Recognising the Contribution of the Home and Community Support Sector to New Zealand

November 2019

Building a better working world

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The HCSS story

- Every year the HCSS provides clinical and support services to over 100,000 New Zealanders, including patient assessment, goal setting and plans, personal care, household management and equipment.
- The large majority of these services are for older people to support the 'ageing in place' policy (with other client groups being younger people with disabilities, and people who have had accidents).
- The number of people aged 65 and over is expected to double between 2011 and 2036. By the late 2030s, people aged 65 and over will comprise almost one-quarter of New Zealand's population, meaning that many more people will be living with multiple long-term conditions.
- Most people are still interacting with the health system through a traditional episodic model of care. This approach will not provide the care needed for the ageing population.
- In line with ageing in place, the health system is increasingly funding and providing more complex care in the home setting. This is being driven by:
  - People expressing the desire to remain in their own homes for as long as possible, and maintaining ties to their local communities
  - The emergence of digital technologies that enable care to be delivered in home and community settings
  - Funders seeking more cost-effective models of care
- Age-related long-term conditions are challenging health systems globally. In response, policy makers and HCSS providers are redesigning service delivery models for older people to:
  - Improve responsiveness to the needs and aspirations of older people
  - Improve the quality and co-ordination of care for older people across the health and social care sectors
  - Reduce the reliance on hospital care, and support ageing in place
  - Ensure the financial sustainability of the health system
- The role of HCSS providers in providing care and support for people to remain in their homes and communities will become increasingly important in ensuring cost-effective care, moderating demand for acute and residential care, and coordinating care across settings and providers.
- HCSS providers are increasingly delivering care that is clinically complex, and supports the management of chronic diseases.
- The opportunity to grow HCSS' role in delivering clinical care will require a sustained focus on digital technology (eg, point of care testing; remote monitoring), training and clinical supervision to equip the non-regulated workforce to contribute to delivery of care in the community.

The HCSS story

- As DHB spending on home-based support services has increased, ARC bed days per capita of the 75+ population have decreased. This does not necessarily mean that greater DHB investment in HCSS directly contributes to fewer bed days (as it is on a 75+ per capita basis), but it could well be a significant causative factor.
- The Government's Healthy Ageing Strategy sets out a strategic direction to improve the health of older people into, and throughout their later years. It recognises the importance of HCSS in supporting people living with multiple long-term conditions, as well as the opportunity for HCSS to take a greater role in the care and support of older people.
- Implementation of the Healthy Ageing Strategy will require health care funding and delivery models to be better aligned, and investment in building the capacity of the HCSS.

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- **EY was engaged to illustrate the impact that the Home and Community Support Sector (HCSS) currently has on financial and quality dimensions of care in the New Zealand health system, and to identify the greater contribution that HCSS could make to meeting the increasing demands of a growing and ageing population**
- We undertook qualitative analysis of the issues preventing HCSS from fulfilling its full potential in the health system currently - including the impact of:

1. Population pressures
2. Variable approaches to funding
3. Provider financial viability
4. Workforce characteristics
5. Fragmented care for consumers

- We considered the current strategic context that HCSS operates in and the elements of integrated models of care that are enabled by well performing HCSS.
- We undertook quantitative analysis to demonstrate the opportunity for HCSS to fulfill its potential in the system.

The case for further investment in HCSS

Delivery of person-centred and coordinated care supporting older people to stay in their own homes longer is an increasingly important part of health system strategy. To illustrate the opportunity for HCSS, this report:

- Describes a future model of coordinated care, integrated across health and social care settings with HCSS at its core.
- Presents a perspective on the role of HCSS within this future model, including the importance of aligning delivery and funding.

However, there are some core enablers of the system that need to be in place for HCSS to provide greater person-centred care and support:

- A model that wraps services around older people and their needs.
- A model that improves individual choice, and provides a care coordinator to form a relationship with the older person with complex needs.

Core enablers need to be in place for HCSS to be delivered consistently and effectively, while also being flexible in responding to patients and their needs:

- A consistent, flexible and fit-for-purpose needs assessment model.
- Nationwide adoption of a case mix funding model that would individualise care, reduce risk, improve system effectiveness, and increase cost-efficiency.
- A technology enabled workforce, with access to shared electronic health records and care plans.

Investment in building collaborative relationships between key system stakeholders will be essential:

- A partnership approach between HCSS providers and funders will be needed to meet future demand challenges.
- In particular, strengthening trust between the leaders of DHBs and HCSS providers and is critical and will take deliberate and committed action.

Supporting older people to stay in their homes and their communities for longer not only improves person-centred and coordinated care, but also has a positive financial return:

- The impact of an improved model of care offers the opportunity for savings across three distinct patient journeys is illustrated in the EY report. This impact can be extended by leveraging the use of technology in an environment where clients expect greater participation in their own health care and support.
- An improved model of care with HCSS interventions would reduce secondary care usage (improving both patient satisfaction and cost to the system) by supporting older people to live in home and community settings with multiple long-term conditions.
- Increased spending across primary and community services can be offset by savings through reducing ED attendance, hospital readmissions and bed-days in acute and residential facilities.
- Commentary is offered on the comparative attributes of case mix, bulk and fee-for-service funding arrangements.

The effectiveness of HCSS is already proven

- Local initiatives are already demonstrating the impact of patient-centred and coordinated care.
- The success of such examples should be recognised and celebrated. Most importantly, the success of these programmes should be leveraged through the deliberate spread of innovation across New Zealand.
- The opportunity to identify and remove the barriers to spread and adoption of these innovations should be discussed with the Health and Disability System Review Panel.

Waikato DHB's START

- Waikato DHB's START programme has demonstrated a range of measurable benefits, including:
  - Decrease in overall acute hospital length of stay
  - Reduction in readmissions
  - Improved rehabilitation outcomes
- Extrapolation of the results of this programme to the New Zealand population suggests the potential to save:
  - Up to 16,190 bed-days
  - $16.8m

Canterbury DHB's CREST

- The CREST programme has produced measurable benefits, including:
  - Decrease in overall hospital length of stay
  - No subsequent increase in readmissions to hospital
- Canterbury has recently reviewed CREST and is looking to extend it for greater impact.
- Extrapolation of the results of the existing programme to the New Zealand population suggests the potential to save:
  - Approximately 35,000 bed days
  - $36.2m

Eastern Bay of Plenty's TWO

- Te Whiringa Ora is an integrated care service which jointly uses nursing staff and kaitautoko (social work staff). It has demonstrated benefits across:
  - Health outcomes (including COPD bed day utilisation and a gain of admission-free days between COPD events):
    - Improved quality of life for the client
    - Decreased frequency of outpatient usage
    - Decreased ED presentations
  - Economic analysis indicates TWO's net savings over a five-year period as $6.8m for a community of 50,000 people, and break-even within 12 months.

Next steps and recommendations

HCSS providers can have a greater impact on personal and population health outcomes of older New Zealanders, as well the financial sustainability of the health system. This will require the development of strategic partnerships with health and disability system leaders, and increased resourcing through a more effective nationwide funding model

Next steps

- HCHA should immediately engage with the Chair of the New Zealand Health and Disability System Review Panel to indicate HCHA's support for the direction set out in the Interim Report, and willingness to work on solutions.
- We suggest a detailed analysis measuring the impact of HCSS on:
  - Older people' experiences of clinical care and support services
  - Population health outcomes
  - The cost-effectiveness of health care delivery
- Depending on the outcomes of the analysis, we suggest preparation of a business case for further investment in HCSS.
- We recommend that these steps are considered as part of an HCSS review to be undertaken as a partnership with funders.

The next steps and recommendations should be considered as part of a comprehensive HCSS sector review to:

1. Recognise the full extent of the role that HCSS could play in home care for people with complex clinical needs and multiple long-term conditions, and the benefit this has on moderating hospital and residential care demand and improving financial sustainability.
2. Better understand how equity of access and unwarranted variation can be addressed and aligned with the findings of the ARC Funding Model Review.
3. Align national reimbursement, risk-sharing and cost-sharing arrangements to leverage the full extent of benefits that HCSS can offer.
4. Invest in building partnerships between key system stakeholders, and building horizontal leadership to improve the influence of HCSS across the health and social care sectors.
5. Establish a clear approach to leveraging opportunities offered by emerging technology.

Context

The New Zealand health and disability system :

- In 2018, the government established the Health and Disability System Review.[11] The Review Panel's Interim Report recognises that strengthening of the role of Tier 1 services (primary & community care) is critical.

- The Report[11b] highlights:
  - The fragmentation of the system, with providers operating under different pricing and access arrangements
  - That service availability has not kept pace with how New Zealanders expect to be able to access services or health information.
- More specifically, the Report sets out eight areas where improvement is required to strengthen the role of Tier 1 services: system designed for the consumer and their whānau, not the provider; promoting wellness; multi-disciplinary and collaborative teamwork to be the norm; enabling Māori to provide better services for Māori; learning from rural communities; clarity of mandate and accountability; changing funding mechanisms; and better data management.

The Health and Disability System within a local context:

- A trend in health service policy and design over the past decade in particular is to shift the balance of care from hospital to home or community settings. This change is gathering momentum as the population ages, and complex long-term conditions become more prevalent. Advancements in skills and technology facilitate the transition.

International health system trends are summarised in Appendix 1.

- Unfortunately, in reality little has been done to understand what is actually required to sustain effective home and community-based clinical care and support services.
- The role of HCCS is increasingly supported by international and New Zealand evidence[12], which recognises the importance of person-centred care coordination in supporting ageing in place, and avoiding unplanned presentations to acute hospitals.
- There is unwarranted variation in New Zealand's approach to commissioning of home and community services, that raises concern for equity of access to care, and the quality and sustainability of services.
- The variability may be driven by a mix of:
  - Different approaches by the various funders (ACC, DHBs, and the Ministry of Health)
  - Fiscal pressure and cost saving being prioritised over investment
  - Commissioning maturity and risk-sharing practices
  - Health sector fragmentation.

The Home and Community Health Association (HCHA)

- The HCHA represents providers of home and community health services in New Zealand. The associations objectives include providing leadership and advocacy for the sector, providing a united voice to the government and public as well as maintaining links and providing opportunities for the development of the sector.
- From the perspective of the HCHA, there are a range of factors that prevent HCSS from performing a central function in the New Zealand health system, summarised in Appendix 2.

Our approach to preparation of this report

- This EY report was informed by best practice reviews, current state assessments, stakeholder workshops, and primary and secondary analysis of both publicly available interRAI data, and data made available by Nelson Marlborough DHB.
- Stakeholders identified inconsistencies in commissioning and funding approaches, changing demographics, and poor coordination between health and social care sectors as key barriers in responding to evolving population needs.
- The same patterns were observed in our primary and secondary analysis.
- Our approach to demonstrating the value of HCSS evolved as more information came to light.
- The availability of data to evidence assumptions and assertions has been an ongoing challenge. Our findings illustrate the potential of the sector, but we recommend that in-depth quantitative analysis be undertaken as a precursor to a wider national review of the HCSS sector.

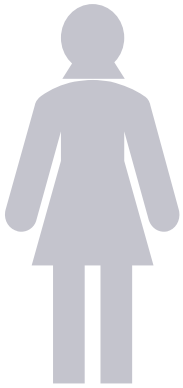
Table 1: An overview of the EY report

Section		Content
1	A profile of the HCSS sector	▸ The national operating environment is described, together with an overview of the HCSS sector with reference to how services are accessed and by whom. The funding landscape and service commissioning models are also outlined.
2	Key challenges	▸ The challenges covered include: fragmented care for consumers; variable approaches to funding; population pressures; workforce characteristics; and provider financial viability.
3	Future state	▸ We explore the policy context in which HCSS operate and describe the place for HCSS in future models of coordinated, patient-centred care. The benefits of a better coordinated commissioning approach are discussed, including illustration of a patient journey to demonstrate the role of HCSS within the wider health and social services system.
4	The opportunity	▸ Acknowledging both current and future state models, we compare three actual patient journeys with a hypothetical future state patient journey to estimate potential per patient cost savings. ▸ Future opportunities to leverage advances in technology are considered. ▸ Auckland and Waitemata DHBs are compared to national averages for acute hospitalisations and aged residential care (ARC) utilisation to ascertain opportunities to expand HCSS intervention with a view to supporting ageing in place.
5	Recommendations and next steps	▸ We set out our rationale for a comprehensive HCSS sector review, highlighting both the challenges to be overcome and the opportunities that could arise.

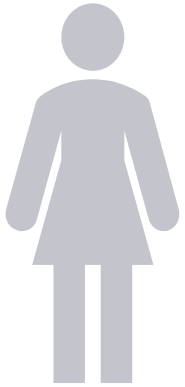
Section 1: A profile of Home and Community Support Services

Today's experience of HCSS: significant variation across New Zealand and opportunity for improvement

Richard is 80 years old. In the past year, he has seen his GP to help manage several long-term conditions. Despite consistent visits to his GP, Richard was admitted to hospital three times and required the attention of a specialist physician on four occasions. Richard was not able to benefit from the input of a District Nurse or liaison with other HCSS professionals to help improve the management of his long-term conditions and to help coordinate his multiple care needs.



Kohe is 65 years old. Like many of her friends, she suffers from cardiovascular disease and diabetes. Exacerbations of her conditions have led Kohe to seek both planned and unplanned hospital care in the past year. She regards hospital as the last resort, and would have ideally liked to avoid the planned procedure she had. Kohe was not able to benefit from improved post procedure recovery and rehabilitation services from a District Nurse and Occupational Therapist available through HCSS.

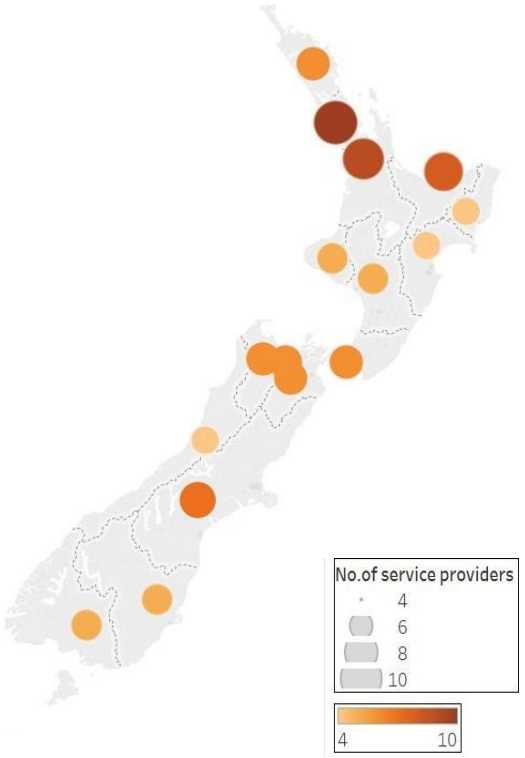


Margaret is 74 years old. She has grown frustrated with having to repeat to her medical history to multiple clinicians as part of her visits to the hospital. Margaret can't understand why her doctors and nurses from the hospital and her general practice are not coordinated in delivering her care. Margaret struggles with her personal care and domestic activities, but isn't aware of the help that is available to support her after she leaves hospital and to avoid further admissions in the future.

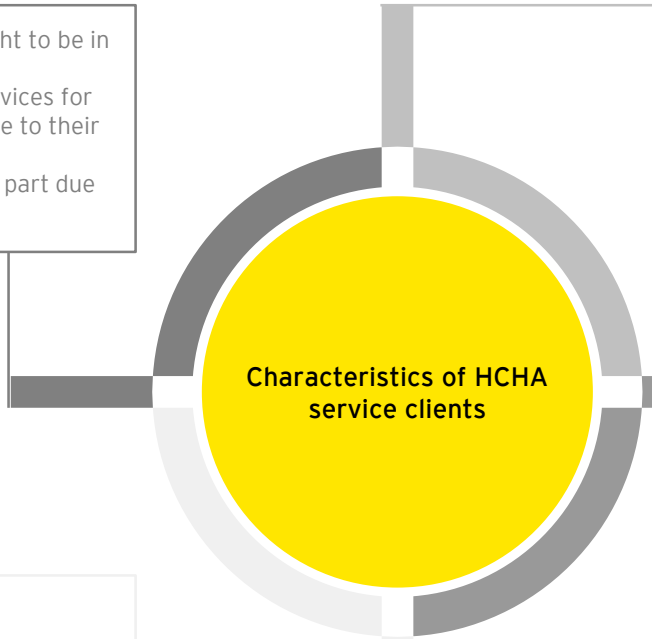
A profile of the HCSS sector

- Each year over 100,000 people receive support from the HCSS sector[13]
- These people are predominantly in older age groups:
  - 71% of recipients are over the age of 65
  - 41% of recipients are over the age of 85
- There are three different pathways to access publicly funded HCSS:
  1. 48% of recipients are funded by DHBs through support for older people
  2. 23% of recipients are funded by the Ministry of Health for disability support services
  3. 29% of recipients are funded by ACC to support recovery from injury
- 20 HCCS providers have exited the market since 2015, with only 55 providers remaining[14], the majority of whom are located in the major urban centres
- The services delivered by HCSS providers vary significantly across populations and geographies
- There is significant variation in funding models between funders and between districts, which is unrelated to population need
- The range of support the HCSS sector provides is diverse, spanning personal care, equipment supply, household support, carer support, home nursing, specialist wound care and respite care services[13]
- The HCSS sector comprises approximately 55 providers, of which 22 are members of the HCHA providing nationwide services[14]
- The range of services provided varies depending on provider size, the funding model and geographic location .
- The fee-for-service funding model is likely to be limited to personal care and household management. Providers operating under a restorative model are able to deliver more expansive and comprehensive care. Funding models are described further in Appendix 3

Figure 1: Geographical mapping of HCHA service providers across New Zealand



The characteristics of the population that access HCSS



- The profile of the 65+ cohort is thought to be in line with national averages[1,10].
- NZ Europeans receive most of the services for individuals aged 65 years and over due to their relatively aged profile
- Clients are more likely to be female in part due to their longer life expectancy

- 41% of clients are aged 85 years and over
- 58% are living with at least one chronic condition
- 56% are at risk of hospital or residential care admission
- 22% feel lonely[4]

- For those aged 65 years and over, 51.1% are in private dwellings and living as a couple. [10]

- The 'average client' receiving HCSS is a NZ European female, aged 75 years or older living with her partner in a private dwelling with at least one chronic condition

The current pathways for accessing support

Overview

Service allocation is determined by age and need. There are three pathways for accessing HCSS (in addition to privately funded):

People over 65 years of age – DHB funded

- Represents approximately 48% of HCSS sector funding[14].
- For those aged 65 and over, HCSS can be initiated by the individual, the family, friends or neighbours, or a health professional
- A DHB-funded needs assessment and service coordination (NASC) agency undertakes the assessment to determine eligibility and the mix of home-based support services that are needed
- The DHB also funds the HCSS provider to deliver those services.

