Workforce for the care of older people

Phase 1 REPORT

February 2011
ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

BACKGROUND
Older People make up a very significant part of our society, and the largest group of consumers of health and disability support services. Their needs are increasing steadily, due primarily to people living longer. Not only are there more older people in our society but we are able to do more to support them to live well and it is expected we will do so.

These additional needs and the services required to meet them are outstripping the capacity of NZ to provide them, both financially and in terms of workforce.

A 100% increase in the needs of older people is projected in the next 15 years to 2026 with only a projected 30% increase in the means (money and personnel) to support this. It is clear therefore that we must change the way we provide services for older people if we are not to fall short of meeting their needs in the future.

INTRODUCTION
Health Workforce New Zealand (HWNZ) has embarked on a programme of Service Reviews to inform its future workforce development work. HWNZ commissioned the present review of Services for Older People

The brief was:
- To review the needs of older people
- To review the way services are provided now
- To propose how services could be different in the future
- To consider what changes need to happen to achieve this different future, particularly in relation to workforce development

While the primary focus for HWNZ is changing the NZ workforce, they have identified that such change must be led by the way in which future services need to be configured. The needs of older people and the most appropriate service reconfiguration becomes the starting point.

THE APPROACH
A ‘whole of systems’ approach to the health of older people has been adopted. Such an approach looks at the whole range of factors which impact on the health of older people. These important factors include the needs of older people themselves, the services which exist or are required to meet these needs, and the workforce which provides these services. However these key components exist within a complex system of influences. The “whole of systems” approach considers these and also focuses on linkages and interdependencies. It is necessary to consider all of these if we are looking to move from good ideas to sustainable effective change in the system.
A Working Group of experienced leaders in the care of older people was convened to support this approach. The intent was to seek changes which increased the health of older people and at the same time did so in a way that was more sustainable and cost-effective than currently. The group found that there was considerable potential to achieve more by doing things differently.

A range of options to make positive changes in the system was proposed. The modelling approach adopted allows innovations to be evaluated in terms of benefits and positive changes but also costs and other consequences, both direct and indirect. Understanding the impact of innovations in this way then provides a basis for systematically evaluating possible options to determine the relative value for investment.

**WHAT NEEDS TO CHANGE?**

More of the same will not meet the challenge. It will be necessary to provide more of *some* existing services as more older people will require them. However, it will also be necessary to innovate, to provide for some needs in ways that are significantly different to current services. These innovations will need to be multiple and complementary to existing services and other innovations. Thus the system of the future will have to be well-integrated services and initiatives that are synergistic, rather than discrete or “silod” as they are currently.

A number of common themes were identified:

- It is vital to prevent or delay loss of function
- Rehabilitation for those people with significant potential for restoration of function must be active and rapid
- Supporting people in their homes where possible (through supporting self-care, informal carers, etc)
- Avoiding disruption of older people’s normal routines and self-management as far as possible (e.g., where possible bringing services to people rather than moving them to the service, and especially avoiding people being away from home overnight)

The changes in the workforce required to support these changes include:

- Significant changes in models of care and workforce orientation and skills.
- More consistent focus on preventing and delaying loss of function and restoration of function where that potential exists (“caring for” cannot be simply “doing for”, which may be counter-productive if it leads to loss of potential capability for an older person).
- Focus on needs assessment and care planning (where the focus is on how to best meet the needs and optimize the potential of the individual rather than simply assessing their eligibility for available services)
- Coordination and active management of care plans with older people, so that the various and usually multiple components of their care plan are well-integrated (to be better sooner and more convenient for the
consumer rather than for the provider). The role of care coordinator / health navigator needs to be developed.

- Leveraging on the expertise of the small group of health practitioners (Nurse Practitioners, Geriatricians, Allied Health etc) with specialist expertise in care of older people, so that they focus increasingly on developing the capability of the wider group of health practitioners, informal carers and older people themselves.

Several **key enablers** will be critical to the success of these models of care and workforce changes. They include:

- Enhanced Information and Communication Technology (ICT) to ensure prompt and easy access to all of the information needed to provide quality care to older people. This includes access by older people themselves and anyone they choose to provide care for them.
- Flexible funding focused on supporting and incentivizing desired outcomes, models of care and innovations (e.g., greater support for preservation and restoration of function rather than only long-term support for disability needs)

**A SHORT LIST OF INITIATIVES**

From the wide range of changes considered, a small number of innovations were selected which the Working Group considered most realistic and capable of making a significant difference.

1. Prevention & Rehabilitation
2. Short-stay in care facilities
3. Home care service response
4. Leveraging geriatrician, clinical, nursing skills in community
5. Nursing models of care
6. Care co-ordination
7. Integration of information
8. Acute hospital management of older people

None of these alone will be sufficient but a number together can have an additive effect and could go some considerable way to meeting the challenge. Certainly the proposed changes are more likely to achieve this in a way that is affordable and acceptable than “more of the same”.

