting of virtual care in the future.¹⁰⁰

⁹⁸ Western Australia Department of Health. (2023a). Hospital Morbidity Data Collection Data Dictionary. <https://www.datalinkageservices.health.wa.gov.au/wp-content/uploads/2023/08/Hospital-Morbidity-Data-Collection-Data-Dictionary-2023.pdf>

⁹⁹ SA Health. (2023). Admitted Patient Care Data Elements 2022-2023. <https://www.sahealth.sa.gov.au/wps/wcm/connect/f2652cc1-996c-4c17-8115-f85beebdbab/Admitted+Patient+Care+-+Data+Elements+-+Reference+Manual+2022-2023.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-f2652cc1-996c-4c17-8115-f85beebdbab-oyuDjO>

¹⁰⁰ NT Department of Health. (2012). NT Health Data Dictionary : Inpatient Activity.

Appendix E Current state of virtual care in NSW

New South Wales Ministry of Health has provided the following summary of virtual care to inform the Virtual Care Project, as at June 2024.

Virtual Care

Activity Based Management

Response to Nous Consulting Group for the Independent Hospital and Aged Care Authority, Virtual Care National Review.

Action item: The providing of service models to Nous group for the review of virtual care services.

Document scope: Includes virtual care models to gain a better understanding of virtual care activity, costs, modes of service delivery, and models of care in NSW. This is not an exhaustive list of virtual models or models which use virtual care technologies.

Case for change:

The Activity Based funding model requires change to occur to reflect contemporary service delivery options related to virtual care. This means there is a need for a review to refine the ABF drivers (counting and reporting, classification, costing, and pricing) to ensure the national hospital funding model evolves by the nature of contemporary clinical service delivery like virtual care.

While healthcare professionals have been using technology to deliver care to patients for decades, a series of contemporary drivers are creating new opportunities to further embed virtual care in NSW health service delivery. These drivers not only reflect our need to respond to technological advances, but to the evolving consumer expectations in how technology can be used in healthcare settings and changes in demographics that are challenging ways in how care is delivered. These are:

- Healthcare provider responding to evolving consumer expectations.
- Technology advancements are providing viable complementary models of care.
- Technology can enable timely and equitable access to better value care.
- Demographic changes are challenging the way we traditionally deliver care.
- The need to integrate virtual care into existing technology and achieve interoperability state-wide.

NSW definition of Virtual Care:

Virtual care is any interaction between a patient and clinician, or between clinicians, occurring remotely with the use of information technologies. As technology has evolved so too has our terminology, and 'telehealth' services are increasingly being referred to as 'virtual care' to better reflect the broader range of technologies. Source: Virtual Care Strategy 2021-26

Technology summary:

The modes below briefly described the tools used which complements traditional models of care or deliver virtual care exclusively.

Various modes are used to deliver virtual care, this includes the use of contemporary technologies such

- Video or telephone conferencing using various technologies such as a computer, smartphone, and tablet. This is either used at an individual consultation level through to statewide camera networks, such as the critical care overbed network also know a CCON.
- Application technology, to enhance continuity of care, including service messaging, remote monitoring, daily surveys e.g., continuous glucose monitoring, cardiac monitoring, video, and image capture. Surveys related to medical, surgical, mental health signs and symptom management.

- Store and forward, the transmission of medical information between providers for advice or consultation which informs a diagnosis and treatment plan. This includes the sharing of diagnostic images, either a photo or radiological imaging to inform diagnosis and treatment plan. E.g., NSW Telestroke model.
- Non-Invasive, remote monitoring technologies. This includes the use of monitoring technologies where biometric information is captured and sent to a service to a service either intermittently or continuous monitor a client while in the community or in an acute setting for the prescribed time.
- Remote video scope technology- video laryngoscope, endotracheal intubation, otoscope (ear). These technologies are used within rural emergency
- Smart glass for wound management. Enables Hub clinicians to see wounds through the eyes of spoke provider to assist the accurate diagnosis and treat wounds that are related to metabolic and cardiovascular disease.
- Future state:
 - State service models- using multiple technologies
 - Virtual reality- mental health therapy and treatment
 - Invasive Implantable biosensors to monitor biophysical and biochemical modifiable diseases. Currently there is a strong gap between the research and clinical adoption. Early, use of this technology relates to the following challenges regulatory, clinical, patient related, and engineering.

NSW services

In NSW, virtual service setting delivery is either provided within or external to a district/network.

The document is structured by three main headings:

1. First responder
2. Statewide service delivery
3. Local Health District and Specialty Health Network

First responder

1. NSW Ambulance – Virtual Clinical Care

Provides a secondary triage process for Residential Aged Care Facility patients who require medical care, have low acuity needs. When the RACF call NSW Ambulance, an assessment for appropriateness on secondary triage is undertaken.