People living with a disability – Ministry of Health funded

- Represents approximately 23% of HCSS sector funding[14].
- People may access Ministry-funded HCSS if they are under the age of 65 and meet the Ministry's definition of being disabled
- A NASC agency works with the person to identify their support needs, as well as outlining available support and determining whether home-based support services are required
- Accessing household management services requires the individual (or their parent/guardian if under the age of 16) to be a holder of a Community Services Card (CSC).

People living with impairments caused by accident/injury – ACC funded

- Represents approximately 29% of HCSS sector funding[14]
- ACC fund support services for people recovering from injury
- HCSS can be initiated by a doctor or other health professional completing a referral form. The individuals can also contact ACC directly
- If ACC accepts the claim and agrees to pay for home-based support, it will allocate a 'package of care', or arrange a more detailed assessment for complex cases.

Funding models used

- These funders use varying funding models – based on either fee-for-service (FFS) or bulk funding - which impacts on HCSS service provision[15].
- The 20 DHBs use either case mix or a FFS model to fund HCSS providers.

While there are a range of different funders of HCSS, we have focused this report primarily on the services funded by DHBs: older people and long-term conditions. DHBs represent 48% of HCSS sector funding.

Section 2: Key challenges facing the HCSS sector

Challenges currently facing the HCSS sector

- The health system's model of care is complex, with multiple touch points in high-cost settings.
- While there is a national assessment and coordination framework and tool, there is considerable variation in how HCSS are assigned to consumers.
- This is driven by:
  - A lack of consistency in the providers and services available in different locations
  - The assessment process does not allow providers to adapt easily to the changing needs of their clients.
- The lack of consistency between DHBs in adopting a bulk-funding model. Such a model enables the flexibility needed to most effectively and proactively manage population need.
- Where local populations have larger concentrations of the elderly, a greater concentration of HCSS is required.
- The HCSS workforce is ageing. In 2015, 54% of the workforce was aged between 45 and 64 years of age. Amongst HCSS workers serving the elderly, the largest age group was between 55 and 65 years of age.[1]
- The HCSS sector faces fiscal pressure as contract prices lag behind inflation. In response, a new wage framework was introduced by the In-Between Travel (IBT) and Pay Equity (PE) settlements.
- At present, there is no consistent overarching view on what a high-performing HCSS sector should look like, and how to achieve this. Issues such as those listed above are therefore not considered within a strategic context.
- Such challenges pose real barriers for the HCSS sector, impacting on quality, equity and cost, and therefore sustainability of the services.
- In this section of the report we provide an overview of the key challenges facing the HCSS sector, with a particular focus on:
  - Population pressures
  - Variation in care for consumers:
    - How services are accessed;
    - The assessment of need;
    - Variability in experience by providers; and
    - The current patient journey
  - Variable approaches to funding
  - Workforce characteristics
  - Provider financial viability.

Population pressures

The New Zealand population is ageing

- The number of people aged 65 and over is expected to double between 2011 and 2036, and by the late 2030s people aged 65 and over will be almost one-quarter of New Zealand's population.[2,16]
- Currently, the distribution of individuals aged 65 years and over ranges from just over 20% in areas of the South Island to 10% in Auckland. This is a stark contrast to projected 2031 estimates, where many localities will have over 30% of their population aged 65 years and over.[16]
- By 2038 it is expected that hospitalisation for those aged 65 years and over will grow to at least circa 770,000, up from 400,000 in 2018.[17]

The New Zealand population is growing

- The cumulative annual growth rate between 2018 and 2043 is expected to be 11%.[18]
- Between 2013 and 2043, Waitemata and Counties Manukau DHBs are predicted to experience a 21% growth in the population aged 65 years and over.

The New Zealand population is becoming increasingly diverse

- The 65-years and older population is becoming increasingly diverse, with growth projected across all major ethnic groups. The fastest growth is projected to occur in the Asian ethnic groups.[1]
- Projections for 2026 estimate a 200% increase in the need for home-based care by Māori, and 75% for non-Māori.[20]

The New Zealand population has a growing disease burden

- Chronic conditions are the leading cause of preventable morbidity, mortality and inequitable health outcomes, and disproportionately affect the older population.[10, 17]
- Adults aged 65 and over sustain 40% of the burden of disease in New Zealand.[10]
- In New Zealand, for adults aged 75 years and over, cancers, vascular disorders and neurological conditions are the leading causes of health loss
- As a larger proportion of the population reach this older age group, the burden of these conditions is expected to significantly increase and will impact the mix of services and investment needed in the New Zealand health system.[17]
- By 2032, 22% of New Zealanders will be aged 65 years and above.[18] In response to this trend, government policy includes 'ageing in place' as a key strategic priority – supporting people to live in their own homes for as long as possible.

Further supporting description of population impacts can be found in Appendix 5.

Variation in care: how services are accessed and the assessment of need

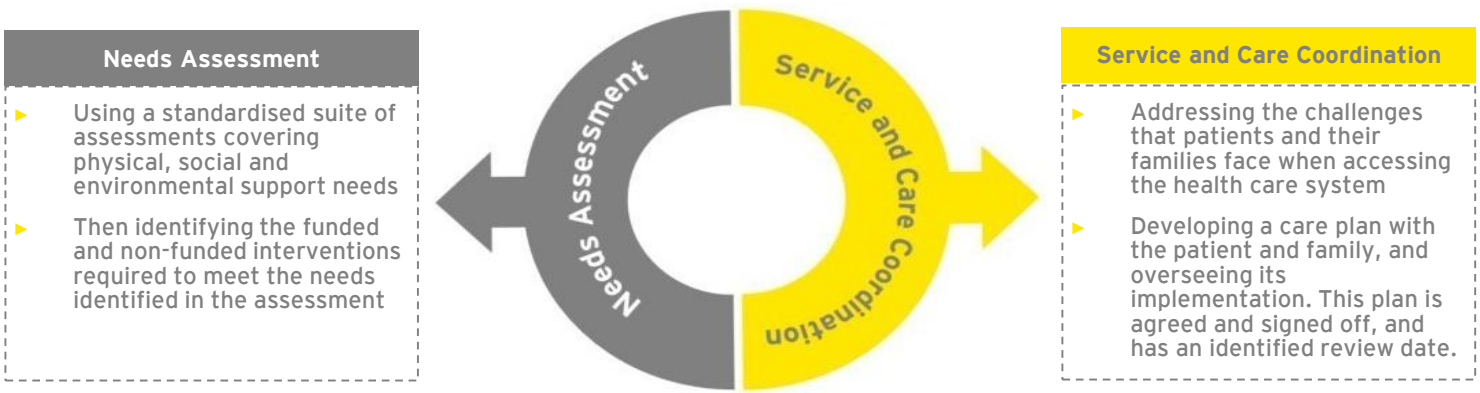
NASC assessments

- Older people access DHB-funded support services via assessment by a NASC agency.
- The NASC for older people uses a standardised assessment tool which is described further in Appendix 6.
- The NASC's role (summarised in Figure 3 below) is to[21]:
  - Identify the level of support required based on the person's strengths and needs, in their social context;
  - Outline what services are available;
  - Determine eligibility for DHB-funded support services; and
  - Provide assistance with accessing the support services.
- The volume and mix of HCSS funded by DHBs* is influenced by the funding mechanism, service delivery model and population need, as well as the NASC's strategic imperatives.

The NASC process for HCSS is applied inconsistently

- The DHB-funded NASC agencies for older people (most of which are also operated by the DHB) conduct a comprehensive assessment of a person's support needs, in the context of their carers, family, and immediate community.[21, 22].
- The HCSS sector reports that variation exists between NASCs in the way the level of care that carers, family, and the immediate community can provide is assessed.
- The HCSS sector also reports that there is no structured reassessment period for those who receive home-based support services. This differs from the ARC sector, where a formal reassessment of service needs is required every 6 months.
- Reassessment for HCSS is reported to vary by DHB, and range between 12 and 15 months, thus limiting the ability to evaluate the impact of HCSS intervention on the person's health and independence.

Figure 3: Features of the NASC assessment process



*In 2015/16 this equated to 9.5 million hours of HCSS.[14]

Variation in care: provider experience

Benefits of a standardised assessment approach

- A key benefit of a national assessment process is the consistency it provides for older people and for the sector. The NASC and the associated use of a standardised assessment tool (interRAI) should identify the client's clinical and support needs, and thereby provide the basis of a care plan.

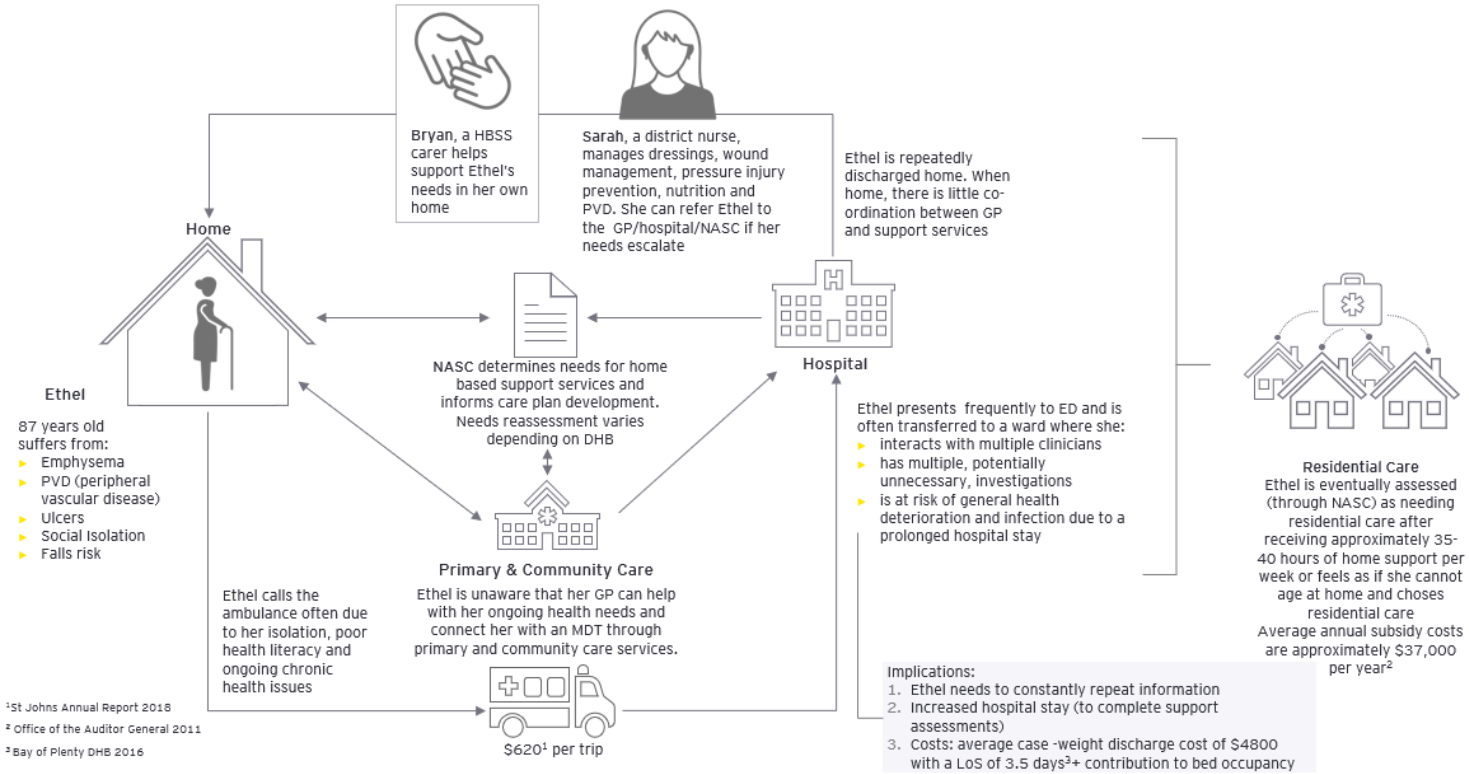
There are however challenges in the application of a national assessment process

- There is no consistency in the services available in different locations.
- A standardised approach doesn't always offer the flexibility to readily adapt to changing individual circumstances.
- There is resulting disparity in expectations between clients and providers.
- Allocation of clients to HCSS providers through the NASCs should be on an equitable basis. However, HCSS stakeholders report that deviation from this standard is common, with client referral often based on interpersonal relationships, and anecdotal knowledge of provider capacity and capability.
- This is seen as particularly the case where there are substantial changes in the individual client's condition, with referral for NASC reassessment being very relationship based.
- The increasing complexity of need that NASCs are expecting HCSS services to meet provide mean that case mix review is required. In some cases, HCSS may well be providing ARC level care in the community, whilst still being regarded by funders as support workers and cleaners.
- As case complexity increases, so does the need for closer integration of HCSS with other providers of health and social care, which is currently predominantly ad hoc and relationship based.

Variation in care: the current patient journey

- Ethel is an 87-year-old female living with multiple long-term conditions and co-morbidities. In providing health and social care and support for Ethel, the HCSS provider and the client encounter several key challenges:
  - Ethel is required to repeat the same information to different parts of the health system, which operate in silos without effective information sharing.
  - Ethel remains in hospital while her support assessments are undertaken. This contributes to unnecessary extended hospitalisation (at an average case-weight discharge cost of $4,800, and 3.5 day length of stay)[23] that also increases Ethel's risk of infection and deterioration of her general health.

Figure 4: Current patient journey

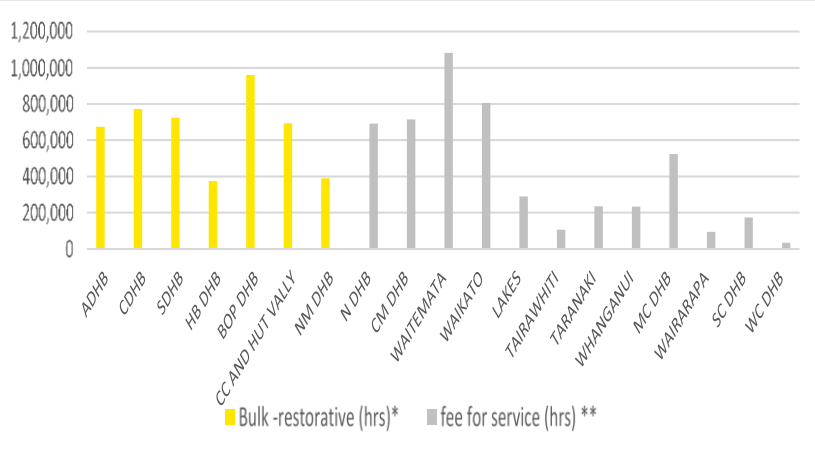


Variable approaches to funding

Multiple funders with different reimbursement methods

- The funders of HCSS (ACC, the Ministry, and the 20 DHBs) utilise different funding models – essentially either fee-for-service (FFS) or bulk funding.
- The DHBs typically use either bulk funding or FFS. Currently 12 of the DHBs pay providers through FFS, with the remainder using a bulk-funding approach based on case-mix and restorative care.

Figure 5: Total service volume hours contracted by DHBs in 2017[15]



Multiple funders with different pricing levels

- The price paid per hour under a FFS model ranges from $26.12 to $32.01[24], whilst higher rates are typically paid for restorative care contracts (where providers do the assessment and care planning).
- The 2015 Director-General's Reference Group[25] highlighted that a provider of HCSS contracted by the Ministry of Health, DHBs and ACC is paid different rates by each funder, yet may send the same worker to deliver care to an individual with comparable needs. This variation has subsequently been addressed through the 2016 Pay Equity Settlement.[26]
- The Pay Equity Settlement led to pay rises for HCSS support workers of 15-50% depending on levels of experience and qualification.[26]
- Through the settlement, the Government is providing the HCSS providers DHBs an additional $2.048 billion through DHBs and DSS primarily to cover: wage increases; other costs incurred because of the introduction of pay equity including higher leave costs, KiwiSaver contributions and ACC levies; and training.[26]

* Some of the volumes may include services for DHB clients under 65 years of age with chronic conditions, and some exclude them.
** At the time of data collection, Mid-Central DHB at that time (2017) was in the process of re-tendering on a FFS basis (restorative).
There are only 19 entries on this graph as data for Capital and Coast and Hutt Valley DHBs are combined.