**EVALUATING THE IMPACT OF THESE INITIATIVES**

Various workforce projections have been undertaken in New Zealand and overseas. However in most cases they simply extrapolate forward specific workforce groups in relation to specific services. There is no study, known to us, that tries to take a whole sector, in this case aged care, and project forward different service configurations and their implications on a range of workforce categories. This requires a ‘whole of system’ approach.

To develop such an understanding, the work began by developing a concept model focusing on the interaction between the **needs** of older people, **service configurations** and **workforce**. It is argued that future workforce requirements will emerge out of the interaction between all three of these
components. Simply projecting forward on the basis of current patterns and structures will not take into consideration the changes required.

Because of the nature of the model and the task it is trying to fulfil, data was gathered from a wide range of sources, including the Ministry of Health, Ministry of Social Development, Department of Statistics, previous reports into aspects of aged care, local and international literature and the informed estimates of the Working Group.

In addition, as the focus is on trying to explore alternatives to current patterns, the model has initially placed no constraints on workforce availability. Phase 1 has focused instead on exploring how the demand side of the workforce challenge can be addressed.

**MODEL SCENARIOS**

The model that was developed provided the basis for selecting, from a wide range of ideas, eight service options which interacted with each other to produce three distinct scenarios:

**Theme 1: Prevention and restorative care**
- Improved prevention and rehabilitation services
- Increase in short-stay care facilities
- Improved home care response

**Theme 2: Leveraging the current workforce**
- Leveraging geriatrician, nursing and other clinical skills in the community
- Developing enhanced nursing models of care and career pathways

**Theme 3: Designing services to meet the needs of older people**
- Improved co-ordination of care
- Integration of information
- Designing hospital around the needs of older people
Using the description of these themes three scenarios were conducted to explore the implications for service utilisation and workforce requirements. These were:

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Healthier Ageing</th>
<th>Beyond the Hospital Walls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumes a continuation of current trends with no change to any polices or practices</td>
<td>Explores the potential impact of reducing the need for health services, by decreasing the levels and severity of functional impairment in those over 65.</td>
<td>Explores the consequences of shifting more of the services to older people into primary and community care settings.</td>
</tr>
</tbody>
</table>

Because of the paucity of data and therefore tenuous basis upon which to make testable assumptions, this third scenario focuses on the numbers that could be moved beyond the secondary/tertiary hospital and does not speculate whether these would receive care in a home setting or a community care facility.

**MODEL OUTPUTS**

In a model of this kind, which is trying to take a ‘whole system’ perspective and incorporating a wide range of data with different levels of precision, the outputs of the model need to be seen as ‘plausible futures’ rather than as firm predictions. They take us a few steps further beyond pure speculation and provide a basis upon which more accurate projections can be made. However, at this stage they should be used to support debate and direct further data rather than as accurate predictions of demand and supply.

The baseline projections in the model, which assume no change to current trends, polices or service configurations, indicate a significant increase in demand across the sector, reflecting the growth and increase in the average age of the over 65 population.

This baseline reflects the estimated growth in the over 65 population and a slight increase in the average age. At this stage the model, assumes no change in mortality rates and as a result understates the shift in average age that is likely to result from increased life expectancy. Further refinements to the model should include these changes.

The ‘healthier ageing’ simulation run looks at the potential impact upon demand that could result by firstly, decreasing the rates at which older adults develop increasingly severe levels of functional impairment and secondly, increasing the rates at which they recover some or all of their previous functioning after an illness or accident. Changes to these levels are important, as functional impairment is a significant driver of demand for health services.

The ‘Beyond the Hospital’ simulation focuses on the service response, rather than on demand. Theme 1 (prevention and restorative care) & theme 2
(leveraging the current workforce) are built around the idea that more and more services for the older adult will take place in the community setting. These simulation runs explore the implications of shifting different numbers of acute responses into community and primary care settings. These simulations include small, medium and large shifts, but even the third is insufficient to produce the changes required to operate within a sustainable funding path, based on a 30% increase in funding over the period of the simulation.

Because of the paucity of data and no reliable basis upon which to make testable assumptions, this third scenario focuses on the numbers that could receive acute care beyond the acute hospital and does not speculate whether these people would receive care in a home setting, primary care or a community care facility.

CONCLUSIONS

• To have an aged care sector that is able to provide support services, to at least the current level and within a sustainable funding path, significant improvements will have to be made in preventive and rehabilitative care AND significant numbers of older adults will need to receive care in a community and primary care setting. These changes will be necessary to reduce an unsustainable increase in demand for long-term aged residential care and admissions to acute hospital.

• In designing a sustainable workforce we need to understand the workload that results from the interplay between the needs of older people, the services and the way they are configured to respond to those needs, and the workforce that is able to deliver those services. The phase 1 report provides a step towards understanding this interplay; however, more research is required to both validate the current model and to provide critical data where none currently exists or is unreliable.