Provides an operational model supported by a multidisciplinary team providing in house secondary triage for low acuity call to triple 0.

This reduces avoidable transfers to hospital and support care in the community.

Model	Classification	Counting	Costing	Pricing	Funding
NSW Ambulance – Virtual Clinical Care	Nil classification for such activity	Nil counting rules	Nil	Nil price mechanism	Commonwealth Innovative funding model

Statewide service delivery

2. **Virtual Kids- State Service provided from SCHN and HNELHD**

Virtual KIDS will form a 24/7 innovative digitally enabled health network and hub, supporting community and acute paediatric COVID and respiratory care. The four unique streams have the overarching aim of preventing ED presentations, reducing inpatient length of stay and admission avoidance.

Problem statement: There is a service gap in developmentally appropriate care for children and young people with a range of conditions who are well enough to be cared for in the community. This includes patients seen by General Practitioners, reviewed in the Emergency Department, or admitted to hospital who still require monitoring and medical support during recovery from illness.

The four unique streams have the overarching aim of preventing ED presentations, reducing inpatient length of stay and admission avoidance.

1. **Collaborative Paediatric Urgent Care:** Partnerships with Healthdirect and NSW Ambulance to facilitate urgent paediatric virtual review in the home preventing ED presentations and transfers.
2. **Acute Respiratory Supportive Care:** A reduced inpatient length of stay and admission avoidance strategy for COVID and respiratory illnesses. Use of virtual acute review after an inpatient stay or presentation to the Emergency Department to support families during the acute phase of their child's illness.
3. **Local Paediatric Nursing Advice and Support:** Supportive model providing real-time paediatric non-urgent nursing advice to local services, particularly for the small rural paediatric workforce. Aiming to improve local workforce capability to support patients accessing care closer to home.
4. **Urgent Care in the Home:** A state-wide digital front door for children, enabling self-triage to a virtual urgent care service to avoid in-person Emergency Department presentations.

Future opportunities to expand the model to other common conditions

1. Asthma
2. Gastroenteritis
3. Severe eczema
4. Constipation
5. Diabetes
6. Eating Disorders
7. Low-risk febrile neutropenia

For further information see: <https://www.health.nsw.gov.au/Hospitals/Pages/urgent-care-virtual-kids.aspx>

Health Direct: Australian Government service, which support jurisdictions Work in partnership with federal, state and territory governments to help address key priorities and challenges across health, ageing and social service sectors. Deliver health services across multiple jurisdictions and health policy areas in an era of increasing digital usage and demanding consumer expectations.

3. **Virtual Adults:** Virtual GP Urgent Care Service: available when people can't contact their local GP by calling healthdirect on 1800 022 222. This is a non-admitted service. Clinical workflow: The client calls health direct. Health direct appropriately triages the condition and refers the client to an appropriate service provider dependant on the care required.

4. Telestroke

Telestroke connects local Emergency Department doctors to stroke specialists, available 24/7. In addition, consults are also made for admitted care patients where there is no stroke specialist available.

- 23 Hospital receive the service.

Nous Consultant questions

How are costs for Telestroke incurred by POWH on behalf of other hospitals treated?

- No cross charging occurs. The POWH cost is excluded from the ABF model.
- The cost is submitted separately

Are they allocated within POWH (e.g., amongst patients treated in POWH) or carved out altogether?

- No. It's an excluded cost.

- There is no ABF attached to NAP activity servicing clients in a different care stream related to emergency department and admitted care.

Model	Classification	Counting	Costing	Pricing	Funding
Telestroke Service- Provider end (neurologist)	Tier 2 classification	Occasion of service. Nil national service event counted.	Registered patient costed based on services	Nil mechanism	Innovative funding models

District Services

5. WNSWLHD- Virtual Rural Generalist Service

WNSWLHD service to small rural hospitals. Most recently there is a pilot programme where the service is extended to SNSWLHD small hospitals to provide sufficient medical coverage.

Model of care summation: VRGS doctors work both virtually and in person to provide rural generalist medical coverage for hospitals and multipurpose services (MPS) and fatigue management when a local visiting medical officer (VMO) is not available or needs a break (including overnight and on weekends). Services include video consultation to ED patients, medical management of acute inpatients, virtual ward rounds for inpatients, clinical support for residential resident in rural MPSs where the local general practitioner (GP) is not available. vRGS address these challenges by supporting hospital staff in communities where GP VMOs have retired or relocated, supporting fatigue management of GP VMOs in towns with only one or two VMOs locally, supporting gaps in roster in towns where hospital would otherwise be without medical coverage.

Role delineation: VRGS provide virtual care to non-critical ED patients, medical management of acute inpatients, virtual ward rounds for inpatients, and clinical support for RAC residents in MPS in partnership with local staff when the local GP is not available.