Workforce characteristics

Profile of the workforce

- There are an estimated 16,000 workers in the HCSS sector.[1]
- Support workers comprise between 86% and 95% of the HCSS workforce, with the balance comprising coordinators, registered and enrolled nurses, physiotherapists, training and quality staff, administrative and finance staff, and managers.[27]
- The HCSS sector workforce comprises mostly female employees (91%), with an older age profile (54% aged between 45 and 64 years).
- It is reported that a high proportion of the workforce are part-time.[28]
- The 2018 report 'Spreading Our Wings' looked at the training and development needs of the health and disability HCSS workforce, highlighting:[1, 27]
  - Workers becoming part of multi-disciplinary teams
  - Workers are now multi-skilled
  - There are rewarding career opportunities in the sector
  - There are guaranteed hours
  - There is the ability to earn a living wage
  - There are mobile (rather than paper-based) learning options
  - The workforce is increasingly 'tech-savvy'.
- Many of the trends identified above are the result of shifts in Government policy, particularly the 2017 Pay Equity Settlement and the Care and Support Workers (Pay Equity) Settlement Act (excluding staff working solely on ACC contracts or in privately funded services).

Capacity and capability of the workforce

- 'Spreading Our Wings' proposes that over the next 40 years there will be significant difficulties in "securing adequate supply of personnel with the necessary skills to support the delivery of home and community support services, particularly for aged residential care".[1]
- The report also identified a set of factors that are impacting on the future supply of HCSS workers:
  - System-related change pressures
  - Services and the changing nature of work.
- The 2017 Pay Equity Settlement introduced a new wage framework which includes progression up wage scales dependent on tenure and qualifications, and which will have an impact on the uptake of training by the sector.[1, 18,29]
- The increased wage rates are expected to help with recruitment and retention of workers, which means better continuity of care for clients and a more stable workforce overall, and which is especially important for New Zealand's ageing population.
- The Settlement and Act link pay rates to qualifications, encouraging care and support workers to increase their qualifications, meaning that over time, New Zealand will have a more highly trained workforce.[1, 18, 29]
- 'Spreading Our Wings' highlighted four challenges the sector:
  - Cost of training
  - Literacy issues
  - English as a second language
  - Technological challenges.

Provider financial viability: overview

HCSS providers are struggling to maintain a sufficient margin

- The effect of HCSS contract prices not keeping pace with inflation, coupled with the indirect impacts of the In-between Travel (IBT) and Pay Equity (PE) settlements has seen a continued erosion of providers' margins. In combination, this effect is estimated to reduce up to 4% of the annual HCSS sector revenue.
- This has meant that providers have been running operating deficits, and had to draw down on their reserves.
- Analysis prepared by the HCHA indicated that for some of the largest HCSS providers, there was an aggregate deficit of $10,716m.[24] (Greater detail is provided in Appendix 7).
- The demand for HCSS is expected to increase with population ageing and growth, compounding this financial pressure.

The impact of pay equity requires particular attention

- Both IBT and PE have resulted in increased funding flowing to the HCSS sector, and then directly to frontline staff. This has seen a material change in both pay and conditions.
- The changes are anticipated to make the HCSS sector more attractive, and potentially moderate the costs of recruitment and turnover.
- HCSS providers report that although IBT and PE have increased funding for service delivery, not all additional costs have been accounted for. Factors with associated additional cost include*:
  - Mileage rate
  - Minimum wage
  - Leave liability
  - Banded travel
  - Paid rest breaks

We must also consider a concerning growing trend in market exits

- Since 2015, 20 providers have left the market.[14] Some of these smaller providers have been subsumed into larger providers, while others have left the market completely. The unsustainable position of the sector has been driven by three key features of the DHB contracting landscape:
  - DHB pricing pressures
  - Non-price related cost pressures.
  - Strategic decisions by the sector
- We understand that the hourly rate for household care and personal care between 2010 and 2018 has not increased proportionately (under a FFS model), and that over recent years prices increase has not kept pace with inflation.[14,30] Hourly rates in 2010 compared with 2018 for Ministry and DHB (those using a FFS model) funded services are shown in Appendix 8.
- The price range for FFS is $26.12 to $32.01 per hour.[24] The underlying data suggests that restorative care contracts generate the greatest hourly rates. It is unclear the impact this has had on provider margins.

Mitigation of the financial position is required

- At a national level, there is no overarching view of the characteristics of a high-performing HCSS sector. As a result, the impact of the aforementioned pressures on HCSS providers are rarely considered in a strategic context.
- The position could be mitigated through a national HCSS sector review. This would seek to harmonise funding models, including contracting, pricing and payment methodologies.

*These factors are expanded on in Appendix 9.

Section 3: A possible future state for the HCSS sector

Overview: A possible future state

- The New Zealand Health Strategy (NZHS) sets out a vision that all New Zealanders *live well, stay well and get well* in a system that is *people powered,* provides services *closer to home*, is designed for *value and high performance* and that works as *one team* in a *smart system*.[31.]
- The NZHS vision reflects an overall system progression towards patient-centred and coordinated care. HCSS providers are well placed to be at the heart of a future model of patient-centred and coordinated care. This refers to a model of care that is intended to improve service coordination, better manage long-term conditions, strengthen communication across the system, and tailor care to individual needs.
- Importantly, some core elements of this model of care are needed to enable this including: a more streamlined service delivery approach; well defined care pathways; enhanced system capacity; referral services and care navigation; technology to support greater patient participation in their own health; and focus on care outside of hospital settings.
- There are local examples already demonstrating the impact of patient-centred and coordinated care.The success of such examples should be acknowledged and celebrated. Most importantly, New Zealand must leverage the success of these services, taking the learnings and applying them nationwide.
- For example, Waikato DHB's START programme demonstrated a range of measurable benefits to the acute hospital, including: a decrease in overall hospital length of stay; a reduction in readmissions; and improved rehabilitation outcomes.[4,5.] Extrapolation of these results to the New Zealand population shows the potential to save up to 16,190 bed days and $16.8million.
- Canterbury DHB's CREST programme focuses on collaboration across primary and secondary care. There have already been a number of measurable benefits, including: a decrease in overall hospital length of stay with no subsequent increase in readmissions to hospital.[6,7] Extrapolation of the results of this programme to the New Zealand population shows the potential to save approximately 35,000 bed days and $36.2million.
- Te Whiringa Ora is an integrated care service which jointly uses nursing staff and kaitautoko (social work staff). It has demonstrated benefits across health outcomes, quality of life for the client, outpatient usage and ED presentations. Economic analysis estimates TWO's net savings over a five year period as $6.8m for a community of 50,000 people, breaking even within 12 months.
- To establish and support an patient-centred and coordinated model of care, the HCSS sector considers that there needs to be a nationally consistent and co-designed funding model and contracting framework.
- In this section we provide a definition of person-centred and coordinated care and describe the model's core elements, show how Ethel's experience and outcomes (page 29) would be better in the new model, describe current examples of patient-centred and coordinated models of care in New Zealand, and discuss the need for a new funding model for HCSS, in line with the approach taken recently with the ARC sector.

Understanding patient-centred and coordinated care

Patient-centered and coordinated care

- Although the purpose of this report is not to define, or develop, a patient-centred and coordinated approach to home-based care and support delivery, we make reference to a system that places HCSS within its core.
- Patient-centred and coordinated models of care can cover a range of interventions and reflect models that are person or disease specific, and population health oriented.
- We must take into account a range of initiatives that improve care coordination, communication and individualised client care, whilst reducing unwarranted variation in service delivery.
- Patient-centred and coordinated care should support improved flexibility to respond to client need; this underpins restorative care.

Restorative care

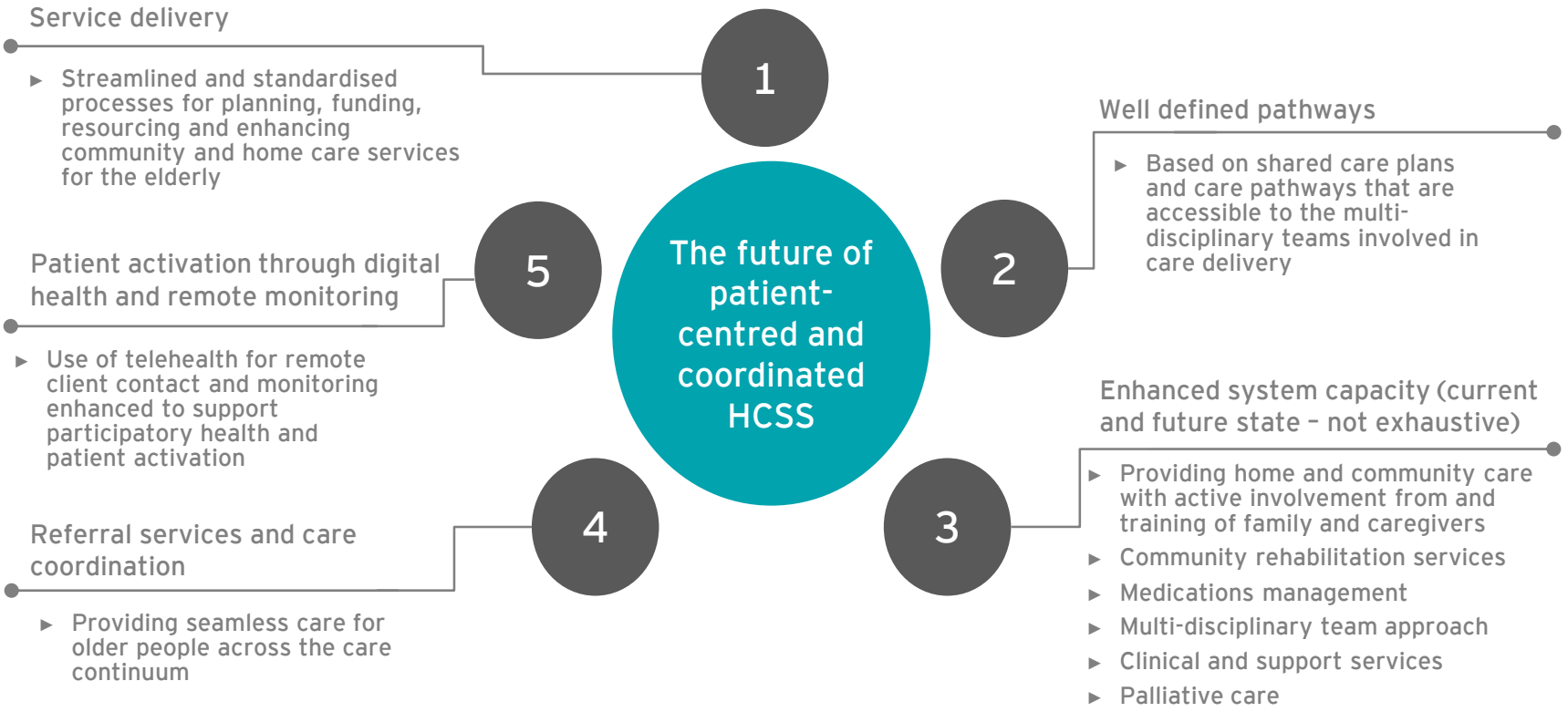
- Defined as making progress towards the goal of enhanced self-sufficiency, restorative care aims to support the client to be as independent of care as possible, and to participate within their community, family and whānau for as long as possible.[10,32.]
- The model recognises that a by-product of facilitating older people to 'age in place', contribute to society and enjoy life for longer, will be a contribution to the maintenance of a sustainable health system.[4.]
- The restorative model celebrates ageing. Autonomy and choice are respected, with a strong focus on empowering people to make healthy lifestyle choices, ensuring easy navigation of and access to health services, and inhibiting health decline through use of innovative and adaptive problem-solving techniques.[4,10]
- Of course, people will age differently, have different needs at different times and those with life-long disability may not have function restored. In part, restorative care requires balance with well managed decline that enables client / patient participation, social connection and appropriate care that ensures adequate independence and wellbeing.

Core elements of patient-centered and coordinated care in the context of restorative HCSS

- More streamlined processes for planning, funding, resourcing and enhancing home-based care and support services
  - Improved pathways to treatment
  - Two-way referral process from a centrally coordinated referral system (NASC)
  - Enhanced service delivery from HCSS providers
  - Greater use of remote monitoring and digitally guided care and support for HCSS clients over time.

Key features of a future model of person-centered and coordinated HCSS

Home-based support services must be seen as part of the core of a New Zealand integrated care model to ensure care is better coordinated and more flexible to respond to changing client needs, and operating within an system aligned to a restorative model.



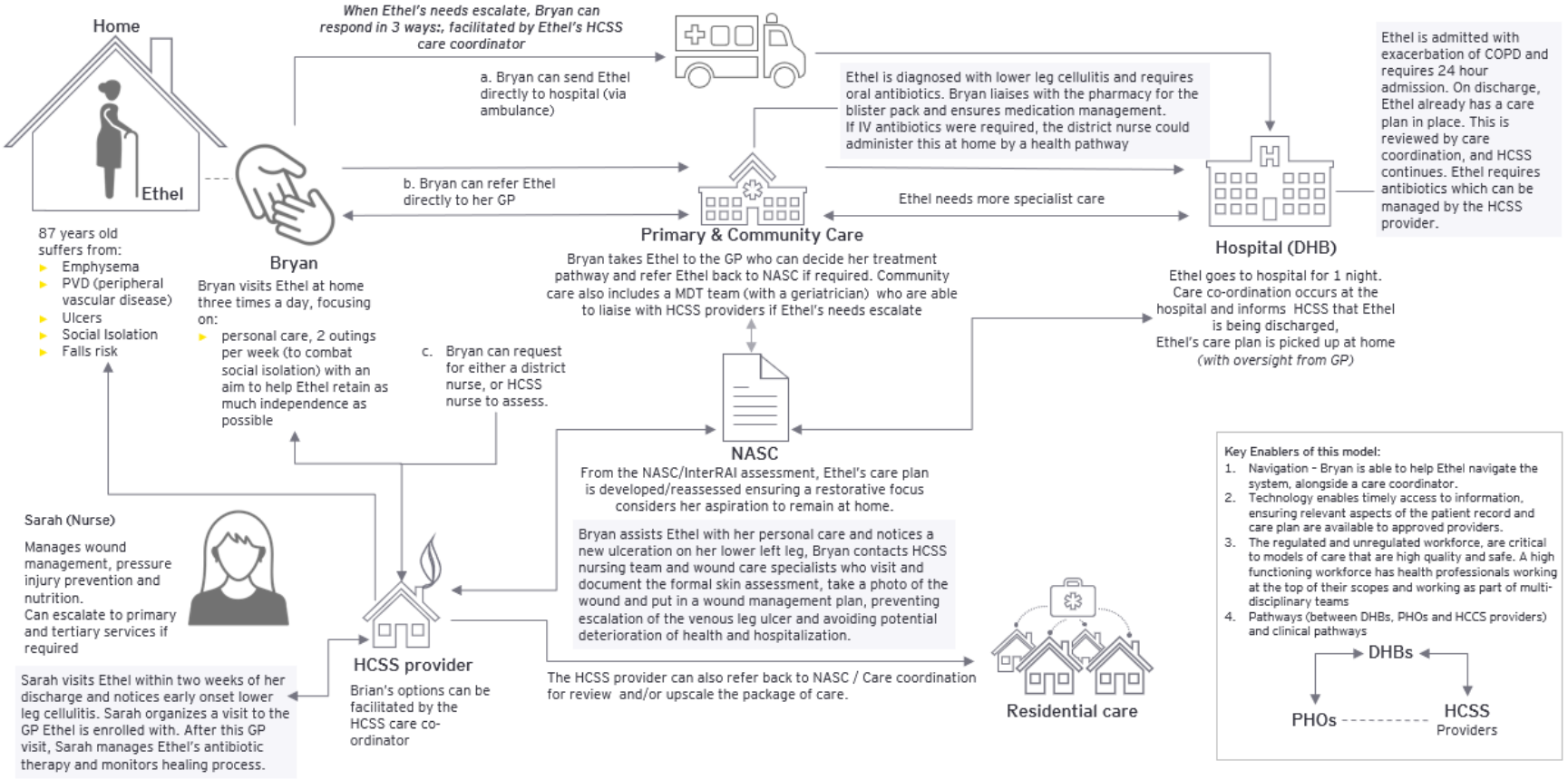
Enablers of person-centred and coordinated HCSS

Coordination	Pathways	Technology

HCSS in an patient-centred and coordinated system

On page 21, we described Ethel's experience of a fragmented system. Here we explore the role of HCSS in a patient-centred and coordinated model of care, which enables Ethel to age-in-place. The new model is illustrated below, and discussed further on the following page

Figure 6: A future state patient-centred and coordinated model of care.



HCSS in an patient-centred and coordinated system – *cont'd*

Ethel's needs are at the heart of service design

- As Ethel's example illustrates, this model will include:
  - A care coordinator
  - A focus on choice
  - A focus on prevention
  - Flexibility to adapt.

These features are already established in several areas across New Zealand, as described below.

Waikato DHB's Supported Transfer and Accelerated Rehabilitation Team (START)

- Introduced in 2012, the START programme had the aim of reducing the length of stay in hospital and risk of readmission following discharge for the elderly community.
- Older patients receive continued rehabilitation at home by trained health care assistants up to 4 times daily, 7 days a week, for up to 6 weeks under the guidance of registered nurses, allied health and geriatricians.
- On return home, direct clinical care responsibility returns to the GP and practice nurse as well as the community team. Hospital services will continue to visit the patient until return to independence or until stable (but requiring continuing input from community nursing or home care support).
- Evaluation results included:
  - Participants randomised to START spent less time in hospital during the index admission (mean 15.7 days) in comparison to usual care (mean 21.6 days) [5]
  - In the 6 months following discharge home, START recipients also spent less time (average 7.1 days) at the hospital than usual care recipients (average 12.5 days)
  - The per participant costs were $16,943 for the usual care group and $10,836 for the START group[5.]
  - START achieved its objective of not only decreasing hospital length of stay, but also significantly and effectively reducing readmissions.