• One of the major drivers of health service utilisation is the level of functional impairment in the over 65 population. However, despite it being the largest modifiable risk factor, little is known about the actual numbers and services associated with different levels of functional impairment. If, as part of future strategies the health sector is to manage the growth in demand further research in this area is needed. An exception to this is the OPAL study (Boyd, M., et al 2008) which does provide some data on levels of functional impairment in residential care.

• The funding and focus of residential care is currently on long-term care and support. Much more focus needs to be directed to preventative and rehabilitative care, with development of short-term service options. To support this shift in thinking, this report refers to ‘care facilities’ to indicate this broader role.
• We do not have to equate ‘trend with destiny’ in the care of older people. Modelling does indicate that it is possible to lower the rate of increase in older people accessing health services. For example, the improved preventative and rehabilitation care inherent within the ‘healthier ageing’ strategy could potentially reduce the number of older people needing long-term aged residential care in 2026 from 50,000 (53% increase, as also predicted in the Grant Thornton Report) to 45,000 (increase of 38%).

• Large shifts in the number of older people with acute care needs, being treated in primary and community care settings rather than being admitted to hospital, can also significantly reduce the need for admissions to acute hospitals. Modelling “large” shifts in where acute response services are provided can potentially reduce the projected increase in acute hospital admissions for older people from 230,000 (+61%) to 155,000 (+41%) by 2026.

• Furthermore, when this scenario is combined with changing the nature and location of the service and/or the workforce providing the care, quite different future scenarios can be envisaged. However, this requires a large ‘rethink’ in what we currently consider to be community-based care facilities. There would need to be a significant increase in both staff and service options focusing on short-term and rehabilitative care and changes in competencies.

• Shifts in focus and deployment of skilled clinicians from DHBs to primary and community settings where they will support large numbers of formal and informal care providers will be a key strategy.

RECOMMENDATIONS

It is recommended that:

• An increased focus is directed to prevention and rehabilitative service options for older people, emphasising short-term interventions focused on maximising the potential for independence.

• More work is done to support formal and informal caregivers, especially in helping older people to maximise their own potential. It is recommended that specific training and development be provided to these groups with a ‘career path’ for formal caregivers who make up the bulk of the aged-care workforce.

• Clinical specialists in the needs of older people be seen as one of the major resources available and they need to focus on supporting increased knowledge and skills of other health and support workers in community and primary care. (“leveraging”) To do this the constraints that ‘tie’ people to a facility such as an acute hospital need to be looked at to facilitate the ‘transfer of expertise’ across different service locations.
• Service and facility design within acute care to be geared up to the needs of their major patient group i.e. people over the age of 65.

• Older people, because of their multiple needs, cut across many specialities and service locations. A key to enabling integrated care for older people will be to design and pilot a ‘network information strategy’ based on ensuring ready access to all data relevant to the individual person by anyone who needs this to provide optimal care.

SUMMARY
The work to date has confirmed that continuing the current arrangements without change is untenable. It has also identified considerable potential to improve the system in ways which not only are more resource-realistic but more importantly enhance the lives of older people. This will require multiple initiatives, well-orchestrated so that they support each other and existing systems. These are generally focused on a change to the approach to care of older people which will require significant changes to the model of care and skills and attitudes of the health workforce. Greater focus on individualized care plans and integrated implementation will be essential. These will need to be supported particularly by appropriate funding mechanisms and information and communication technology.

The overall purpose of the Aged-Care Review is to develop a comprehensive understanding of future workforce needs, taking in account new possibilities in the way we think about and resource aged-care in New Zealand. These new possibilities may include different mixes of people providing care, shifting tasks from one category of personnel to another, and possible creation of new categories of aged-care worker. It may also include shifting where care takes place and the manner in which care is provided.

The phase 1 report provides a baseline from which further work can be undertaken.
1. INTRODUCTION

As a step towards developing a comprehensive understanding of workforce needs in aged-care this report develops a ‘whole system’ framework for exploring the interplay between needs, service provision and workforce. It then uses this framework to develop future options and scenarios for the aged care sector which provide the basis for a series of simulations that explore service demand and its implications for workforce requirements.

It has been proposed by Prof. Des Gorman, chairman of Health Workforce New Zealand, that between now and 2026 the demand for services will double but the funds to support that demand will only increase by around 30%. If this turns out to be true the implications are considerable. For example baseline projections, assuming no change in historical trends or in service configurations indicates that the number of people receiving home support will increase by 61% and those in aged residential care will increase by 54%. This equates to an extra 290,000 people over the age of 65 receiving care, either in the home or in a residential setting. A 30% increase in funding means that we could only provide care, as we do now, for around 240,000 of them. What is going to happen to the 50,000 who, given current service levels, would have received care but are now outside the ‘financial envelope’?