Costing: vRGS is allocated as an overhead cost across the small rural hospitals using the total expense as the allocation statistic. This is the methodology, while patient level data is unavailable, such as there is no information related to the patient encounter information specifically for VRGS or vCare so the only method available now is a general allocation as an overhead or direct to a program.

Model	Classification	Counting	Costing	Pricing	Funding
Virtual Rural Generalist Service provide to WNSWLHD patients	Not applicable.	Patient consults and advice is document in the patient's record.	As above.	Nil mechanism	Built into national efficient cost
Virtual Rural Generalist Service provided SNSWLHD patients	As above	As above. SNSWLHD identify the client by a data item SNSWLHD identify the ac Data item- 'virtual consult' is counted from the patient end. The costing team identify this activity to allocate the invoiced cost to the patient.	WNSWLHD expense is charged to SNSWLHD. SNSWLHD allocate the expense to the patient.	SNSWLHD- Admitted encounter	Admitted encounter as part of the national efficient cost

6. WNSWLHD vCare

vCare is a designated virtual unit that provides specialty-level advice, critical care expertise, transport, logistics, and coordination support across Western New South Wales Local Health District (WNSWLHD). vCare provides high level care close to a person’s home.

Role delineation: vCare is a designated virtual unit that provides specialty-level advice, critical care expertise, transport, logistics, and coordination support across WNSWLHD.

vCare provides a dedicated 1800 number for all referrals. Staff are prompted to select based on the purpose of their call. An access nurse (registered nurse (RN) with critical care experience) answers all calls, and then transfers them to an appropriate staff member. vCare provide the following services across the LHD:

- critical care advice
- patient flow (including tracking patients who are being transferred within or out of area or returning to the area)
- patient transport - coordination of emergency and non-emergency transport
- virtual support - intelligent monitoring and clinical deterioration. Virtual support utilises a combination of continuous monitoring (one bed per facility) and spot checks for every other bed space in the ED/inpatient area.

The virtual support technology is integrated with the eMR. Advanced algorithms track and trigger trajectory of a patient’s risk of deterioration, including sepsis and microbiology alerts. All data is shown on a dashboard for the virtual support nurse.

- Virtual support can intervene for: VTE prophylaxis, critical pathology results, yellow and red zone vital signs, incomplete or missing sets vital signs, sepsis, clinical deterioration.
- Virtual support is an extension of the bedside clinical team and supports shared responsibility and decision making to ensure patient safety, irrespective of patient location. There has been significant engagement with rural hospitals to ensure that the support offered by vCare strengthens working relationships and rural staff experiences.
- REACH for rural sites allowing a point of contact for patients and family members to escalate concerns.

Costing

The vCare services are costed to an LHD program 22011-Acute in patient for costing round 26. For costing round 27, this is to be updated to the same allocation as vRGS.

Model	Classification	Counting	Costing	Pricing	Funding
WNSWLHD vCare	Dependant on where the client is located. Nil provider activity is classified by the non-admitted patient collection.	Reporting of activity is documented in the client’s record. Nil provider activity is counted under the non-admitted patient collection. No clinic has been created.	As above.	Nil mechanism from the provider end.	Embedded and from Local Health District Budget
vCare Patient	Dependant on where the client is located	Dependent on where the client is located	Patient level costing.	Dependent on where the client is located	Dependent on where the client is located. Likely

7. Murrumbidgee Local Health District- Patient Flow Unit

Three main services, remote medical consultation service, critical care advisory service, virtual nurse assist.

Remote Medical Consultation Service. Admitted and Emergency Care.

Service provision: All sites except Wagga Wagga Base Hospital. Hospital in the Home is out of scope and sits with the base hospital provider. No remote monitoring at this stage (would like to do this), like WNSWLHD vCare or RPM service.

The following models have relevant triage pathways to ensure the appropriate service is initiated.

Patient Location: All small MLHD hospital sites.

Nurse triages and make an assessment based on the problem, signs, and symptoms reported. Provides care or connects to relevant physician from Wagga Wagga. Or the nurse connects The Remote Medical Consultation Service (RMCS) provides medical advice over the phone to ensure patients receive the treatment they need when they need it. The RMCS support clinicians in outlying hospitals by prescribing medical treatments, providing first aid advice, and identifying when further care is required.

Sometimes hospitals in outlying areas on Medical COSOP (Critical Operations Standard Operating Procedures) meaning they are not staffed by doctors all the time. In such instances the RMCS allows clinicians to:

- seek advice on appropriate treatment options
- have patients assessed via phone or video link
- avoid admitting or transporting patients' long distances unnecessarily.

Workforce and Activity: GP VMO model

- Remote rounding by GP's (Rural and Remoted Medical Services)- subcontracted services
- Remaining GP's (My Emergency Doctor) support ED patients. Subcontracted service.

Cost- is sitting with the service. The expense is not allocated to serviced patients. Issue, while medical coverage is provided. The admitting doctor cost remains while medical coverage is provided, e.g., over holidays or other leave entitlements.