Community Rehabilitation Enablement Support Team (CREST)

- Following the 2010 and 2011 earthquakes in Christchurch, Canterbury DHB put in place a new integrated model of care to help reduce average length of stay and readmission through early discharges and 6 weeks of home nursing rehabilitation.[33.]
- Access to CREST is via a general practitioner or from hospital to a rehabilitation team with home care support.
- Evaluation results included:
  - Over 4,000 people reduced their length of stay in hospital, without an increase in subsequent readmission rates[40]
  - Demand for community dementia services increased by 6.6% while demand for rest home care fell 6.7%
  - Canterbury's spending on rest home care fell from $22.25million in 2010 to $21.9million in 2011 as demand moved to appropriate community care settings

HCSS in an patient-centred and coordinated system – *cont'd*

Eastern Bay of Plenty's Te Whiringa Ora (TWO)

- Established in 2011, TWO is an integrated care service based in the community that facilitates inter-disciplinary care for clients and their whānau with the most severe needs (the top 5%).[8]
- TWO employs case managers who are registered nurses for clinical knowledge and oversight, as well as kaitautoko (social work background staff) who work with clients to navigate their care and encourage self-management. [8, 35]
- Kaitautoko are selected for their strong cultural competence, particularly Tikanga Māori, community experience and 'can-do' attitude. Given the complexity of patients in the programme, staff tend to be trained to the level of an enrolled nurse with level 3 to level 4 national certificates (at a minimum, staff achieve level 2 qualifications). [8,35]
- Evaluation in 2015 of TWO found [8, 25]:
  - Improved health outcomes – a 40% decrease in COPD bed days utilised 12 months post enrolment, as well as an additional gain of 179 admission-free days between COPD events
  - Improved quality of life for the client
  - Decreased frequency of outpatient usage
  - Decreased presentations to the Emergency Department.
- Economic analysis[9] estimated TWO's net savings over 5 years was $6.8million for a community of 50,000 people, after breaking even within 12 months.
- As kuia and kaumatua are more likely to be cared for at home by whānau, making up only 2% of ARC residents, evidence of models such as TWO that are culturally appropriate and responsive are important to achieving equity.[35]

The potential size of the opportunity

Waikato DHB's Supported Transfer and Accelerated Rehabilitation Team (START)

- In the START study, patients had to be over the age of 65, in hospital at time of referral, did not need further acute care, and were considered to have potential for partial or complete recovery within 6 weeks.
- Using FY18 national data, if we assume AT&R discharges in New Zealand where no further acute care occurred within the next 6 weeks for patients aged over 65, and that the evaluation's difference in mean length of stay held, then up to **~16,190** bed days and **$16.8million** could be saved, based on the findings of the evaluation.

Community Rehabilitation Enablement Support Team (CREST)

- It is difficult to robustly quantify the potential savings of a programme such as CREST given the lack of patient context and how applicable it may be to other areas; therefore, the analysis below is an indicative view of potential savings.
- If we assume that over the period of 2011 to 2014, that approximately 1,000 people were supported to reduce their length of stay each year (4,000 total over the period), and that the reduction in length of stay (and cost between cohorts) was similar to START's evaluation (average reduction of 5.9 days, average cost reduction of $6,107), then that would be equivalent to roughly 5,900 bed days and $6.1million across Canterbury. Extending this to the national level increases potential bed day savings to approximately **35,000** bed days and **$36.2million** across New Zealand.

Te Whiringa Ora (TWO)

- Taking a health system view of the potential savings, a 2015 evaluation of TWO found a 40% decrease in COPD bed days used 12 months post enrolment, and an additional gain of 179 admission-free days between COPD events. Improvements in patient quality of life as well as decreased frequency of outpatient usage and ED presentations were also found.
- Economic analysis estimated TWO's net savings to the health system over five years was **$6.8 million** for a community of 50,000. This analysis assumed 2040 participants would go through TWO in this 5-year period, equating to savings of **$3,333** per person across the period, and a potential to break-even within 12 months.
- This analysis considers savings to the health system exclusively. However, with a holistic view of wellbeing and the potential impact of this intervention for the individual and their whānau, further potential savings could be realised.

Coordinated commissioning: the funding model

- The HCHA commissioned report 'Putting the Case'[15] presents strong arguments for harmonising the different funding models for HCSS. The focus on sustainable funding models is not new, and the subject is covered in significant detail in the *Towards Better Home and Community Support Services for all New Zealanders: Advice to the Director-General of Health from the Director-General's Reference Group for In-Between Travel (2015).*[25.]
- EY's discussions in HCSS stakeholder workshops revealed a sector preference for a nationally consistent funding model rather than seeking additional funds under existing contracting and pricing structures.
- When combined with minimum workforce quality and training standards, a nationally consistent funding model for HCSS would ensure funds were being distributed based on population volumes and needs, rather than minimising expenditure through aggressive price-based contract negotiations.
- The desirable features of a sustainable funding and contracting model were developed by the Director-General's Reference Group[25] and are set out in the Appendix 10. The Reference Group considered that there are four funding model options:
  - Payment per hour (FFS)
  - Payment per week (or longer) with people assigned to payment categories based on assessed need
  - Bulk funding
  - Individualised and enhanced individualised funding (IF & EIF).
- The pros and cons of each of these were outlined in the Reference Group's report and are reproduced in Appendix 11.[25]
- The Reference Group and subsequent position papers from the HCHA have argued strongly for the national adoption of a bulk-funded model to support a case-mix service delivery model. The bulk-funded model (when underpinned by a national funding framework) is seen as achieving the optimal balance through:
  - Allowing all funders to cap their financial exposure for services
  - Providers having financial security for the term of the contract
  - Allowing flexibility to design and deliver a suitable care pathway which can adapt to clients' changing circumstances.
- EY considers that there is merit in detailed consideration of funding model options as part of a review of the HCSS sector. The review could lead to greater national consistency, and allow the HCSS sector to play a greater role in New Zealand's health system by improving client experience and outcomes at a reduced cost.

Coordinated commissioning: contracting

- The last area of harmonisation that would support HCSS sector sustainability is a single national contracting framework that the three funders are party to.
- As an starting point EY considers that this would be best completed between DHBs and HCSS providers.
- The benefits to clients and the system from adopting such an approach include:
  - National consistency
  - Annual price adjustments
  - A national forum in which strategic issues can be resolved in a planned and structured way across the sector
  - The potential to resolve difficulties of the pay rates and practices of support workers who move across DHB boundaries
  - Aids a national approach to workforce development
  - Reduces transaction costs (especially for national providers and funders)
  - Supports sector-wide quality improvement and innovation
- As an example of a national contracting framework benefiting the whole system, the HCHA cite the example of ACC's single contracting framework for HCSS. The advantages of the integrated HCSS contract that was instituted several years ago include[15]:
  - Increased client satisfaction
  - Greater consistency in service delivery supported by a common quality framework
  - Improved engagement and relationship between ACC and providers
  - Collaborative working to resolve issues
  - Better qualified providers and workforce training.

Section 4: Demonstrating the strategic opportunity for the HCSS sector

Overview: The strategic opportunity

- Three case studies are used to compare actual patient journeys under the current model of care, to a hypothetical future journey. The assumed savings are generated by:
  - Avoidance of acute hospitalisations
  - Reductions in acute care related services
  - Reduction in specialist appointments
  - Improved chronic disease management in the community.
- The case studies demonstrate gains in all Triple Aim dimensions: experience, outcomes and cost.
- To better understand the potential cost savings that HCSS could deliver to the wider health system, further analysis is required to understand and measure the impact of HCSS on health outcomes and the influence of different service and funding models.
- We find that there is a potential role for technology in the HCSS sector, as a means of keeping people well in their own homes. The uptake of new technology and digital health care could support a more coordinated model that HCSS providers are well placed to support. The role of technology will become increasingly important to support people to get well, stay well and live well in their homes.
- Successful implementation of new models will require increased trust and confidence, and new relationships within multi-disciplinary teams. Clarity will be required over HCSS':
  - Intersection with primary care
  - Relationship with DHB specialist services in the community
  - Relationship with DHB community services, including allied health and district nursing.
- It will also require clarity over care pathways and new responses from HCSS staff.

A new model of care with HCSS at the core would deliver financial gains across the system

There are financial gains across the system

- There is a financial impact in either supporting people to live in their own homes and communities for longer.
- To better understand this impact, we describe and analyse three patients and their journeys. We compare these experiences with a hypothetical alternative journey within a more patient-centred and coordinated model of care.
- In the alternative journey, we consider the impact had patient-centred and coordinated HCSS been in place.
- The three case studies present actual patient experiences using data from Nelson Marlborough DHB in 2015/16*. We introduce:
  - Richard, a 80 year old non-Māori male who required care costing $75,293 over the year
  - Kohe, a 65 year old Maori female with CVD and diabetes who required care costing $35,569 over the year
  - Margaret, a 74 year old non-Maori female with CVD and diabetes who required care costing $25,639 over the year.
- We then explore alternative experiences based on a patient-centred and coordinated HCSS service provision.
- Following the three patient journeys, we consider the opportunity that technology presents to provide increased activation for people to manage their own health and to support more efficient models of care.

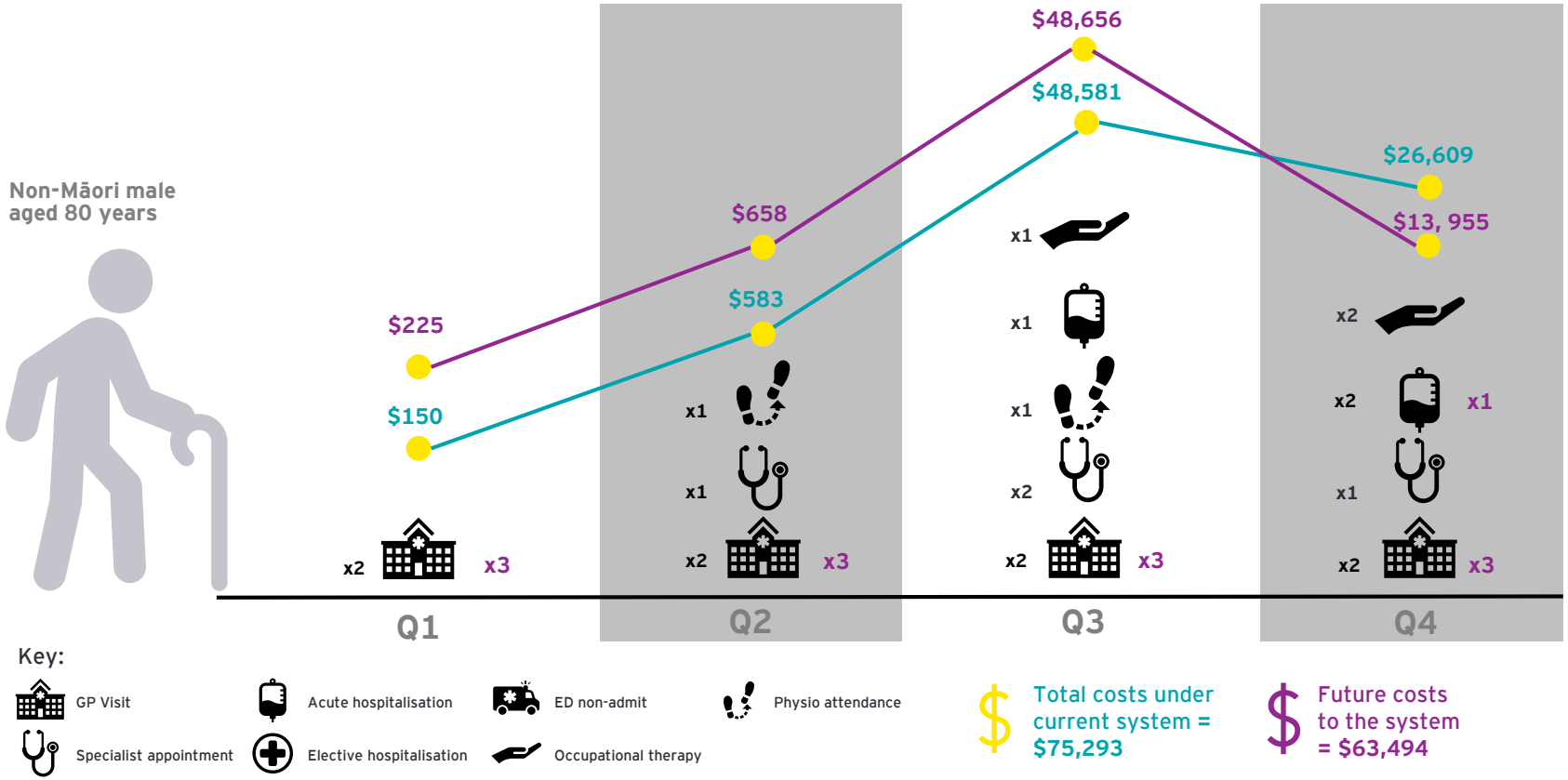
*Caveats and assumptions are presented in appendix 12.

Richard

Richard is an 80 year old non-Māori male. Over FY15/16 Richard had consistent visits to his GP, three acute admissions, five allied health interventions, and four specialist assessments at a total cost of $71,393.

For the purpose of this hypothetical future journey we assume an increase in HCSS and improved integration of health services by HCSS - and especially the coordination with DHB community care (allied health services), general practice and district nursing. We assume that through an uplift in general practice intervention (reflected as either actual visit or coordination between the district nurse or HCSS) then a potential drop in one acute hospitalisation may be realised (assumption made on an ability to decrease severity of health need and consequent acute management).

GP uplift to 3 visits / quarter and an avoidance of acute hospitalisation in Q4 would realise savings of: $12,730

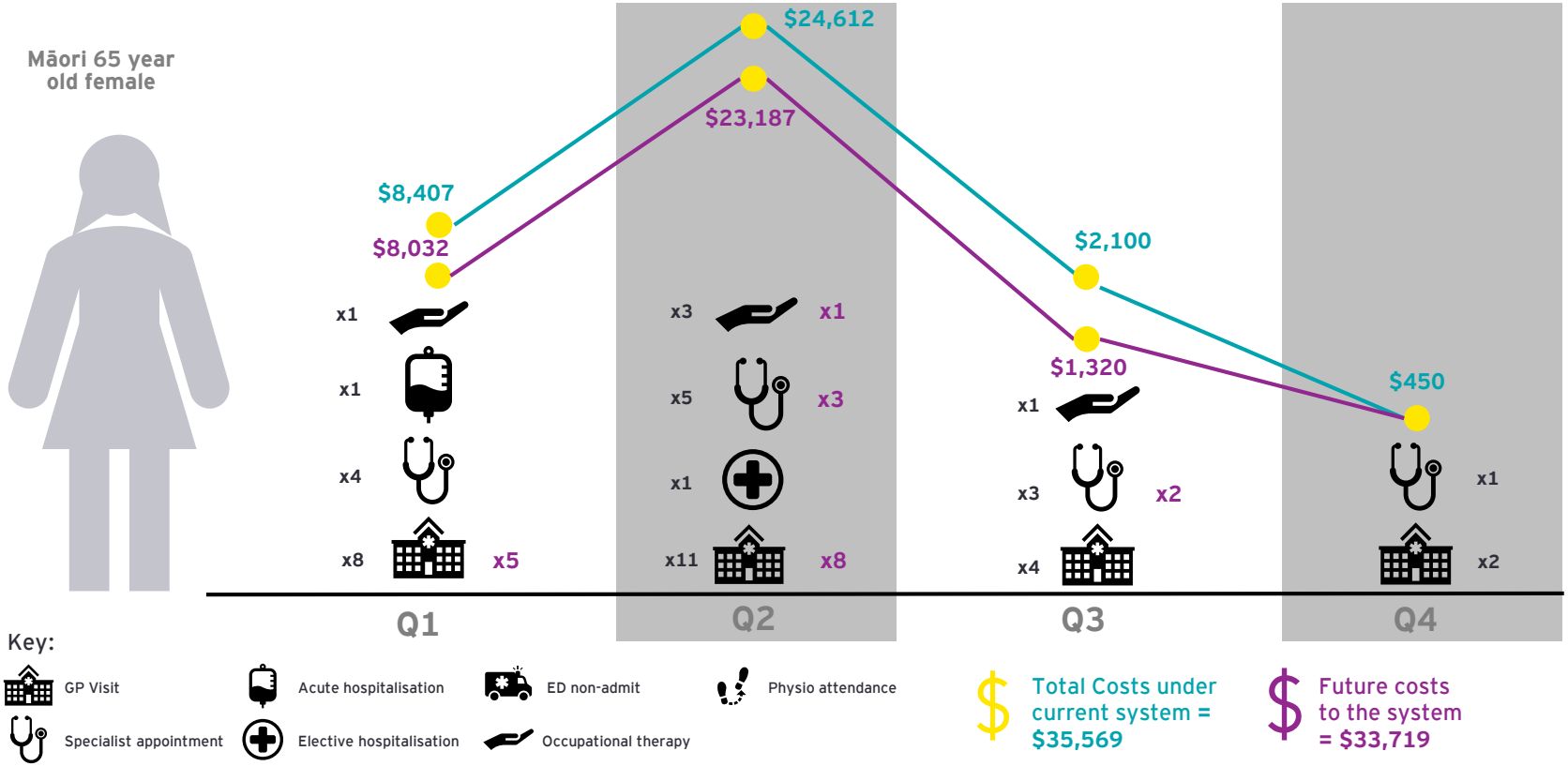


Kohe

Kohe is a 65 year old Māori female with cardiovascular disease and diabetes. Her journey through the health system over the last year identifies one acute and one elective admission in addition to numerous allied health and support service provision. Here we assume that the elective procedure could not be avoided and that changes to Kohe's journey could be based on improved post-elective procedure recovery and rehabilitation.