If one takes account of acute care, the situation is worse. Baseline projections indicate that those 65 and over being admitted to an acute hospital will rise by around 64% between now and 2026. That is 124,000 more than a 30% funding increase would pay for. Assuming that people with acute care requirements would be given priority that means money currently provided in the community setting would be diverted. Even without taking into account the higher cost of hospital care it would mean that across community, primary and secondary care there would be around 200,000 people over the age of 65 who would no longer be able to access that care under the 30% funding projection.

This phase 1 report tries to outline some future options that can address this discrepancy.

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1 The Utility of Idealised Patient Journey as a Centre-Piece of Health Workforce Planning: Asia Pacific Journal of Health Management; 2010; 5:2
2. CONCEPT MODEL

“Human and other resource needs should be considered as subordinate to service and health needs and objectives, from which they are derived”

Assessing future health workforce needs, 
World Health Organization and World Health Organization, on behalf of the European Observatory on Health Systems and Policies

One of the foundation principles that the Aged-Care Review Group agreed at the outset was that workforce planning for aged-care has to be based on an understanding of the workload that the workforce has to deliver. This workload is a result of the needs of older people and the services that are designed to respond to these needs. In designing a sustainable workforce we need to understand the workload that results from the interplay between the needs of older people, the services and the way they are configured to respond to those needs and the workforce that is able to deliver those services. To capture this interplay a concept model was developed:

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Figure 1: Modelling Workforce Requirements: Concept Model

Some key points that are highlighted in this concept model are:

- Within this framework older people are the starting point as well as the end point of services. Their needs provide the basis for establishing the
work that has to be carried out and the meeting of those needs is the focal point for the workforce and the services within which they work

- Service configuration has many influences and future workforce planning needs to look closely at the service models that not only meet the needs of older people but are able to be staffed.
- Workforce is determined by, and also affects, service configuration and the care older people receive i.e. the nature of the workforce has a significant effect upon the way services are delivered and the expectations that the workforce has of the care that the service will provide.

This concept model provided the basis for developing a model structure to look at each of the three components; needs of older people, services and workforce. The model structure for each of these is described in the following section.
3. MODELLING THE AGED CARE SECTOR

3.1 MODELLING NEEDS OF OLDER PEOPLE

The need for health care is strongly related to the level of functional impairment and this has been used as the core structure for modelling health needs. The model considers three core categories – no functional impairment, some functional impairment and severe functional impairment.

![Figure 2: Functional Impairment as a Driver of Demand]

The basic concept underpinning this is that the level of functional impairment is a significant driver of demand for health services and by altering the level of functioning within the older population one can have an effect upon the overall demand for health services.

Changes to the numbers of people exist within each category can occur by altering the flow rates between them; changing the rate at which people develop increasing levels of functional impairment and/or the rate at which people regain function.

The following extract expands the ‘older people in need of care’ shown in the concept model to show the core structure that has been used to model different levels of functional impairment.

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2 Through the project the terminology used to describe what we are referring to as ‘functional impairment’ has been controversial. The international term is ‘disability’ which refers to limitations, restrictions or impairment that restricts everyday activity. However, the initial use of that term was criticised on the basis that it created confusion with ‘disability services’ and ‘disability data’, which, in New Zealand has a much narrower scope. With all its problems we have decided to use the term ‘functional impairment’ and its use in this document is synonymous with the international recognised term ‘disability’. It includes the impact of acute and chronic conditions, both physical and cognitive.
Figure 3: Modelling Service Need

The shaded boxes specify the number of people with no, some and severe functional impairment. The arrows describe the people who move between each of these stocks by either i) increased levels of functional impairment, thereby shifting from left to right, or by ii) improvements in their level of functioning, thereby shifting from right to left.

The key point to be made here is that in any projections of health service utilisation the key drivers will not only be the numbers of people over the age of 65 but also the levels of functional impairment within that population and the rates at which these levels increase and decrease within the older population. Functional impairment thus becomes an important, modifiable risk factor and therefore, an important point of intervention for affecting future utilisation of health services by older people.

3.2 MODELLING SERVICE CONFIGURATION

Service configuration looks at the patient/service interactions across three settings – home, care facility and acute hospital.

In managing the flows and changing the way services are configured it is possible to move the service and/or the patient. For example, the older person could receive the same rehabilitation services that are currently provided in the hospital setting in a community-based care facility or at home.
Figure 4: Modelling Service Configuration

We have used the term ‘care facility’ to emphasise the need to explore options beyond e, and sometimes already are, provided by Care Facilities run predominantly by NGOs. These options will be discussed in section 6.