Critical Care Advisory Services

The Critical Care Advisory Service (CCAS) is the first point of contact for all hospitals within MLHD without specialist critical care resources who need expert critical care advice to better look after very sick or injured patients.

The service is:

- Suitable for doctor and nurses who are treating critically ill or injured patients who need a higher level of care
- Supported by teleconferencing facilities including cameras which allow nurse coordinators to see patients and talk to treating doctors and nurses in real time, and
- Has access to doctors to train in emergency medicine, including specialists, intensive care specialists, as well as NSW Ambulance and MLHD

Technologies: Videoconferencing technologies.

Staff: FACEM on demand model using 'my emergency doctors'. MLHD have access to the FACEM model and ICU roster. MLHD tried to use local workforce but were unable to secure an internal workforce.

Staff fee structure: Billing by an hourly rate at \$300 per hour.

FACEM demand: Up to fifty calls a month or three to four a month.

Virtual Nurse Assist

Clinical Nurse Consultant support to nurses located at small hospitals and management escalation of care pathways. Predominantly it's a service to support early career nurses and intervention support.

Patient located at various sites inclusive of MPS.

Cost- Treated as an overhead. Any transport costs are allocated at the local health service.

Technologies: Audio, audiovisual, and the review of electrocardiogram.

Model	Classification	Counting	Costing	Pricing	Funding
Remote Medical Consultation	Dependant on where the client is	Reporting of activity is documented in	Costing: embedded into	Nil mechanism from the provider	Embedded and from Local Health District

Service	located. Nil provider activity is classified by the non-admitted patient collection.	the client's record. Nil provider activity is counted under the non-admitted patient collection. No clinic has been created.	district patient flow unit	end.	Budget
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8. ISLHD Acute and Non-admitted services (not exhaustive)

The two models described below are reported, counted, classified, costed, and priced under the acute care and non-admitted care stream.

Virtually enhanced Community Care (VeCC) is a multidisciplinary service that supports patients to better self-manage their health conditions in the community, improving patient health outcomes whilst prioritising patient safety and reducing potentially preventable hospital admissions. VeCC provides both face-to-face and virtual care in the community including remote monitoring, care navigation, care coordination and health coaching interventions.

VeCC manages the following patient populations:

1. Virtual Hospital Ward- supports patients who would otherwise be in a physical hospital bed. Patients are admitted under the specialty General Medicine. Wollongong Hospital is the reporting entity. Strict referral clinical inclusion and exclusion criteria applies. 'Virtual Hospital Ward' technologies utilised are related to remote monitoring technologies to measure biometric information, related to blood pressure, oxygen levels, temperature, blood glucose levels, body weight, and other tools to measure the signs and symptoms of the condition and disease. Other virtual engagement includes daily real-time assessment by medical and non-medical clinicians using audio (telephone) and audiovisual (video conference) technologies. Those that require a clinical review or additional support follow the clinical escalation pathway.

28 bed virtual hospital ward. Patient length of stay is between three to five days.

2. Virtual Enhance Community Care (VeCC)- This service is reported, counted, classified, costed, priced, under the non-admitted patient care stream. VeCC's Chronic Disease Management Service supports patients with life limiting chronic illness by providing patient-centred care and health coaching interventions empowering patient engagement in their health care decisions. Patients are also provided with remote monitoring of their blood pressure, oxygen levels, temperature, blood glucose levels, weight, and symptoms allowing real-time assessment by clinicians. Criteria includes:
 - Patients with chronic and acute respiratory disease(s)
 - Patients with mild to moderate decomposition of heart failure
 - Patients completing RCCP and/or Heart Failure Service who may benefit from additional monitoring or support
 - Patients who may be supported with Care Navigation, including accessing supports through Multicultural and Aboriginal services, or via Social Prescribing
 - Patients with chronic disease requiring end of life care

Wollongong Community Health is the reporting entity based on the clinic name ISLHD APHC Integrated Care Service Planned Care for Better Health. Health establishment registration number 3079885.

The service budget is based on the reporting entities year on year budget set by ISLHD.

Model	Classification	Counting	Costing	Pricing	Funding
Virtual Hospital Ward	Acute and Sub-Acute and Non-Acute Patient Classification.	Reporting of activity is documented in the client's record. The review of day-to-day results is	Normal patient level costing.	DRG and SNAP price weights	Activity Based Funded.

		<p>embedded into the episode of care.</p> <p>The client is registered as a hospital in the home patient. The bed type is classified as virtual.</p>			
Virtual Enhance Community Care	Tier 2 and NSW Establishment Type Classification	<p>Occasion of service and service event activity.</p> <p>The counting of remote monitoring activity is only counted as a national service event if it meets the definition.</p> <p>Where the definition is not met, the activity is counted as case planning and review and does not receive an NWAU.</p>	Normal costing process. It is unknown if the technologies are allocated to the service	<p>Tier 2 service event pricing.</p> <p>Issue the Tier 2 clinic price weight is not reflected of the service profile.</p>	Activity Based Funding

9. NSLHD Virtual Hospital Service (not stand alone)

Service: Enhanced urgent response services, centralised intake and triage, and resource consolidation and service access.