The future state journey assumes an increase in HCSS (inclusive of nursing and occupational therapy), thereby avoiding the need for acute allied health services and allowing the patient to receive care closer to home. Improved communication within an integrated system will potentially reduce the requirement for general practice presentations, with care needs being managed through HCSS (nursing and allied care services) and referring to the GP or acute services as required.

Savings associated with reduction in acute care related services within this scenario and based on the assumptions total $1,850.

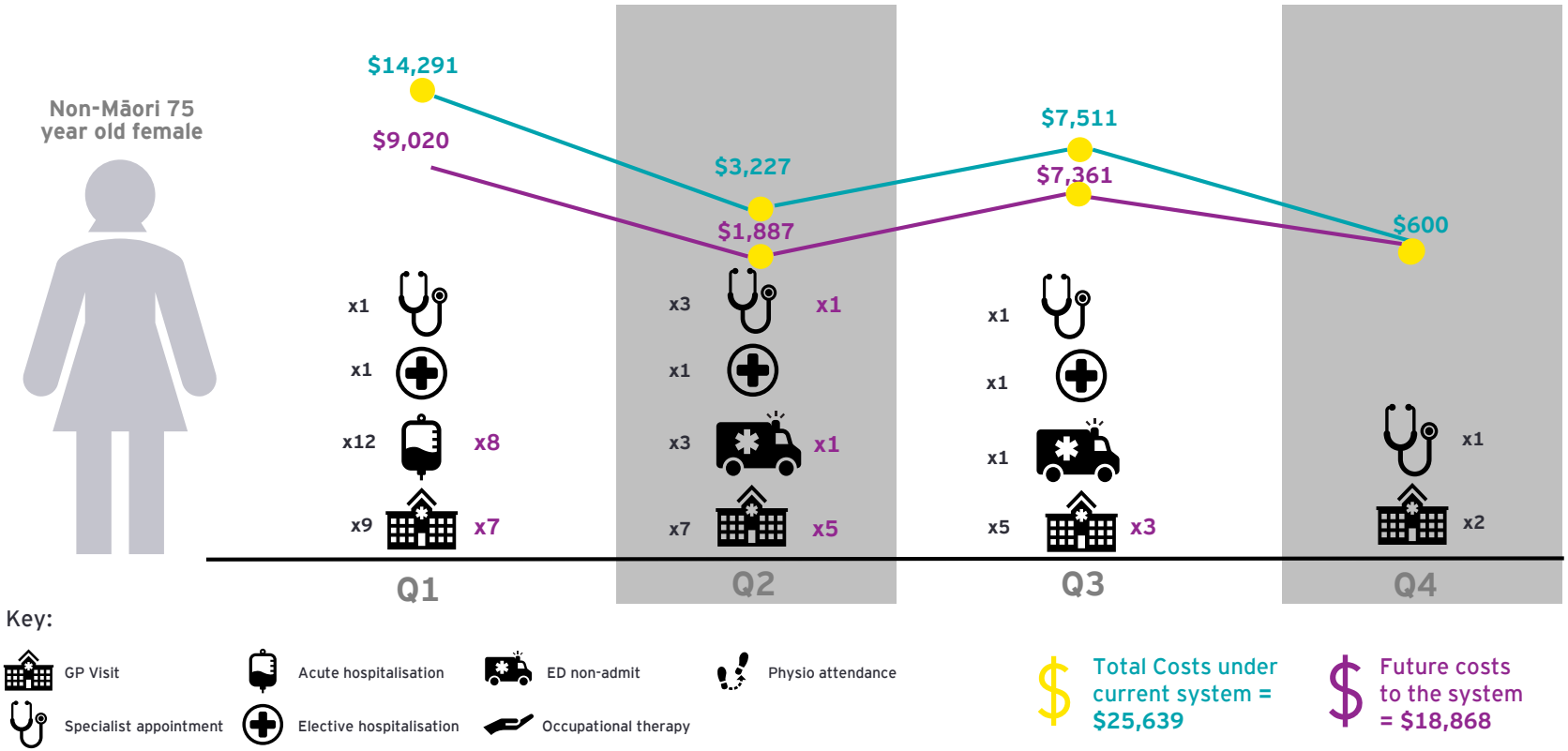


Margaret

Margaret is a 74 year old non-Māori female with multiple short hospitalisations and ED visits. Her patient journey is similar to our current state case study where Ethel makes multiple visits to the hospital, repeats her medical history multiple times, and does not receive coordinated and integrated care. Additionally, Margaret has a single elective admission once a quarter.

In this future state patient journey we assume that the increase in the coordination and integration of health services may reduce the frequency of her hospitalisations. Improved HCSS care could include more regular RN and allied health support, overnight care services in addition to increased support in personal care and domestic activities (these services may be essential post elective admission to ensure safety and rehabilitation). An increase in HCSS from RN, wound care specialist and allied health, as well as improved communication with Margaret's GP may lead to a reduction in acute service utilisation.

Reduction in acute hospitalisations, specialist appointments, GP visits (as appropriate) would realise savings of: $6,771



What we can learn from Richard, Kohe and Margaret journeys

The benefits are wider ranging than just financial

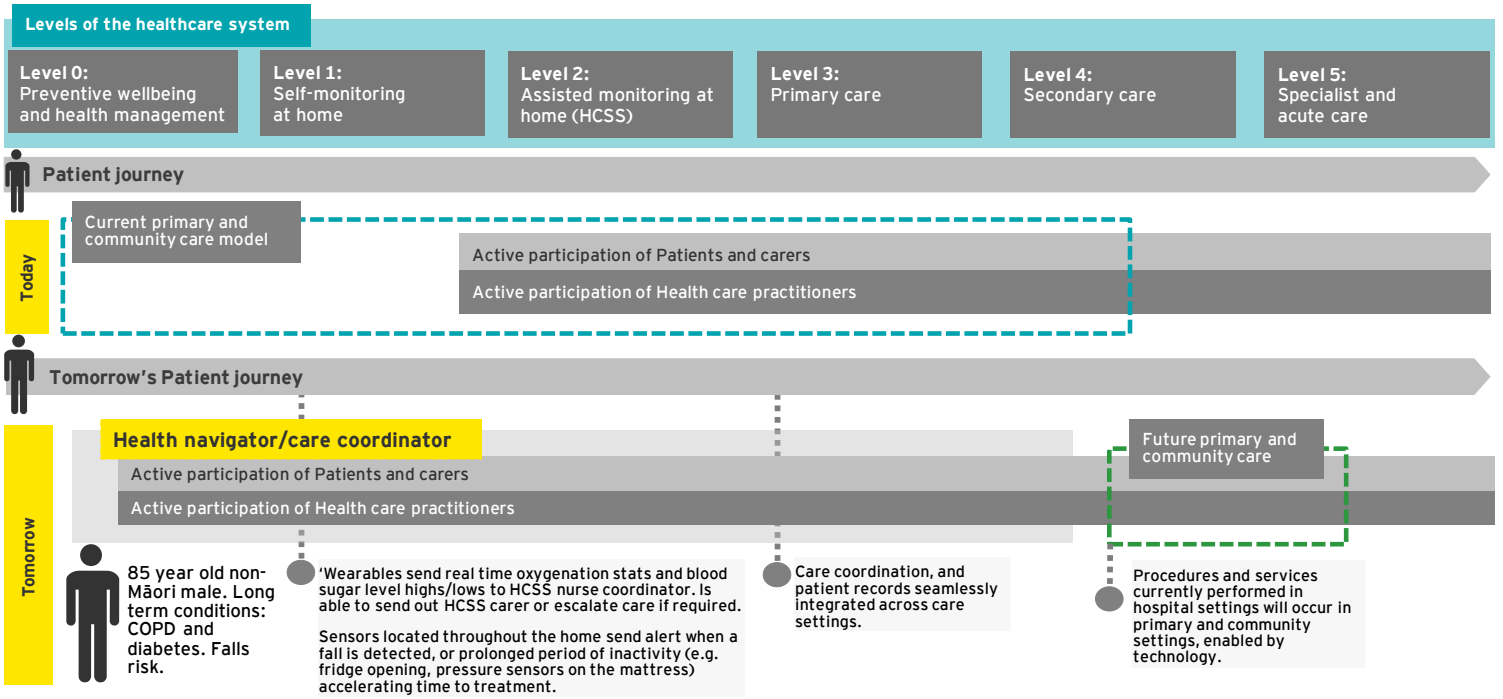
- **These three case studies** demonstrate the potential to not only find fiscal efficiency within the system, but also opportunities to enhance the patient experience.
- We find that in the alternative journeys:
  - There is a change in GP visits – system navigation via the HCSS care coordinator
  - There is increased communication and coordination across professionals and organisations - DHB allied health services, general practice, and district nursing – through the HCSS care coordinator
  - There is a greater breadth of service provision from HCSS providers
  - All three individuals received proactive planned care, and were not reliant upon reactive episodic care.
- Whilst the experience of Richard, Kohe and Margaret will not be representative of every individual's experience with HCSS, these cases demonstrate the improved care and potential financial gains.
- We suggest that the future of HCSS will see a growth in service offerings due to:
  - Enabling technology
  - Improved client engagement
  - Improved understanding for clients to manage their own condition.

More work is required to understand the potential financial improvements in sufficient detail

- To better understand the potential cost savings that HCSS could elicit, a more comprehensive approach is required to reach a reliable estimate.
- This approach would involve rigorous analytics and form part of a wider HCSS sector review.
- The proposed approach would include:
  - Qualitative research amongst professionals
  - Case review
  - Consumer engagement
  - Costing of the proposed pathway and calculation of the difference in cost compared to what actually occurred.
- From the above analysis, the findings could be extrapolated based on the demographic structure of populations around New Zealand to estimate potential cost savings within particular communities or across DHBs.

How can technology support patient-centred and coordinated care?

The image below provides a view of the current patient journey, and an illustrative future journey which highlights the role for technology in supporting increased patient / client participation in their own care, at all levels of the health system. On the following two pages we set out the potential role for technology in the HCSS sector, as a means of keeping people well in their own home, in response to greater patient expectations for involvement and participation in their own health and wellbeing, and as an opportunity for HCSS to support reducing cost in the system through avoidable ED presentations.



Objective
Reduce demand for health care services.

Objective
Change the care model to drive patient activation 'bricks and mortar' being the focus for the population on and a restorative care model and move away from.

Objective
Ensure an optimal patient journey through the system.

Key issue
Current model of care is fragmented, lacks a standardised approach and is fiscally unsustainable. Patients have limited choice and have to fit in with the service rather than the service fitting with them.

Key issue
Emergency Departments frequently see patients who could be better served within primary care. Acute beds are often inappropriately used for elderly care. LoS is long due to flow and data in the system being siloed, creating financial unsustainability.

Technology plays a number of roles for advancing HCSS

Technology in the home

- HCSS providers can offer continuous supervision and allow clinicians to provide a quick diagnosis in the home.[36.]
- Artificial intelligence (AI) technology is being used to detect changes in activity and behaviour patterns for early detection of health issues.
- Voice-based assistants are using AI to enable medication adherence and care coordination for the elderly.[37.]
- Socially assistive robots (SARs) are being used for day-to-day activities, as part of a safety system, cognitive assistance and entertainment.[36] The SARs can be part of a complex system integrated with sensors in and around the home as well as on the body. Sensors measure blood pressure, weight, heart rate and oxygenation of blood. Sensors can tell if a refrigerator door has not been opened or has remained open for a protracted time. Motion and activity sensors can detect if person falls. A skype-like interface allows caregivers and relatives to 'virtually visit' an elderly person.

Technology also plays a role in participatory health

- The HCSS sector wants to enhance the knowledge, skills and confidence of a client to enable them to actively manage their own health or health care. This is also known as participatory health.
- When combined with rapid advances in technology, 'patient activation' means clients are better equipped to actively manage their health and wellbeing by drawing upon digital technologies.[38.]
- HCSS providers are well placed to facilitate and promote participatory health given the volume of contact hours and nature of their relationships with patients.
- Advances in technology mean individuals would be able to access care regardless of geography through tele-connected services.
- In the context of HCSS providers, future care and support technologies will enable older adults to:
  - Have autonomy and independence
  - Manage their health and wellness needs
  - Have improved opportunities for social connectedness, personal growth, and overall high quality of life.[39]

Technology and workforce

- Technology will continue to be a key enabler of the HCSS workforce to manage increasingly complex clinical cases, and in particular to support:
  - Point of care testing
  - Virtual care
  - Monitoring.
- Strengthened care coordination will be achieved through sharing of the electronic health record and care plan, looking to a future of a 'hospital without walls'.
- Specific examples of technology supporting participatory health are presented in Appendix 13.

What is the opportunity for a greater contribution from HCSS?

Richard, Kohe and Margaret's experience illustrated an opportunity for better patient-centred and coordinated care, with an increase role for HCSS.

- Their experiences particularly highlighted the opportunity to reduce acute hospitalisations and aged residential care (ARC) utilisation for elderly.

We need to better quantify the impact that HCSS could have across New Zealand.

- We have compared Auckland DHB, Waitemata DHB and national averages for acute hospitalisations and ARC utilisation to see where there may be an opportunity to increase HCSS interventions to support people to live at home longer.
- Use of Auckland and Waitemata DHBs' data offers an excellent natural opportunity for a comparative study, as they currently operate under the same planning & funding management structure, but each uses a different funding model.

There are a number of key differences between the Auckland and Waitemata HCSS funding models.

- Auckland DHB have consolidated their HCSS service provision, follow the casemix methodology with bulk funding, and there are no NASC wait times for accessing HCSS services.
- This contrasts with the Waitemata DHB approach, which contracts for HCSS under a FFS model, which may impact on wait times for a HCSS response.

To test whether timely HCSS interventions can help to limit acute hospitalisations and ARC utilisation, EY undertook three distinct pieces of analysis.

1 – Comparing acute hospitalisation rates
2 – Using MAPLe scores as a predictor of admittance to ARC facilities
3 – Using CHESS scores to understand the impact of HCSS.

These are covered in greater detail in Appendix 14.

What further analysis is needed?

1. Measure the impact of HCSS on health outcomes

- Because the model of HCSS is about delivery of care in people's homes, it supports a preventative approach to health care. The users of HCSS tend to have higher health needs, and therefore are more likely to require ongoing support to prevent poor health outcomes.
- To measure the impact of HCSS on health outcomes, we must pose a number of questions:
  - Do HCSS users have fewer acute health events than non-HCSS users?
  - Do HCSS users have lower rates of readmission to hospital than non-HCSS users?
  - Do HCSS users have higher utilisation of primary care or other preventative / early intervention services (e.g. allied health) than non-HCSS users?
- In answering these questions, we could better understand the degree to which HCSS reduces costs in the health system.

Recommended approach

- Comparing the service profile of HCSS users and non-users will require suitably matched control groups.
- Service utilisation patterns should also be looked at over a time series when matching groups. This will determine whether service utilisation changed for HCSS users after they began receiving services, or if it follows a similar change over time to that of non-users.

2. Understand the influence of different service and funding models

- DHBs differ in their funding and service models for HCSS, and the effect of this on people's health outcomes is untested.
- DHBs differ in their population composition and service models for other health services. For this reason, it can be difficult to measure the impact of a particular funding model, or the service model for a single service, on overall system efficiency or health outcomes.
- The kinds of questions that could be tested in this approach include:
  - Do DHBs with bulk funding models for HCSS have lower overall health service utilisation costs for their HCSS population compared to other DHBs?
  - Do DHBs with casemix service models have reduced secondary care utilisation in HCSS clients compared to other DHBs?

Recommended approach

- Measuring the influence of funding and service models will require matching DHBs on as many factors as possible external to HCSS. Two or more DHBs would need to be selected that could reasonably be compared on the basis of factors that may affect uptake or impact of HCSS.
- The analysis should look at a range of factors to give a view of efficiency and effectiveness, including productivity metrics.

Section 5: Recommendations and next steps

Recommendations

HCSS providers can have a greater impact on health outcomes and financial sustainability for the health system

- Through person-centered and coordinated care, and with significant investment, HCSS providers are well positioned to contribute to the health and wellbeing of New Zealanders while potentially delivering significant savings across the health system.

Recommendations and next steps

- As an immediate next step, HCHA should engage with the HCHA should immediately engage with the Chair of the New Zealand Health and Disability System Review Panel to indicate HCHA's support for the direction set out in the Interim Report, and willingness to work on solutions.
- We suggest a detailed analysis measuring the impact of HCSS on:
  - Older people's experiences of clinical care and support services
  - Population health outcomes
  - The cost-effectiveness of health care delivery
- Depending on the outcomes of the analysis, we suggest preparation of a business case for further investment in HCSS.
- We recommend that these steps are considered as part of an HCSS review to be undertaken as a partnership with funders.

The next steps and recommendations should be considered as part of a comprehensive HCSS sector review to:

1. Recognise the full extent of the role that HCSS could play in home care for people with complex clinical needs and multiple long-term conditions, and the benefit this has on moderating hospital and residential care demand and improving financial sustainability

- Appropriate monitoring and evaluation mechanisms must be in place that recognise and measure system-wide benefits and population health outcomes, in addition to hospital activity.

2. Better understand how equity of access and unwarranted variation can be addressed, aligned with the findings of the ARC Funding Model Review

- The Ministry of Health should work with DHBs to reduce national variation in the services available to clients and the way they are delivered.
- This should include consideration of the opportunities afforded by emerging technology and future models of care.

3. Align national reimbursement, risk-sharing and cost-sharing arrangements to leverage the full extent of benefits that HCSS can offer

- A consistent model should be used by the Ministry and the 20 DHBs (and ideally ACC) to fund HCSS providers to contribute to reduction in the unwarranted variation in the sector.

Recommendations

4. Invest in building partnerships between key system stakeholders, and building horizontal leadership to improve the influence of HCSS across the health and social care sectors

- The system transformation required to bring New Zealand's health care system to a new way of working can only occur when the relationships within it are themselves transformed.
- This would need to take an active approach and be supported by DHBs, PHOs and include peer-to-peer learning.