The following table provides service descriptions for each of these care locations, along with the health goals.
### Table 1: Service Descriptions and Health Goals by Care Location

<table>
<thead>
<tr>
<th></th>
<th>Care for Normal Functioning</th>
<th>Acute Episodic Care</th>
<th>Recovery Care</th>
<th>Long-Term Care</th>
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</thead>
<tbody>
<tr>
<td><strong>At Home</strong></td>
<td><strong>Service Description</strong></td>
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<tr>
<td></td>
<td>Requires health education,</td>
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<tr>
<td></td>
<td>screening and 1st care</td>
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<tr>
<td></td>
<td>services. Those with chronic</td>
<td></td>
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<td></td>
<td>conditions need self care</td>
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<td></td>
<td>training to reduce risks</td>
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<td></td>
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<tr>
<td></td>
<td>and control the condition(s)</td>
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<tr>
<td></td>
<td>Also need access to 'specialist' services when condition gets out of control.</td>
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<td></td>
<td>Those with disabilities and/or chronic conditions need home support to provide continuity of care and co-ordination of services.</td>
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<tr>
<td><strong>Care Facility</strong></td>
<td><strong>Health Goals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Staying well</td>
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<td></td>
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<td></td>
<td>• Limiting the progression of any chronic condition</td>
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<tr>
<td></td>
<td>• Maintaining autonomy</td>
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<tr>
<td><strong>Acute Hospital</strong></td>
<td><strong>Service Description</strong></td>
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<td></td>
<td>Need timely access to acute services in 1st and 2nd care. Where 'acute episode' leads to rapid decline (e.g. heart attack, diagnosis of invasive cancer) needs access to palliative care and specialist support to manage pain and other symptoms.</td>
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<td></td>
<td><strong>Health Goals</strong></td>
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<tr>
<td></td>
<td>• Maximise potential with minimal suffering and disruption.</td>
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<tr>
<td><strong>Table 1: Service Descriptions and Health Goals by Care Location</strong></td>
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<tr>
<td></td>
<td><strong>Service Description</strong></td>
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<tr>
<td></td>
<td>Rehabilitation services and social support services designed to help person increase their ability to look after themselves and maximise functional potential.</td>
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<tr>
<td></td>
<td><strong>Health Goals</strong></td>
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<tr>
<td></td>
<td>• Regaining as much function as is possible and returning to previous health state.</td>
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<td></td>
<td>• Increase person's ability to care for themselves.</td>
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<tr>
<td></td>
<td><strong>Service Description</strong></td>
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<tr>
<td></td>
<td>Support to manage the complications associated with severe conditions and disabilities. Also needs support and training for self care and for carers as well as monitoring and co-ordination of services.</td>
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<tr>
<td></td>
<td><strong>Health Goals</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Maximise potential</td>
<td></td>
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<tr>
<td></td>
<td>• Future planning</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Avoiding complications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Comfort and dignity at end-of-life</td>
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</tbody>
</table>
3.3 MODELLING THE CHANGING WORKFORCE
The third component of the model focuses on the changing workforce, how it is affected by changing needs and service configurations and how the workforce affects both.

Figure 5: Modelling Workforce
Maintaining enough of the right sort of people in the workforce with the right set of skills involves managing the flows into and out of each stock. These flows include:

- Recruiting a new workforce.
- Affecting the training prior to graduating.
- Changing the rate at which people leave.
- Recruiting and retraining experienced but inactive workforce.
- Developing the unregulated existing workforce.
- Ensuring there is ongoing opportunities for knowledge and skill development.
### 4. FUTURE INITIATIVES

The Review Group developed 8 key initiatives which provide the basis for its recommendations. These are:

<table>
<thead>
<tr>
<th>1. <strong>Prevention &amp; Rehabilitation</strong>: The review group considers that improved prevention and rehabilitation services are central to any management of future demand upon health services by older people.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2. <strong>Short-stay in care facilities</strong>: currently the focus of care for older people outside of the acute hospital is on long term care. An increase in short-term, recovery focused services and facilities will be required to support the rehabilitation services in recommendation 1.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>3. <strong>Home care service response</strong>: The above recommendations will require more primary care and home-based services that are focused on prevention and recovery, requiring a new perspective and set of skills amongst those providing care in the community and home setting.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4. <strong>Leveraging geriatrician, clinical, nursing skills in community</strong>: Central to these recommendations is an increase in skill amongst those outside of acute hospitals. This will only occur if the clinical skills which are often located in the hospital are leveraged in the community.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>5. <strong>Nursing models of care</strong>: Nursing is core to the future aged-care workforce and a coherent approach is needed to recognise the different levels and roles within nursing as a ‘function’ i.e. caregiver, enrolled nurse, registered nurse, clinical nurse specialist, nurse practitioner.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. <strong>Care Co-ordination</strong>: The existence of co-morbidities increases with age, especially in those over 75 and consequently co-ordination of their care is crucial if the care is to be effective and the resource is to be efficiently utilised.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. <strong>Integration of information</strong>: In line with the above recommendation information needs to be available across the continuum and easily accessible to the older person themselves and those who are providing their care.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8. <strong>Acute hospital management of older people</strong>: For the modern hospital the older patient is the norm and they therefore need to be organised and staffed in a way that focuses on their e.g. gerontology should be a core discipline across all health professionals.</th>
</tr>
</thead>
</table>

Theme 1: Focus on Prevention & Restorative Care

Theme 2: Leveraging the Current Workforce

Theme 3: Designing Services to Meet the Needs of Older People
The options being presented in this report are combined into a set of three themes that have been developed to explore the potential impact of different service models on demand for aged care services and the consequences for workforce requirements.