Patient Segments: Patients at risk of imminent hospitalisation, patient who benefit from urgent response/acute care via centralised clinical intake/triage. Clients are located at their residence.

Processes: Extended hours and enhanced response, streamlined intake, health monitoring, telehealth, fast track from hospital, smooth transition to primary care.

Technology: My virtual care video conferencing, remote patient monitoring, other technology to assist service delivery- digital health monitoring & digital stethoscope, AI Assisted patient selection/identification of early deterioration.

Location: NSLHD. With a staged plan on virtual care and hospital in the home services development.

Service efficiency: ED Alternative, more than 230 accepted ambulance referrals from April 2022. Referral pathways continue to expand. Hospital substitution: 293 Acute Medical Separations since November 2022, average length of stay 5.9 days, referrals are predominantly from Royal North Shore medical and surgical wards.

External referrals received from:

1. NSW Ambulance/Virtual Care Clinical Care
2. Residential Aged Care Facility
3. General Practitioner
4. Other provider
5. Self

NSLHD Existing Service Referrals

1. Emergency Department & Urgent Care Centre

2. Medical Assessment Unit and Wards (surgical and non-surgical): Includes those that require early facilitated discharge where care is transferred to the service. Other services, include Hospital in the Home (HITH).

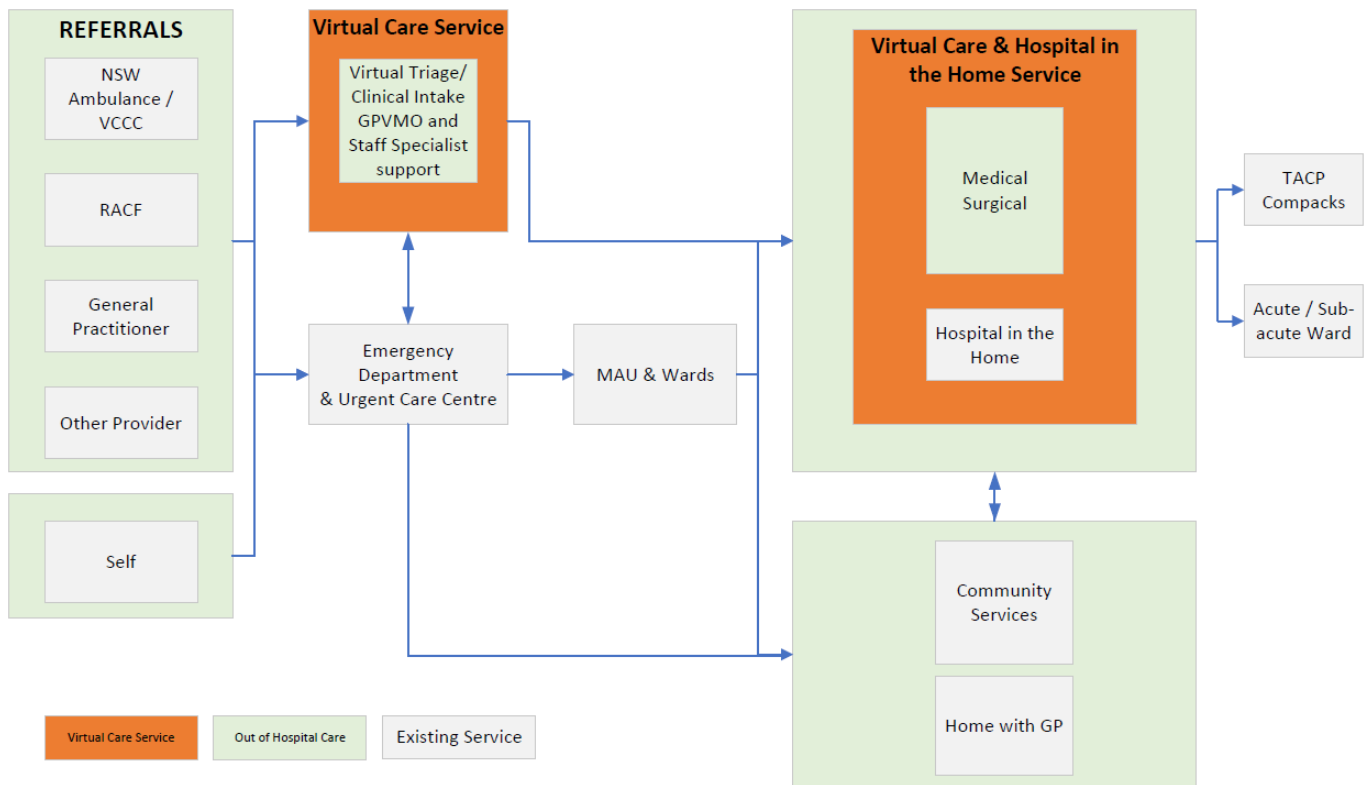
Accepted referrals fall under Virtual Care Service and Hospital in the Home Service.