5. Establish a clear approach to leveraging opportunities offered by emerging technology

- Emerging technology provides opportunities to transform the delivery of home and community based care while improving outcomes for patients and delivering system efficiencies.
- Stakeholders across the sector must determine how they plan to adopt and integrate these technologies, paying attention to the workforce implications / upskilling required.

Appendices

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Appendix 1: International context

Trends in health care internationally:

- Growing burden of chronic diseases and an ageing population
  - The impact is increased disease prevalence, health care costs and support costs, and the need for end of life care.
- Technology-driven health care
  - Digital technology is allowing patients to access 'virtual' advice and care in new, more convenient and lower cost settings
  - At a system level, key drivers of digital uptake include the capture of analysis and understanding of data, tools of connection (e.g. medical-grade wearables and sensors) and connectivity across settings, such as the e-home.
- Patient activation and participatory health
  - A growing proportion of people are drawing upon digital technologies to take greater self-responsibility for their health and wellbeing, as well as having a greater voice in decision-making about their care.
- Shift to value-based care
  - Transaction-based funding models are being replaced by incentives for improved quality and outcomes.

Trends in the English NHS:

- In the English NHS, Integrated Care Services (ICS) are a prominent feature of the NHS' strategic direction.[40] Clinical Commissioning Groups (CCGs) working closely with Local Authorities (LAs) to develop specific, tailored, individual care plans for selected groups of individuals
- There are a range of variants of this approach, but each shares common features[12]:
  - Person-centric not generic
  - Pre-emptive not reactive
  - Holistic not fragmented
  - Proportionate not universal

Appendix 2: Factors preventing HCSS from performing a central role in the New Zealand health system

- From the perspective of the HCHA, there are a range of factors that prevent HCSS from performing a central function in New Zealand's health and disability system:
  - Inequity of access in the range of care and support offered
  - Inconsistent needs assessments across the system, including significant delays, hand-offs and inflexibility to adapt to individual circumstances
  - Inconsistent approach to re-assessments
  - Increasing demands on providers for appropriately trained staff to provide a greater mix of services, including clinical treatments
  - Short-term contract savings by funders at the expense of long-term benefits, and provider and system sustainability.
  - Financial pressure on the sector as an unintended consequence of the union negotiated settlements including In-Between Travel Time (IBT) and Pay Equity
  - An unregulated workforce with providers showing varying appetites to share risk with the accountable funders.

Appendix 3: Varying approaches to funding HCSS for older people: a strategic decision for DHBs

- The variation in funding (and pricing) models reflects strategic decisions made by DHBs. These arrangements impact HCSS providers working under the two funding models (fee-for-service; bulk funding) in different ways.
- Under a FFS model the service provider is paid for the number of hours they deliver – which are specified in the NASC assessment.
- Under a bulk funding model, a service provider is allocated its funding annually and this funding arrangement typically works best under a casemix arrangement where the provider has more control over how the services are delivered. The HCHA considers it is most suitable where volumes and case mix are predictable, and the level and standards of service are well known and understood. The HCHA argues this model works best when it is supported by a national funding framework to improve risk-sharing between funder and provider.[15].
- Parsons and colleagues[5] acknowledge the introduction of the casemix funding methodology was to improve the quality of services delivered to clients within their home, not to specifically provide flexibility and responsiveness. It is generally accepted that adopting such funding models better incentivises providers to manage clients proactively and in line with the principles of restorative home support.
- The following charts highlight that as DHB home based support service (HBSS) spending has increased, ARC bed days per capita of the 75+ population have decreased (Figure 7).
- This does not necessarily imply that greater HBSS spending directly contributes to fewer bed days (as it is on a per 75+ capita basis), but it could be a significant causative factor. Note that for 2016/17, the In-Between Travel settlement (payments to carers for travel between clients) affected the HBSS spend.

Figure 7: Comparison of ARC bed days to HBSS spend, per capita of the 75 and over population. Note: bed days exclude psychogeriatric and Ministry of Health-funded bed days, and include maximum contributor bed days.

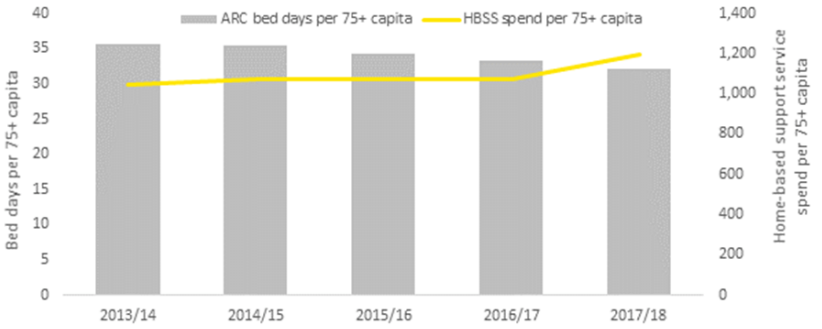


Figure 8: HCSS spend per capita by DHB compared to ARC bed days for those aged 75 years and older

Appendix 4: Members of the Home Care Health Association

HCSS Providers	Coverage	Services	Funding Sources
Access Community Health	National	Personal care, Clinical services(physio/OT), Nursing services, Household management and assistance, Palliative care, Restorative and rehab support, Carer relief, Nursing services and home based rehab, DHB Home based acute services	MOH/DHB/ACC
Counties Manukau Homecare Trust	Manukau City and the greater Papakura and Franklin Districts.	Personal care, Household management and assistance and Medication Supervision	MOH/DHB/ACC
Disabilities Resource Centre Trust Whakatane	Bay of Plenty (Eastern and Western)	Personal care and Household management and assistance	MOH/DHB/ACC
New Zealand Health Group – includes Healthcare NZ and Geneva Healthcare*	National	Personal care and Household management and assistance, Disability support (intellectual and physical disability homes), Palliative care, Chronic long-term conditions, IV therapy, Wound care, Medication management, Catheter care, Post-operation recovery, Community mental health, Maternity/child care, Overnight support	MOH/DHB/ACC
Home Support North Charitable Trust	Northland	Domestic assistance, Personal care, Child care	MOH/DHB/ACC
Life Plus	Auckland DHB and surrounding area	Home based rehabilitation, Serious injury care	MOH/DHB/ACC
Lifewise Homecare Services (Methodist Mission)	Auckland DHB	Personal care and Household management and assistance, Medication management, Overnight support	MOH/DHB
Maiaorere Disability Support Services (Provider)	Northland	Individual living options, Kuia/Komatua programs, Home support, Residential services, Community services, Clinical services.	MOH/DHB/ACC
Nurse Maude Association	Canterbury DHB, Nelson Marlborough, Capital and Coast, Hutt Valley	Community and Specialist Nursing, Home support, Palliative care, Aged care, Continence care,	MOH/DHB/ACC
Pacific Homecare	Counties Manukau	Home support, Complex care, Disability support and rehabilitation, Intellectual disability	MOH/DHB/ACC
Presbyterian Support East Coast	Hawkes Bay	Personal care and household management and assistance. Restorative home support for older people, post discharge restorative support.	MOH/DHB

Appendix 4: Members of the Home Care Health Association (*cont'd*)

HCSS Providers	Coverage	Services	Funding Sources
Presbyterian Support Northern	Waitemata, Auckland, Counties, Waikato and Coromandel, Bay of Plenty, and Lakes DHBs	Personal care and household management and assistance, Restorative home support for older people, Post discharge restorative support, Collaborative home and community support for disabled persons, complex care, assessment and service coordination, long-term chronic conditions.	MOH/DHB/ACC
Presbyterian Support South Canterbury	South Canterbury	Personal care and household management and assistance. Also provide residential rest home care, hospital level care, specialist dementia care, respite care and community-based care and support as well as day activity programmes.	MOH/DHB/ACC
Renaissance	Warkworth to Waiuku	Personal care and household management and assistance, Supported living.	MOH/DHB/ACC
Royal District Nursing Service New Zealand	Auckland; Otago and Southland	Personal care and personal assistance, Registered health professional assessment, Care planning.	MOH/DHB/ACC
Te Korowai Hauora o Hauraki	Waikato	Personal and Household management and assistance, Medication Supervision, Disability support and Community mental health	MOH/DHB/ACC
Te Puna Ora o Mataatua Charitable Trust	Whakatane & Eastern Bay of Plenty	Personal/Clinical care and Household management and assistance, Practical care, Social housing, Whānau ora,	MOH/DHB/ACC
VisionWest Home Healthcare	Waitemata, Waikato, Bay of Plenty	Personal care and Household management and assistance, Supported living, Mobility exercises, Home -based respite, ACC: Non-serious and serious injury care, Child care, Private services	MOH/DHB/ACC + Individualised Funding (IF)
Waiheke Health Trust	Waiheke Island	Home based support, Occupational therapy, Physiotherapy, Collaborative home and community support for disabled persons, Public health nursing, Hospice nursing, Health promotions, Immunisations, Stoma, speech and diabetes clinics, Community mental health services	MOH/DHB/ACC
Whaiora Homecare Services Inc	Counties Manukau	Home and community-based support	MOH/DHB

Notes:

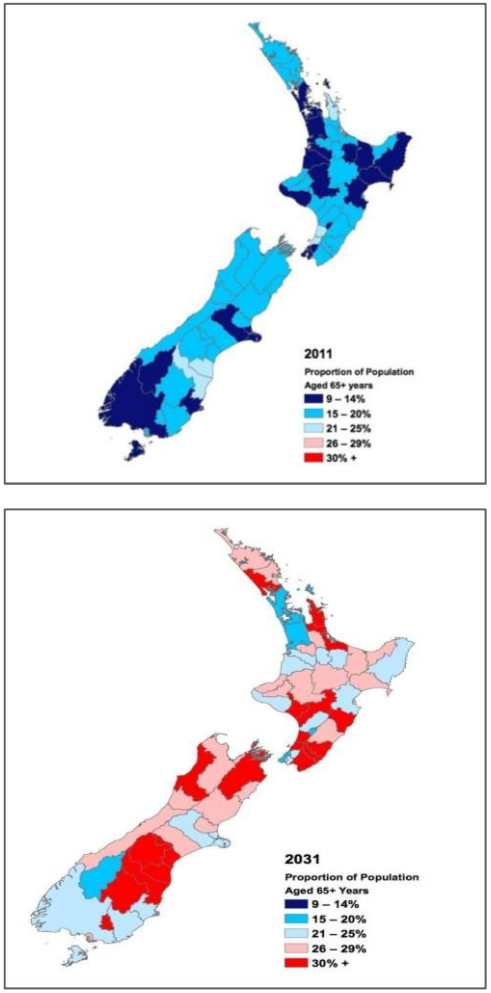
Ngati Whatua o Orakei Health Services Provider – Community minded GP providing home support services based in Auckland. No other information is available on this

* Geneva Healthcare is included in New Zealand Health Group as it has been recently acquired by the latter. Both organisations are individual members of the HCHA.

Appendix 5: Demand pressures from the ageing population

- In line with global trends, New Zealand's population is ageing. It is predicted that the number of people aged 65 and over will double between 2011 and 2036, and by the late 2030s, people aged 65 and over will be almost one-quarter of New Zealand's population.[2,16]
- However, the ageing population will not be distributed evenly across New Zealand. Currently, the distribution of individuals aged 65 years and over ranges from just over 20% in areas of the South Island to 10% in Auckland.
- This is a stark contrast to projected 2031 estimates where many localities will have over 30% of their population aged 65 years and over.[16]
- In terms of system impacts, there were approximately 400,000 acute hospitalisations in FY18 for those aged 65 years and over. By FY38 it is expected that this will grow to at least circa 770,000 acute hospitalisations.[17]
- For those aged over 85 years of age, it is expected that the approximately 95,000 acute hospitalisations in FY18 will grow to at least circa 230,000 acute hospitalisations by FY38.[17]
- There will be significant pockets of the country where more than 30% of the population is over 65 years old.[10] When we overlay this with the location and concentration of current providers of HCSS providers, there is a risk of certain populations having limited access and / or being underserved if new models of care, or changes in technology are not better utilised to support the delivery of HCSS.

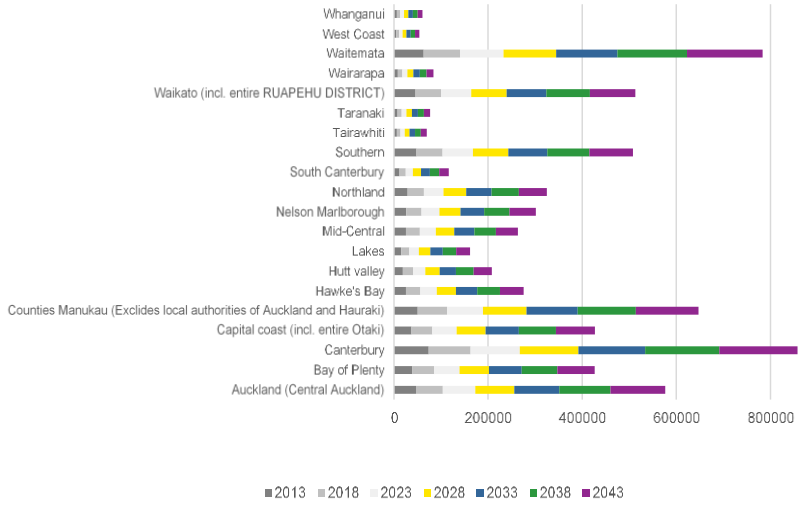
Figure 9: Proportion of population aged 65 years and over across New Zealand[10]



Appendix 5: Demand pressures from the ageing population (*cont'd*)

- The cumulative annual growth rate of the population aged 65 years and over varies across DHBs. Between 2013 and 2043, Waitemata and Counties Manukau DHB are projected to experience a 21% growth in the population aged 65 years and over. Nationally, the cumulative annual growth rate between 2018 and 2043 is expected to be 11%.[18]

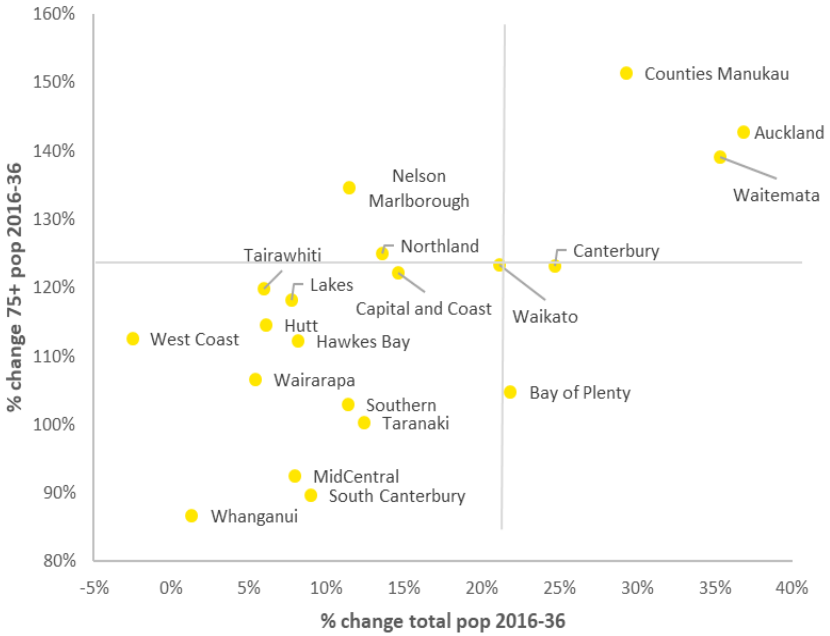
Figure 10: DHB 65+ population projections



Source: NZ Stats 2013, EY Analysis

- The over-65 year old population is becoming increasingly diverse, with growth projected across all major ethnic group.
- While, NZ Europeans will remain the numerical majority, the fastest growth in the population aged 65+ years is projected to occur in the Asian ethnic group.1
- From an equity perspective, currently 17% of Māori aged 80-90 years require personal care and household management daily, in contrast to non-Māori aged 85 years at 15%.[10, 29]
- On a weekly basis it is estimated that 50% of both these groups will require help.
- However, 2026 projections estimate a 200% increase in the need for home-based care by Māori, and 75% for non- Māori - although Māori are less likely to access housework assistance than non- Māori.[29]

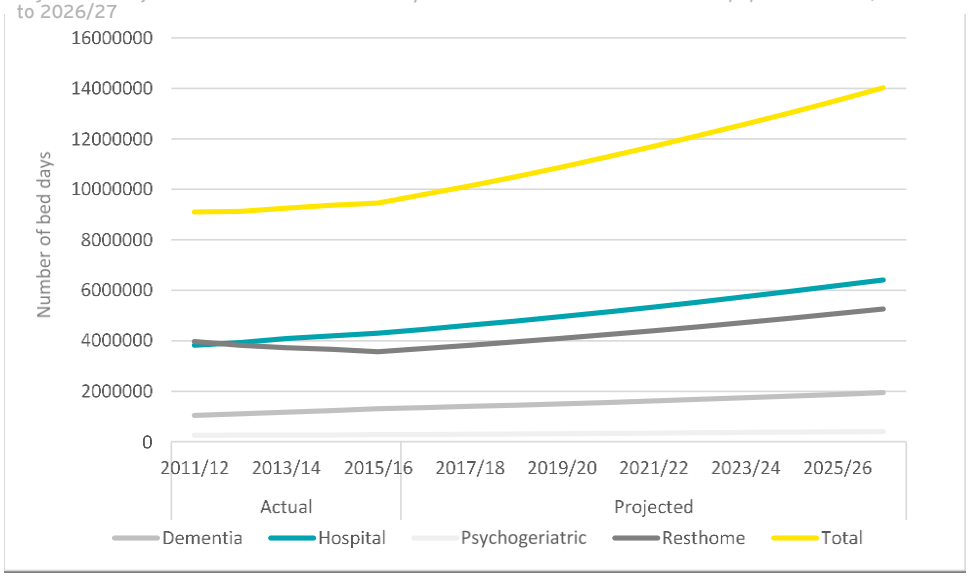
Figure 11: Population growth in individuals aged 75 years and over by DHB



Appendix 5: Demand pressures from the ageing population (*cont'd*)

- Chronic conditions are the leading cause of preventable morbidity, mortality and unequal health outcomes, and disproportionately affect the older population.[10, 17]
- Adults aged 65 and over sustain 40% of the burden of disease in New Zealand. For adults aged 65-74 years, cancers and vascular disorders remain the leading causes of health loss.[10]
- In New Zealand, for adults aged 75 years and over, cancers and vascular disorders remain while neurological conditions become a leading cause of health loss.
- As a larger proportion of the population reach this older age, the burden of these conditions is expected to significantly increase and will impact the type of care needed.[17]
- By 2032, 22% of New Zealanders will be aged 65 years and above.[18]

Figure 12: Projections for DHB funded bed days across New Zealand for the older population 2011/12 to 2026/27



Appendix 6: Standardised assessments for older people

Assessment tools and processes

- All assessments by the NASC or the gerontology service use a standardised nationwide assessment tool - interRAI.
- interRAI is a suite of clinical assessments that focus on a person's function. They are designed to identify opportunities to improve a person's health and risks that may limit a person's heath. These form the basis of a care plan.[41.]
- Assessment information is automatically stored in a data warehouse. This provides population data for future service development, planning and research.
- interRAI provides decision-support and guidance for heath professionals. It does not specify the range, quantity or combination of HCSS to be allocated.