4.1 THEME 1 – FOCUS ON RESTORATIVE CARE

The first three options focus on balancing the current focus of aged care service on long-term care with the need to emphasize short-term interventions focused on maximising the potential for independence. While each of the recommendations focuses on different aspects, the effectiveness of each is highly influenced by developments in the other two.

1. **Rehabilitation**: The review group considers that improved rehabilitation services are central to any management of future demand upon health services by older people.

2. **Short-stay in care facilities**: currently the focus of care for older people outside of the acute hospital is on long term care. An increase in short-term, recovery focused services and facilities will be required to support the rehabilitation services in recommendation 1.

3. **Home care service response**: The above recommendations will require more home-based services that are focused on recovery, requiring a new perspective and set of skills amongst those providing care in the home setting.

The basic changes involved in these options are mapped against the core model as described in section 3 and are shown in the following diagrams:
Initiative 1: Improved Prevention & Rehabilitation Services

The basic elements of this theme are i) improved prevention to reduce the rate of functional impairment and ii) rehabilitation services that focus on early discharge from hospital so that ongoing rehabilitation, to maximise the recovery potential, takes place in other care facilities and/or the home. The key elements and changes in patient pathway are shown in the graphic. The three key elements are:

a. **Change in Service configuration:** A focus on improved acute response and early discharge to other care facilities and/or the home. This also includes increased options for first contact, requiring community-based core service teams.

b. **Change in Functioning:** Evidence, using stroke as an example, indicated that there can be significantly increased rates of prevention and functional recovery, which can reduce future acute episodes and demand on hospital services.

c. **Change in Workforce:** The workforce already exists but changes need to be made in training. For those working within the acute hospital the focus has to be on rapid response and early discharge. For those providing rehabilitation services within other care facilities or in the home the focus have to be on maximising the level of functioning.

The arrows on the model highlight the focus of service changes, improvements in patient functionality and key areas for workforce development.

A solid blue arrow indicates an increase in the flow.
Initiative 2: Short Stay Care Facilities

As with improved rehabilitation services central to providing effective short-stay in care facilities is the development of a community-based multi-disciplinary team of aged-care specialists. The service focus is on preventing the progression of functional impairment, especially the development of severe impairment. The three key elements are:

a. **Change in Service configuration:** The care packages and service teams should be outside the acute and AT&R services, and as close to the person’s home as possible utilising existing buildings provided by a range of care facilities. Two issues that would need to be looked at closely to make this viable would be transport and modifying current funding models, which are largely focused on long-term care.

b. **Change in Functioning:** Focusing on preventing and reducing the progression of functional impairment there is the potential to increase the percentage of years free from disability by around 1.5% to 2%.

c. **Change in Workforce:** A key workforce gap is in the specific clinical leadership needed to develop the effective MDT’s in a primary and community setting. In addition, the MDT would need support from health care assistants and informal carers, who would need training to develop the orientation and skills needed to provide services focusing of restoration of functioning as opposed to long-term care. Improving the overall skills of GPs and others working in primary care is central to this.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.
Initiative 3: Home Care Service Response to Acute Illness

The focus of this option is on improving the acute response to the frail elderly, and to ensure that as much as possible this response is based in the home. While the response to a gradual decline and increased frailty is also important the Review Group considered that the acute response was the area that was in most need of improvement.

a. **Change in Service configuration:** Co-ordinated under one umbrella this service option focuses the assessment, monitoring and rapid response to acute episodes amongst the frail elderly. It would involve acute treatment followed up with increased short-term supports focusing on active rehabilitation and retraining as well as nutrition support.

b. **Change in Functioning:** The focus is on preventing functional impairment and on reducing its progression. The view is that the rate at which older people develop severe functional impairment could be reduced by 15-30% (Kane, R, et al 2003). Furthermore it is believed that this could reduce unplanned admissions to the acute hospital by 5-15%.

c. **Change in Workforce:** Key workforce issues include GP teams willing to manage higher levels of acuity, removing the current barriers to this and improving service co-ordination across secondary, primary and community services.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.
4.2 THEME 2 - LEVERAGING THE CURRENT WORKFORCE

Initiatives 4 & 5 focus on leveraging the current workforce. Initiative 4 acknowledges that we have a highly skilled and competent professional workforce which is, all too often, ‘tied up’ within the acute hospital. In part this is because of the different levels of funding within DHBs and within other settings such as aged residential care. To enact the recommendations within this scenario significant attention will need to be paid to these funding disparities.