Three main scenarios':

1. Immediate clinical point of care advice to advise or change the care plan. The activity is counted under the NAP collection
2. Required emergency care
3. Admitted to the service under the doctor of the day. It is a generalist model with access to other specialities.

Model	Classification	Counting	Costing	Pricing	Funding
NSLHD Virtual Hospital Service	<p>Dependant on the acuity of the client.</p> <p>The client is either classified under the Acute or Sub-acute and non-acute care or Tier 2 Classification.</p> <p>Admission is based on clinical decision.</p>	Reporting of activity is documented in the client's record relevant to the care stream		Nil mechanism from the provider end.	Embedded and from Local Health District Budget

Opportunity to use an 'admitting specialist(s) of the day' model to support continuity of care for the patient wherever they are receiving care across, VCS and HITH



10. Sydney Local Health District

1. Royal Prince Alfred Hospital

viCU (This is not part of RPA Virtual). Royal Prince Alfred Hospital - Intensive Care Outreach Services. The service runs from RPA Hospital Intensive Care Unit.

This service provides telehealth services to FWLHD Broken Hill Base Hospital intensive care unit patients.

The hub provider (RPA) reports the activity under non-admitted care.

Classified as NSW Establishment Type: 25.01 Admitted Patient Intensive Care Services. This is mapped to Tier 2 with a financial class indicating excluded data as Admitted residential, or ED.

No national service events are counted.

Service contact mode reported: audiovisual and other technology (remote patient monitoring- related to continuous ICU monitoring)

Financial class: service to admitted patient

Costing: The VICU NAP activity is pulled out of the Excluded Service Costing view (excluded because VICU has the Tier 2 of Excluded Data – Admitted, Residential or ED Service patient and financial class of Service to Admitted Patient) and a Z encounter and Z service file is created and the cost allocated to the Z Area for RPAH (subprogram 22011 -Acute Admitted patients, NSW Cost Centre -AICU). There is no cross-charging to Broken Hill.

Clinic Name	Clinic Type (Tier 2)	Financial Group	Final ABF Service Event Count	Final OOS Count
			0	169
RPAH-vicu	99.95 - Excluded Data - Admitted, Residential or ED Se...	Service to Admitted Patient	0	85
RPAH-vicu	99.95 - Excluded Data - Admitted, Residential or ED Se...	Service to Admitted Patient	0	4
RPAH-vicu	99.95 - Excluded Data - Admitted, Residential or ED Se...	Service to Admitted Patient	0	79
RPAH-vicu	99.95 - Excluded Data - Admitted, Residential or ED Se...	Service to Admitted Patient	0	1

2. Royal Prince Alfred Hospital- Hospital in the Home

SLHD HITH and EHITH services are not virtual acute care services though have some elements of virtual care.

New service- Emergency HITH- uses Bed Type 25 though most patients are assessed and managed same day.

It's also a face-to-face service seeing community dwelling mostly older patients with acute conditions referred by NSW Ambulance, RACF Outreach, Geriatricians, Palliative Care clinicians, GPs etc.

Approximately 20% of EHITH patients are transferred to the HITH team and continue as admitted Bed 25 HITH patients with HITH for ongoing care Day 2,3,4 etc.

Use videoconferencing with our advanced trainees when they visit patients to enable discussion and review by the senior doctors at HQ.

HITH is face to face and uses Bed type 25.

Technologies: Microsoft teams for videoconferencing- when visiting to discuss care with senior doctors at the Unit when junior doctors and RNs attend the patient at home.

Future investment: We are exploring using a dashboard and wearables for our most ill patient cohort to enable more frequent vital sign data capture. Intermittent rather than continuous monitoring.

3. Royal Prince Alfred Virtual Hospital

RPA Virtual is a virtual hospital facility designed to improve patient outcomes and experience, accommodate increasing demand for public hospital services, enhanced access to a specialised workforce and ensure sustainability of services.

RPA Virtual is a standalone entity. The service is open twenty-four hours a day, seven days a week.

Funding- Block funding from the commonwealth innovative model scheme.

Total 105 NAP clinic reporting activity for FY23. No other stream of care was reported for FY23. Full list of service found <https://slhd.health.nsw.gov.au/rpavirtual/service>

Royal Prince Alfred Virtual Hospital Virtual Emergency Department Far West Local Health District: An emergency service provided to Broken Hill ED. Where the hub provider, RPAV, provide FACEM support to Broken Hills Emergency Department. An agreement is in development. No cross charging is occurring.