NASCs for older people considers a range of services

- Support services including:
  - Assistance with showering
  - Assistance with dressing
  - Assistance with eating and meals
  - Household management
  - Day programmes
- Clinical services including:
  - Continence services
  - Medication administration
  - Access to equipment
  - Hearing and vision assessment

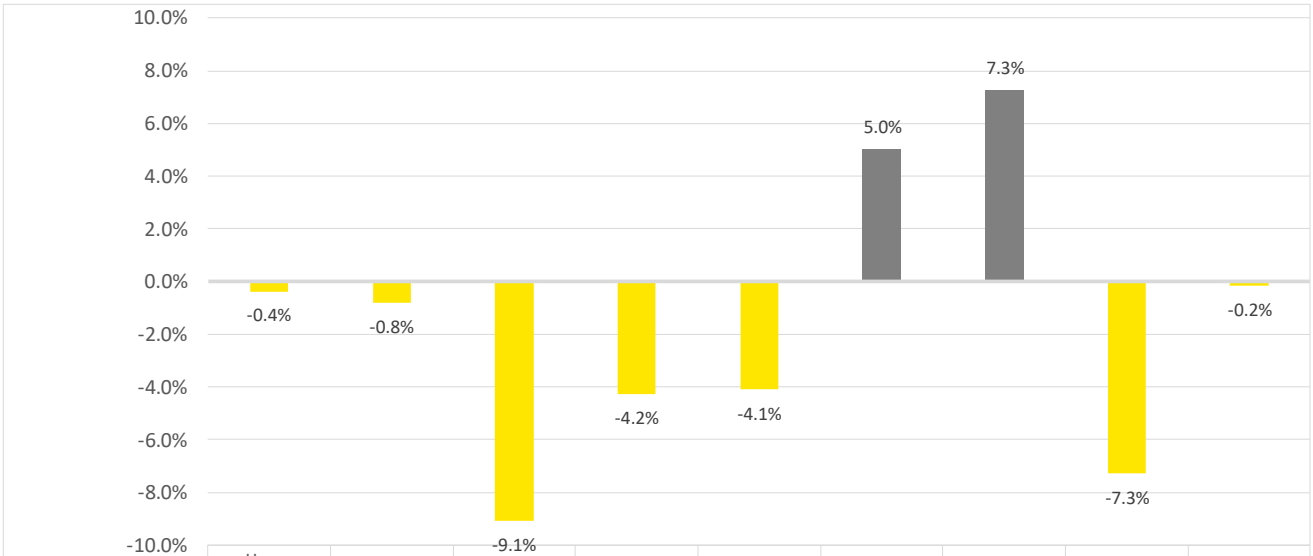
Outcomes of the NASC standardised assessment tool

- Once the assessment has identified a person's support needs, as well as those of carers, family, and immediate community, a plan is developed to assist the individual to remain at home, providing that is the best option.
- A restorative focus aims to maximise independence and support family and friends caring for the elderly.
- The NASC stays in contact with the individual and reassessment can take place.
- The NASC sends to the selected HCSS provider a requisition for services along with an outline of the person's needs. The HCSS provider will then provide a registered nurse / occupational therapist / case manager to review the patient and implement a package of care.
- If a client has complex care needs, the client is allocated an assessor.
- If a client has non-complex needs, the HCSS provider will allocate a case manager. If needs change and care becomes long-term or complex, the client is referred back to NASC for an assessor to review need for the complex pathway.
- NASC reassessment with the home and community setting is varied and can take up to 12-15 months.
- If staying at home becomes difficult and a geriatric assessment recommends long-term care in aged residential care, then the needs assessor provides information and supports decision-making.

Appendix 7: HCHA analysis of provider financial viability

- Analysis prepared by the HCHA of some of the largest HCSS providers' financial results to June 2018 shows an aggregate deficit of -$10,716m from combined revenues of $311,474m, or an average deficit of -3.3% [24].

Figure 13: Aggregate surplus/deficit across selected HCSS providers to June 2018



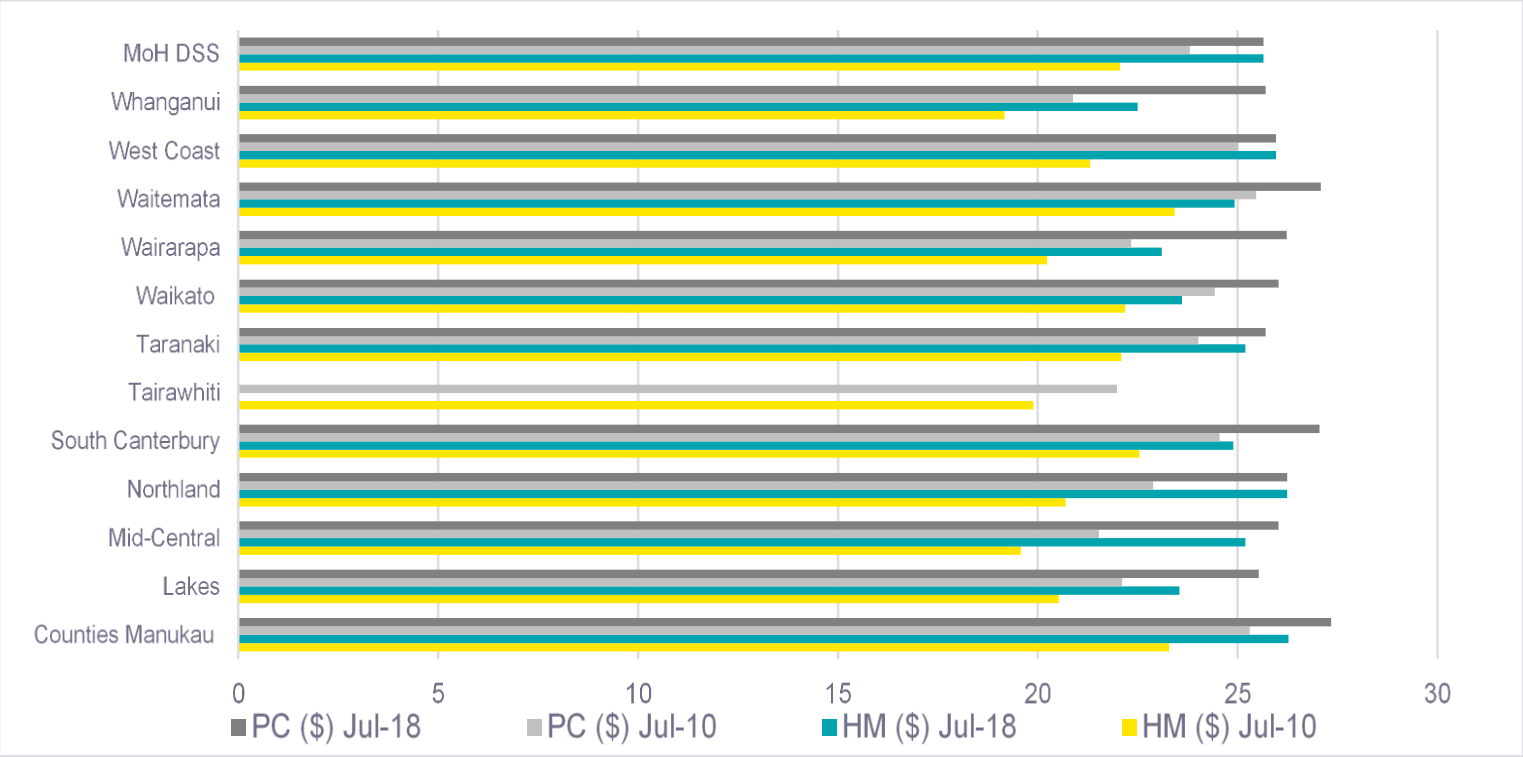
	Home Support North Charitable Trust	VisionWest Community Trust	Presbyterian Support Northern	Royal District Nursing Service NZ	Counties Manukau Homecare Trust	Pacific Island Homecare Services Trust	Disabilities Resource Centre Trust	Nurse Maude Association	Access Community Health
Surplus/Deficit (%)	-0.4%	-0.8%	-9.1%	-4.2%	-4.1%	5.0%	7.3%	-7.3%	-0.2%

- With the sector currently under financial pressure and running deficits, the additional demand for services (expected from increased prevalence of chronic conditions and an ageing population) will compound rather than cure the sector's financial position. We consider that this could be mitigated through a national review that leads to harmonising the funders' pricing methodologies and commissioning practices.

This analysis was prepared by the HCHA and has not been verified by EY. PSN /Nurse Maude and Vision West deliver a range of other social services that are shown in the results above. It excludes private limited liability companies (HealthcareNZ, Geneva, Health Vision, Lavender Blue); and excludes grants, donations & bequests

Appendix 8: varying FFS payment rates across funders

Figure 14: Hourly rates for FFS for different funders 2010 and 2018[24]



PC =Personal care; HM = Household management

Appendix 9: The negative impacts of payment for travel and pay equity

Non-cost related pressure	Description
Mileage rate	The Home and Community Support (Payment for Travel Between Clients) Act stipulates an annual review of the mileage rate for in-between travel. Currently travel costs have been fixed at 50 cents per kilometer since 2017. In comparison, ACC pay 62 cents per km, IRD 76 cents, and the AA advocate for a rate of 72 cents per km.
Minimum wage	In-between travel time is paid to workers at the minimum wage levels; all future increases in minimum wage are expected to be absorbed by providers.
Leave liability	Under the Pay Equity Settlement, alternative days and annual leave accruals have been 'underfunded' for providers
Banded travel	The current single banded model disadvantages workers who travel between 8 – 15kms for client visits, and those undertaking exceptional travel in rural areas
Paid rest breaks	Most HCSS providers maintain that paid rest breaks have not been fully factored into contracted prices
Coordinators	Providers are incurring additional back-office costs by recruiting additional coordinators to manage rostering issues created by Guaranteed Hours for staff.

Appendix 10 Desirable features of a sustainable pricing, contracting and funding model

As defined by the Director-General's Reference Group for In-Between Travel (2015) [25]

Criteria	Description
Services meet client needs	To be person-directed, the individual has the option to choose the services needed, within the limits of the type of service it is publicly acceptable to fund. The funder (or its agent) should offer advice on what will best meet the client's needs, and the client may choose to follow that advice or direct otherwise.
Flexible	The level and type of service should be able to change on a weekly basis to meet clients' evolving needs.
Minimum waste	Services that are not needed or valued should not be provided.
Budgetary control	The funder should be able to accurately budget what costs it will incur to provide services, and have the knowledge and ability to change service settings during the year to keep within its budget allocation.
Agreed prioritisation	Where service levels need to be changed to maintain budgetary control, the approach to prioritisation of service delivery should be agreed between funder and provider.
Viable business	Funding should enable the provider to operate a financially viable business.
Regularised workforce	Funding and service allocation processes should enable a regularised workforce.
Timeliness of service	Services should be provided with minimum delay.
Integration	The level and type of home-based support services provided should integrate with other health and disability services (e.g. hospital discharge services, primary care, allied health, and non-health community services).
Administrative costs	Funders should use similar funding and allocation processes to significantly reduce the costs for those who provide services to multiple funders. The cost of operating the assessment, coordination and payment system should be minimised (e.g. by avoiding duplicated service planning).
National consistency	HCSS services should be nationally consistent, sustainable, stable and equitably funded with a nationally consistent contracting framework that supports integrated, joined up care.

Appendix 11: Funding model options

As described in the Director-General's Reference Group for In-Between Travel (2015) [25]

How it works	Strengths and weaknesses
1. Payment per hour of care delivered (fee-for-service)	
Following needs assessment, the funder allocates hours of specific tasks, such as dressing, showering and feeding. Providers are paid in blocks of time (usually fortnightly) for services actually delivered at agreed rates per hour. Increases in hours of care, week to week, need to be approved by the funder. Where the funder does not specify the hours or services closely, the 'payment per hour' approach comes close to the 'payment per person' approach (see below).	► Is simple to administer and provides good volume and expenditure data. ► Lacks flexibility to address changing client needs unless the funder very quickly responds to provider reassessments. ► Provides no incentive to discharge, or reduce service for clients who no longer need them (which may lead to over-servicing). ► May make it more difficult for providers to introduce new ways of meeting client needs, as agreement with the funder is required. ► Can make it difficult for care and support workers to maintain their income when clients change, go on holiday etc, and may create a disincentive for providers to guarantee hours or make greater long-term investment in training and qualifications (unless the rate of payment accounts for potential non-service days and training). ► Means that clients' needs may not suit the half-hour blocks of time allocated, potentially using service time inefficiently.
2. Payment per person per week (or longer period) with people assigned to payment categories	
Funders allocate clients to a category (e.g., by casemix algorithm from interRAI data, or other means, such as eligibility for 'supported living'). Each category is a broad group that shares similar levels of need, and payment to the provider is a set amount each period. Providers determine the specific tasks and hours provided each week.	► Gives the provider greater flexibility to manage overall costs across a pool of clients. ► Provides greater scope to develop a regularised workforce and the ability to offer guaranteed hours of work and greater investment in training and qualifications (unless the rate of payment accounts for the expected level of non-service days); however, more frequent changes in service hours may make regularised hours more difficult. ► Provides an incentive to reduce unnecessary services, and to match staff skill to client need, but also creates an incentive to reduce all service levels, which must be managed; also regularisation reduces the incentive to reduce unnecessary services because in some cases the provider will be paying for the hours. ► Current casemix tools derive from hospital inpatient services and do not translate easily to community services, so it cannot completely account for differences in clients' 'natural supports', but with large numbers in each category it may be adequate for setting an average payment rate; a 'package of care' approach better accounts for individual circumstances. ► Allows trade-off between time integrating with other health services (when they are required) and time directly meeting client needs. ► Means greater flexibility (potentially), which allows for greater client involvement in determining packages of care to suit their individual circumstances.

Appendix 11: Funding model options (cont'd)

As described in the Director-General's Reference Group for In-Between Travel (2015) [25]

How it works	Strengths and weaknesses
3. Bulk funding	
Providers are allocated a fixed sum per year (based on an estimate of the volume and complexity of client need the provider will have to manage). Providers determine how to allocate the funds across their entire client group. Any changes in the payments need to be negotiated. Bulk funding arrangements with end-of-year wash-up for differences between actual numbers or levels of need bring the approach closer to the payment per person per week.	▸ Caps costs for the funder, and provides funding certainty for the provider (depending on arrangements for end-of-year wash-ups). ▸ Means the risk of larger numbers or higher average client needs falls on the provider, in the first instance, to prioritise services or raise prioritisation or extra funding with the funder. ▸ Provides an incentive to reduce unnecessary services, and to match staff skill to client need, but also creates incentives to reduce all services that must be carefully managed. ▸ Rewards innovation and substitution. ▸ Provides greater scope to develop a regularated workforce and the ability to offer guaranteed hours of work and greater investment in training and qualifications. ▸ Allows a trade-off between time integrating with other health services when they are required and time directly meeting client needs. ▸ Provides greater flexibility (potentially), which allows for greater client involvement in determining packages of care to suit their individual circumstances.
4. Individualised funding	
The client is allocated a budget, which they manage either in its entirety or with assistance from a host agency. ACC also funds some clients directly through its 'non-contracted' stream.	▸ Means the client takes responsibility for identifying the range of services, employing their support worker and paying for services, thereby more closely matching their needs. ▸ Makes it more difficult for the funder to monitor quality and performance. ▸ Potentially gives insecure status to the care/support worker and no formal training or support mechanisms, which means a potential risk for the support worker when the client is also the employer.