Given the focus of the first three initiatives this workforce has to be supported to break out of the confines of the acute hospital setting to help design and lead the new service models and to support the other health professionals and carers who will be central to delivering those services. Theme 2 involves the following service initiatives:

4. **Leveraging geriatrician, clinical, nursing skills in community:**
Central to these recommendations is an increase in skill amongst those outside of acute hospitals. This will only occur if the clinical skills which are often located in the hospital are leveraged in the community.

5. **Nursing models of care:** Nursing is core to the future aged-care workforce and a coherent approach is needed to recognise the different levels and roles within nursing as a ‘function’ i.e. caregiver, enrolled nurse, registered nurse, clinical nurse specialist, nurse practitioner.
Initiative 4: Accessing Geriatrician, Clinical, Nursing Skills in the Community

The focus of this option is on reallocating the time spent, by location and service setting of the current workforce.

a. **Change in Service configuration:** Involves training and upskilling of the primary health care workforce to prevent and manage common conditions amongst the 65+. This workforce would be supported by secondary nurse specialists and geriatric specialists working with primary care team.

b. **Change in Functioning:** The potential impact of these changes would be to delay unnecessary entry to care facilities and the acute hospitals, reducing the transfer from care facilities to the acute hospitals by around 20%. Furthermore, it is believed that this change could reduce unplanned admissions to the acute hospital by greater than 20% (Caplan et al 2006). This model has similarities to what is already happening in paediatrics which could provide an opportunity for learning.

c. **Change in Workforce:** There is a significant lack of clinical nurse specialists - gerontology and nurse practitioners as well as allied health professionals working with older people. These specialist practitioners will be critical in training and subsequently supporting less specialised nurses and other care providers in the community.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.
Initiative 5: Nursing Models of Care

The focus of this option is on developing the nursing model of care from informal carer to nurse practitioner, understanding the functions fulfilled by each group. It includes increasing the education and training in gerontology within the acute RN model as well as providing a more coherent career path across all levels of nursing.

NB: this section is talking of ‘nursing’ as a function; a function that is carried out by professional nurses and others.

a. **Change in Service configuration:** the focus here is on more advanced care planning, increased training across the different levels of nursing and partnership with primary and secondary care doctors.

b. **Change in Functioning:** Increased use of nurses in care facilities and acute hospitals has been shown have an impact on unplanned hospital admissions.

c. **Change in Workforce:** In addition to issues of recruitment and training funding models may need to be considered that support increased use of nursing e.g. eligibility for capitation or GMS funds.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.

<table>
<thead>
<tr>
<th>Career Levels</th>
<th>Implement care plans</th>
<th>Design care plans</th>
<th>Risk management assessment</th>
<th>Chronic care coordination</th>
<th>Gerontology assessment</th>
<th>Advanced assessment</th>
<th>Leadership</th>
<th>GP partnerships</th>
<th>Prescribing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal Caregiver</td>
<td>Formal Caregiver</td>
<td>Enrolled Nurse</td>
<td>Registered Nurse</td>
<td>Nurse Specialist Gerontology</td>
<td>Nurse Practitioner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Central to theme 2 is the makeup of those involved in providing ‘nursing care’; from informal caregivers through to differing levels of professional nurses. The current ‘workforce pyramid for this group is shown below;

Figure 6: ‘Nursing Pyramid’
4.3 THEME 3 – DESIGNING SERVICES FOR OLDER PEOPLE

Initiatives 6, 7 and 8 focus on the designing of services and settings that are responsive to the characteristics and needs of older people. Given that as one ages, the probability that one will have multiple co-morbidities increases so interactions will occur in many different settings and with many different people. Without co-ordination the care may be sub-optimised and expensive. Furthermore, most hospital services, apart from obstetrics and paediatrics, are largely concerned with providing services to people over the age of 65 and they need to reflect this in the way they are designed and organised.
Initiative 6: Care Co-ordination

The focus of this initiative is on tackling the reality that as one ages the rate of co-morbidities is likely to increase. The logical consequence is the need for consumer centred and directed care that is well co-ordinated.

a. Change in Service configuration: Within this initiative key issues include translation across services, navigation between them and case management of the top 5% most severely impaired. Service co-ordination also raises the issue of technology to maintain the links and information across the different services and service locations.

b. Change in Functioning: Better co-ordination of care can reduce unplanned hospitalisations. This occurs because good care co-ordination ensures interventions to minimise deterioration occurs earlier, and better management increases adherence to care plans. Furthermore, familiarity and current legislation which only allows the patient themselves to make the plan limits the uptake. (Sankaran, et al 2010).

c. Change in Workforce: Key workforce roles that need to be developed further are that of navigator and co-coordinator or case manager.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.