Emergency avoidance:

Emergency Department:

Specialist emergency advice and care via video call to connect patients with the right follow-up care for their condition.

Royal Prince Alfred Virtual Hospital - Integrated Care Emergency Department to Community:

The Integrated Care Emergency Department to Community (ED to Community) initiative is an intervention for patients under the age of seventy who have been identified as high Emergency Department (ED) presenters with complex chronic health and social care needs. The initiative aims for individuals to better understand and manage their health needs and be linked into primary health and social care support in the community. The ED to Community initiative seeks to treat people holistically outside of the hospital setting. Whole-of-person care is provided in the community, supporting the unique needs of the individual person. The care is provided in an appropriate, safe, and familiar setting and aims to improve the individual's health literacy. The system benefits from partnerships and professional networks that develop across clinical areas.

People enrolled in the ED to Community model of care receive comprehensive, proactive, and time-limited support from a team of senior multi-disciplinary clinicians. The initiative better connects people to essential services through case management and case conferencing. This ensures that patients can access a regular General Practitioner (GP), can engage with social services, and are empowered to improve their health and health literacy.

Model	Classification	Counting	Costing	Pricing	Funding
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Royal Prince Alfred Virtual Hospital	Tier 2 and NSW Establishment Type	Reporting of activity is documented in the client's record relevant to the care stream	Challenges: Costing each model of care. -Daily operational costs -Ongoing operation costs -Allocation of specific information technology and wearable costs to the patient	Nil mechanism from the provider end.	Bilateral Innovative Trail funding
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11. South Easter Sydney Local Health District

Community Management Centre, Prince of Wales Hospital.

SESLHD Community Management Centre (3080300)

In general- This service provides remote patient monitoring to patients living with chronic heart failure. The service aims to reduce ED presentations and home visits so that heart failure patients can self-manage their condition in the community. We monitor these patients via a smart phone app and assess daily entries for signs of deterioration. We then escalate at risk patients to the patient's cardiac care team for early intervention.

A range of cohorts for delivered non-admitted care activity.

- Heart Failure
- COVID

Other cohorts to commence: Gestational diabetes and Indigenous follow-up.

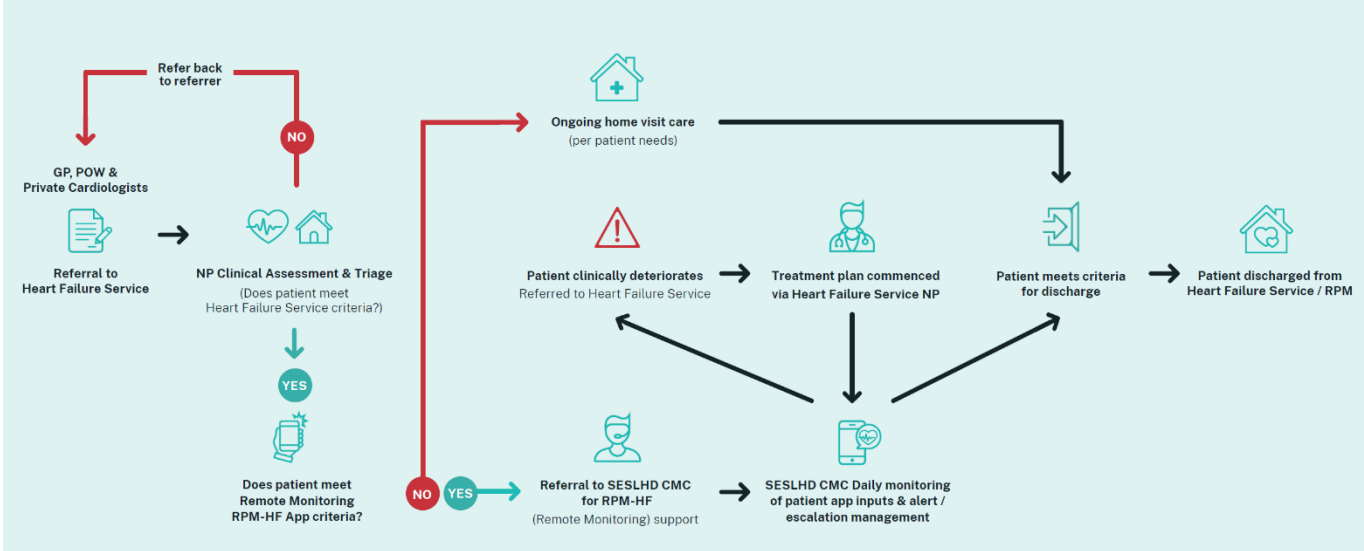
Tier 2 Class- 40.08 - Primary Health Centre. NSW Establishment Type: 32.07- Community Nursing Allied health/Nursing Unit

Patient cohorts are differentiated by local source system forms, such as the use of client lists in community health outpatient clinics.