Appendix 12: Caveats and assumptions for patient experiences

Data
▸ The case studies of Richard, Kohe and Margaret (pages 38-40) used FY15-16 data from Nelson Marlborough DHB, from whom EY has attained permission to use for this purpose.
▸ We randomly selected three patients within the 65+ age cohort and who received significant care and specialist assessments (both first and follow-ups).
▸ GP visits were costed at as $75, and specialist, allied health and ED presentation costed at $300. An average cost for elective and acute hospitalisation (for the quarter) provided a price / hospitalisation.
General
▸ A general assumption has been made that had additional integrated, coordinated and sufficient home care models been in place, then this could have managed the severity of a patient's health need and therefore resulted in fewer secondary care attendances.
▸ Not all of the cost savings from a reduction in secondary care attendance would be recouped as there would be cost of delivery of home-based support; however, it is likely that the costs would be less.
▸ Changes to the patient journey are based on assumptions and provided to show the potential impact of a change in the model of care and thereby the ability for the patient to receive care closer to home, age in place, receive quality, coordinated care delivery whilst also realising an overall cost saving.
▸ Whilst the significance and goal of improving models of integrated care within HCSS is focused on improving services in relation to access, quality, and individualised / restorative care (client satisfaction), there is also an element of efficiency that may drive a reduction in utility of acute services along with cost-efficiencies.
Research
▸ Generally studies show no significant difference in the total cost between preventative, integrated care interventions and care as usual – however, Marino and colleagues[42] identified that this recognises the need to shift focus from effectiveness in terms of clinical outcomes to the process of integrated care (i.e., the focus of research to date has been on health and health care utilisation outcomes rather than on the care process).
▸ The absence of data on activity, cost and outcomes is particularly lacking in the area of ambulatory and primary care based intervention. A more extensive and standardised approach to value-based health care requires better evidence to support treatment and better coordination of care.[42]
▸ Whilst Marino and colleagues[38] 2018 meta analysis of 30 articles, inclusive of 13 integrated care models, found limited evidence of significant cost-effectiveness of integrated models of care, they do note favourable impacts on health care facilities and utilisation rates. Studies identified that patient satisfaction with quality of care improved, suggesting that the potential exists for integrated models to be successful and generalised on a large scale.[42] This report acknowledges that through shifting the focus from acute to primary / community care, HCSS are well placed to take a vital role in such integration of health care services.

Appendix 13: Examples of technology to support participatory health

Below we set out some of the enablers that need to be in place to allow the uptake of digital technologies that could support, and be supported by, HCSS providers.

Enablers

Capture, analyse and understand the data / information

- Sensory
- Perceptual
- Locational

+

Tools of connection

- Mobile
- Devices
- Social
- Sensors

+

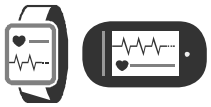
Connectivity

- Enhanced 4G
- 5G
- Internet of things
- e-Home

=

Digital uptake

Examples

	**Mobile devices**	Increasingly sophisticated capabilities to capture and understand sensory, perceptual and locational information. Even entry-level phones and tablets will soon have biometric technologies such as ultrasonic fingerprint authentication capabilities that strengthen personal data security and facilitate a vast range of actions from service delivery through to payment.
	**Medical-grade wearables**	Such as Bioflux ECG monitor and the Phillips biosensor that require approval as medical devices are emerging that provide clinically relevant and reliable data.
	**Cognitive technologies**	Such as machine learning on mobile devices, even when offline, suggest untold possibilities for cognitive behavioural therapies targeting psychosocial issues.
	**Connectivity**	Enhanced 4G and forthcoming 5G networks will enable universality and responsiveness of applications with faster mobility, lower latency and better connectivity. These will support IoT/IoE and health programmes that draw upon complex functions such as virtual reality, gamification, robotics, video coaching and the e-Home.

Appendix 14: Comparison of the opportunity for increased HCSS interventions across Auckland and Waitemata DHBs

On page 44, we discussed the opportunity for greater contribution from the HCSS sector

- We have compared Auckland DHB, Waitemata DHB and national averages for acute hospitalisations and ARC utilisation to see where there may be an opportunity to increase HCSS interventions to support people to live at home longer

Population characteristics

- To ground the comparison between Auckland and Waitemata DHBs, we considered the demographic profile of each.
- Waitemata DHB serves a population of 628,970 people, whereas Auckland DHB serves a population of 545,640 people.[43]
- Overall, Auckland DHB has a younger population than the national average and Waitemata.[43]

Figure 15: Percentage of Auckland DHB, Waitemata DHB and national populations enrolled in a PHO in April 2019

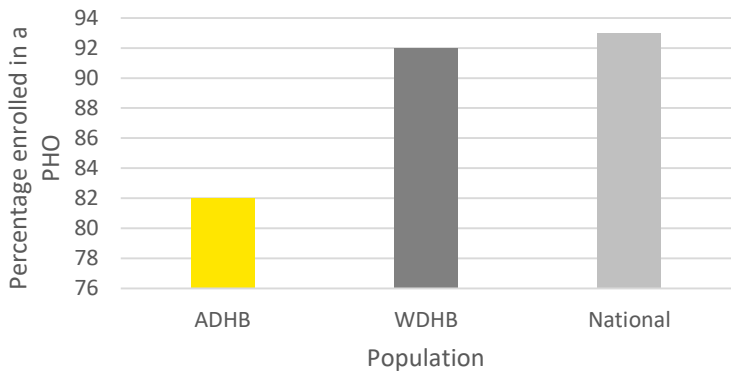
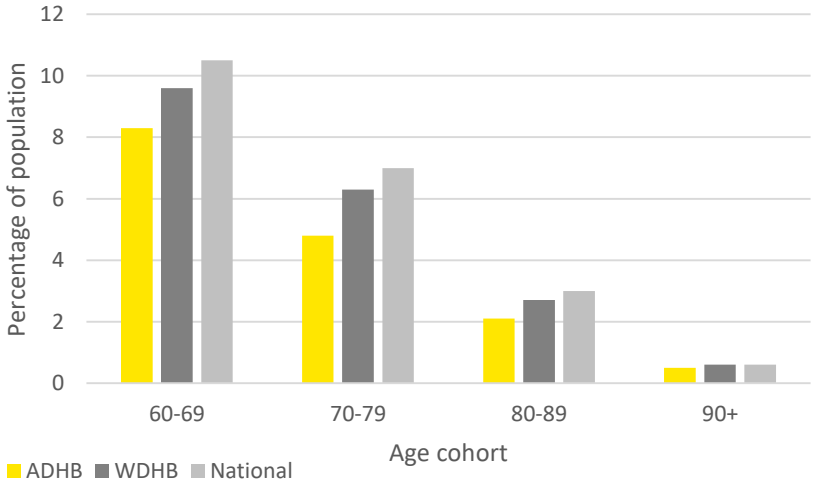


Figure 16: Percentage of the population by age for Auckland and Waitemata DHBs, compared to the national average



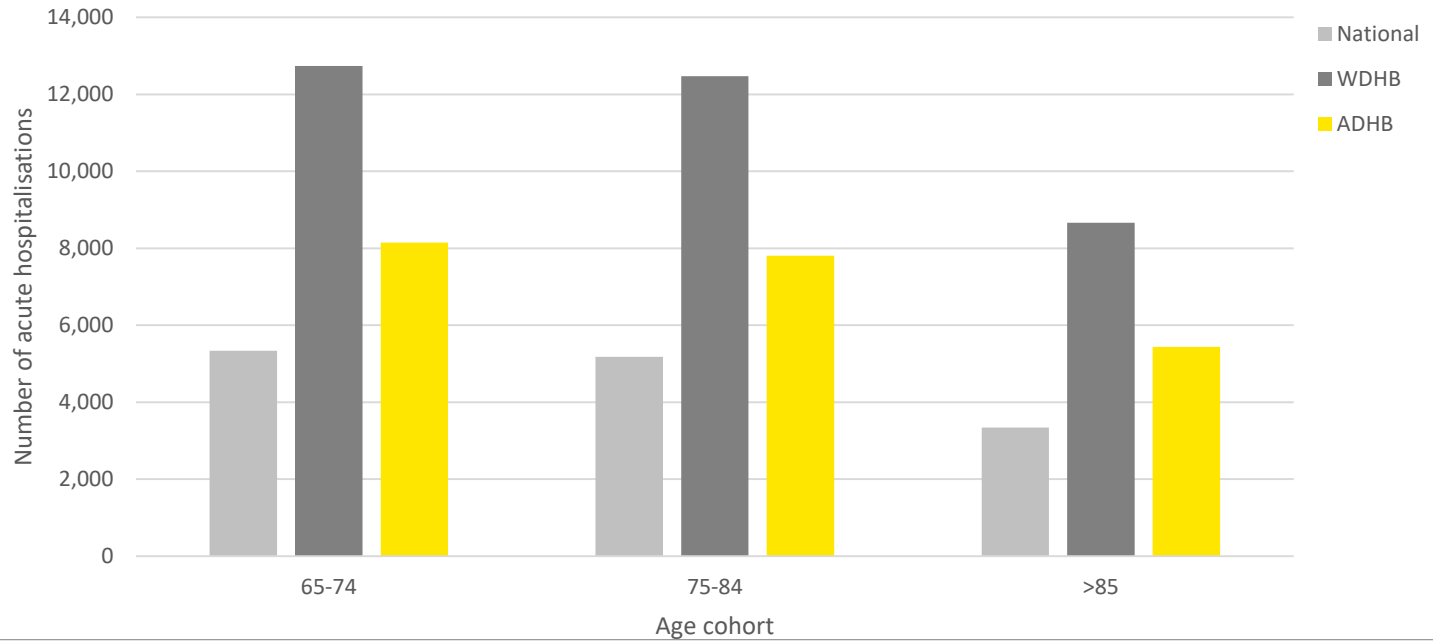
- Both Waitemata and Auckland DHBs have a lower Māori population in comparison to the national average. However, the proportion of Pacific people in Auckland DHB is higher thanthe national average. Both DHBs have high proportions of people living in the least deprived areas.[44]
- A key difference between Auckland DHB and Waitemata DHB is the proportion of the population enrolled in a primary health organisation (PHO): 82% of Auckland DHB's population were enrolled in a PHO in April 2019, compared to 92% of the Waitemata DHB population.[44]

Appendix 14: Comparison of the opportunity for increased HCSS interventions across Auckland and Waitemata DHBs (*cont'd*)

Acute hospitalisation

- Acute hospitalisations represent an opportunity to intervene earlier in the treatment pathway by providing preventative services in people's communities and homes.
- There are a number of factors that influence a DHB's number of acute hospitalisations and there is no direct way to establish the influence of funding model on this. However, the figure illustrates that there are opportunities for both DHBs to improve acute hospitalisation performance, and this could be achieved by reassessing the role of HCSS.
- Compared to the national average, Waitemata DHB and Auckland DHB have higher numbers of acute hospitalisations in FY18, for every age cohort over 65 years.

Figure 17. Number of acute hospitalisations for the 65+ population across Waitemata and Auckland DHBs compared to national averages for FY18

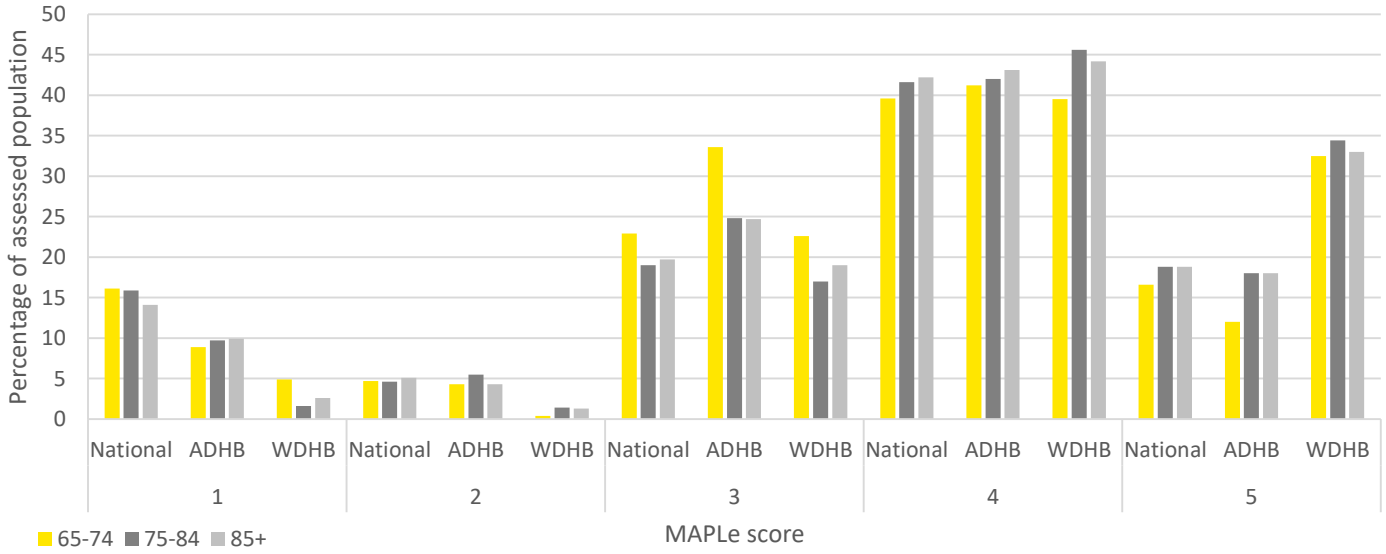


Appendix 14: Comparison of the opportunity for increased HCSS interventions across Auckland and Waitemata DHBs (*cont'd*)

MAPLe scores as a predictor of ARC admission

- MAPLe is a screening algorithm which categorises clients into five levels of risk of adverse outcomes (1 – low risk and 5 – high risk).
- Research undertaken by interRAI[45] indicates that individuals in the highest priority level are nearly nine times more likely to be admitted to a long-term care facility than are the lowest priority clients. Comparing MAPLe scores illustrates where each DHB has an opportunity to intervene for clients that have a higher likelihood of entering aged residential care (ARC).
- Auckland DHB (ADHB), Waitemata DHB (WDHB) and the national average show a similar distribution across MAPLe scores, in that most of the assessed population have scores over 3.
- Compared to the national average and ADHB, WDHB has a higher proportion of people with a MAPLe score of 5. While WDHB has an older population than ADHB overall, the age distribution of the WDHB population does not noticeably differ from the national average. Therefore the proportion of people with a score of 5 is higher than we would expect based on age distribution alone.

Figure 18: MAPLe score scales for the New Zealand, Auckland DHB and Waitemata DHB population cohorts aged 65+ (FY18)



MAPLe scale:

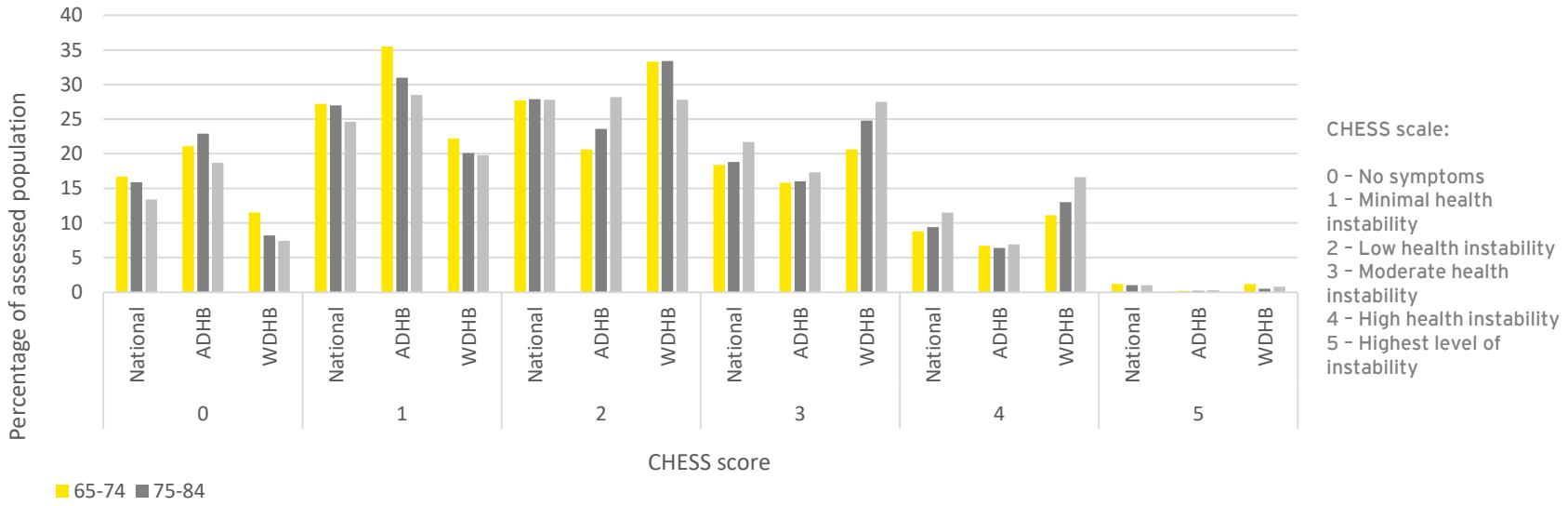
1 – Low priority, light home care services
2 – Mild priority, personal care and home care
3 – Moderate priority, range of home care services
4 – High priority, risk of adverse outcomes, residential support
5 – Very high, admission to hospital care or in community with support, need for 24-hour supervision

Appendix 14: Comparison of the opportunity for increased HCSS interventions across Auckland and Waitemata DHBs (*cont'd*)

The relationship between CHESS scores and the impact of HCSS

- The objective of CHESS outcome score is to minimise problems related to decline in function, or as a pointer to identify persons whose conditions are unstable.
- In order to understand more about the impact of HCSS interventions under different funding models, we looked at the percentage of people within the 65+ age cohort that received HCSS assessments.
- ADHB, WDHB and the national average show a similar distribution across CHESS scores, with most of the population having a score of less than 4.
- Compared to the national average and ADHB, WDHB has a lower proportion of people with a 0 score, and a slightly higher proportion of people with scores of 3 – 5. This is similar to the MAPLe scores profile, and is slightly more noticeable than we would expect, particularly when comparing to the national average.

Figure 19: CHESS scores for ADHB and WDHB against the national average for the 65+ population for 2016/17 and 2017/18



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