Model	Classification	Counting	Costing	Pricing	Funding
Community Management Centre	Tier 2 and NSW Establishment Type	Occasion of service level. Challenges- high amounts of indirect care - case planning and review activity which does not attract national service event activity. Case planning and review activity includes the review remote patient monitoring activity. Where an	Normal costing is undertaken. Additional consideration required for costing of wearable devices used for remote patient monitoring. Unknown how this allocated to patient. For further investigation.	NSW class price weight.	Nil commonwealth funding. NSW fund the total service.

		interaction occurs such as a clinical review a service event is counted.			
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Remote Monitoring Heart Failure Model of Care



NSW Health invested into five districts to uptake vHospital in the Home

1. SWSLHD

A Virtual Respiratory clinical pathway will be delivered in partnership with Primary and Community Health, Digital Health, Facilities Ambulatory Care unit and local Primary Health Network (PHN). Proposed patient journey: Primary Community Care service will monitor (sub-acute) with escalation.

Cohort

- GP Managed
- Mild pneumonia
- Asthma
- COPD
- Medically Managed by HITH
 - Virtual cellulitis assessment

2. NBMLHD

- Review current HiTH Model of Care, auditing capacity of both existing workforce resource and virtual care technology requirements
- Identify best practice for provision of virtual care to patients with respiratory viral infection and draft virtually enabled Model of Care for the patient cohort.
- Uplift of vHiTH services at Nepean Hospital to include patients with respiratory viral illness
- Create HiTH service in Blue Mountains and Lithgow Hospitals through VCAT
- Create HiTH efficiencies with current resourcing - (e.g., change workflows with current services).

3. HNELHD

SCOPE - Uplift of Virtual Care in existing HiTH models

- Purchasing of additional virtual care equipment for nursing staff to provide virtual care from within patient's homes. HNE sites flagged for uplift of vHiTH services:
 - Newcastle
 - Manning
 - Maitland
 - Calvary Mater
- Daily hospital in the home provide to clients. When daily care is not required the client is discharged and followed up under the non-admitted patient care.
- Casemix
 - Acute infection
 - Anticoagulation
 - COPD
 - Heart Failure
 - Rapid Response
- **OUTCOMES**
 - Establishing these vHiTH models this will decrease nursing hours spent delivering an in-person service increasing capacity for new referrals with no expansion of resources
 - Increase in admissions to HiTH
 - Increase cellulitis referrals from ED
 - Decrease LOS or direct ED admission for cellulitis patients
 - Improved patient and carer experience with HiTH

4. ISLHD

- **SCOPE**
 - Audit and review of the current Virtually Enhanced Community Care (VeCC), Virtual Hospital Ward (VHW) and HiTH combined pathways.
- Establish the model ready for implementation required to replicate the virtual presence in ED currently at The Wollongong Hospital (TWH) for the Shoalhaven District Memorial Hospital (SDMH).
- Note: Previously described in ISLHD section.

5. CCLHD

- **VCAT (VC and Triage Team – non admitted model)**
 - Enable viral respiratory and gastroenteritis patients to be remotely, virtually monitored
 - ED presentations diverted using VCAT for diagnostics will flow patients directly into HiTH/vHiTH model, avoiding hospital admission
 - Accepts referrals from hospital, GPs, RACF, Nurse Practitioner, community.
- **2. HiTH – Expand current vHiTH service**
 - Expand virtual diagnostic capabilities and clinical examination through virtual care (e.g., implementation of clinical examination technology, utilising electronic stethoscopes, ECG monitoring, ultrasound technology and wound examination cameras).
- **OUTCOMES**
 - Increased ability for escalations outside of ED presentations
 - Enhance and capture number of hospital transfers into VCAT team
 - Capture number of clinical reviews using diagnostic and virtual health technology with the HiTH service.

Other Virtual Models of Care using Remote Patient Monitoring technologies.

Table requires updating. The table below is an example of the array of platforms used across NSW Health in addition to the Telstra Health Remote Monitoring Platform state roll out.

LHD	RPM Platform	Existing Patient Cohorts
CCLHD	Telstra MCM	Gestational diabetes service
FWLHD	Tunstall	COPD, Heart Failure
ISLHD	Philips	Chronic respiratory disease and HF
SESLHD	Kiola	Teleclinic for ED reduction focusing on chronic disease patients
WNSWLHD	Philips	COVID care in the community and gestational diabetes
HNELHD	Care Monitor	Chronic respiratory disease and paediatrics
SNSWLHD	Philips	COVID, CHF, and COPD
SVHN	Care Monitor	COVID, Diabetes, and HITH
SLHD	Alcidon	Chronic disease including diverticulitis, wound management, and diabetes
WSLHD	Care Monitor	Diabetes