• Key gaps include navigators, co-ordinators and case managers.
• This will require new training and recruitment for new roles.
Initiative 7: Integration of Information

The focus of this initiative is the integration of information within a shared care environment.

a. **Change in Service configuration:** Establishing shared care models requires effective use of information that is easily accessible by all those involved in the care of the older person. This has a major role to play in facilitating increased levels of care in the home.

b. **Change in Functioning:** Shared care, incorporating advance care planning, facilitated by effective use of information is seen to have a significant impact upon reduced admissions to hospital, use of unnecessary test and reduced rate of functional impairment.

c. **Change in Workforce:** This initiative can have a positive effect on workforce in terms of enhancing care in the community, improving job satisfaction and thereby recruitment and retention.

A solid blue arrow indicates an increase in the flow.

A dotted red arrow (not shown in this scenario cluster) indicates a decrease.

• The major gap that would need to be filled is IT literacy skills.
Initiative 8: Acute Hospital Management of Older People

This initiative is promoting the idea that acute hospitals need to focus on understanding the needs of their major ‘client group; i.e. people over the age of 65.

a. **Change in Service configuration:** This would involve different design considerations such as low impact flooring, easy observations, meals out of bed and programmes designed to minimise continued functional deterioration.

b. **Change in Functioning:** Admission to hospital is a significant risk factor in increasing functional impairment in older people. This initiative is about a re-orientation in thinking to increase understanding of older peoples’ needs and the benefits for the person and for the hospital of a more active focus on rehabilitation rather than care. It also changes the role of the family. Rather than ‘giving up their autonomy’ at the door they should have an expectation of continued participation.

c. **Change in Workforce:** A re-orientation of the hospital requires a re-orientation of the workforce within it. It will require greater education about the physiology/frailty of older people, delirium etc. It will require increased training in rehabilitation skills rather than acute/caring role. It will also require training of junior staff about relating to older people.

Workforce Gaps

- Acute nursing with rehabilitation skills
- Delirium skills – CNS
- Allied health with skill mix in acute geriatric medicine
- General physician/orthopaedic surgeon with skills in older people.
5. SIMULATIONS

The following scenarios take their point of departure from the themes and initiatives described above. Neither the understanding of the detail within each of the scenarios nor the availability of data to support that understanding enables all aspects of the scenario to be simulated. Instead, we have chosen to extract some key changes that are inherent within the theme and made some estimates of future demand and workforce requirements on the basis of the changes described in the initiatives.

Using the description of the initiatives three scenarios were conducted to explore the implications for service utilisation and workforce requirements. These were:

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Healthier Ageing</th>
<th>Beyond the Hospital Walls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumes a continuation of current trends with no change to any policies or practices</td>
<td>Explores the potential impact of reducing the need for health services, by decreasing the levels and severity of functional impairment in those over 65.</td>
<td>Explores the consequences of shifting more of the services to older people into primary and community care settings.</td>
</tr>
</tbody>
</table>

At this point the outputs of the simulation runs should be viewed as ‘plausible futures’ rather than predictions. There is still too much uncertainty in the model itself and in the projected impacts of service changes for the model outputs to be used as precise predictions. Where possible, references to support the assertions being made about the impact of various initiatives have been noted. Where any of the options that are considered for implementation the model will be developed further to make it more detailed and robust. For this first phase the model outputs provide a sense of direction, scale and timing of any change.

5.1 SIMULATION 1: BASELINE

This section explores the growth in demand for health services amongst the 65+ population assuming no change in current trends or service provisions. This baseline will provide a point of comparison for the other simulation runs.
5.1.1 Levels of Functioning in Older People

The review group considers that within aged-care the biggest driver of demand for health services is level of functioning. As people over 65 develop various types and severity of impairment their needs for support and/or health services increase. Because of this, slowing the rate of decline of functional impairment and recovering as much function as is possible after any health episode is a major factor in managing demand.

The data used in the model comes from the Australian Bureau of Statistics Survey of Disability, Ageing and Carers (2004) which has been calibrated for the New Zealand population. It provides a level of detail that is not available in the New Zealand survey. It is a self report survey and is better suited to the purpose of understanding levels of functional impairment in the older adult population. The Australian survey uses the term disability, however as noted earlier, we often use the term disability in New Zealand to refer to ‘Health and Disability services’ so we have, in this report, used the term ‘functional impairment’. These terms are used synonymously and are defined in the Australian report as:

…”any limitation, restriction or impairment, which has lasted, or is likely to last, for at least six months and restricts everyday activities. Examples range from hearing loss which requires the use of a hearing aid, to difficulty dressing due to arthritis, to advanced dementia requiring constant help and supervision.”

Model estimates, using this data, indicate that the number of people 65+ with some functional impairment will increase from 193,000 in 2010 to 315,000 in 2026; an increase of 63%. The number of people 65+ with severe functional impairment will increase from 127,000 in 2010 to 207,000 in 2026; an increase of 62%.

This increase is driven by the increasing numbers of older people in the population and the increase in average of those over 65\(^3\).

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\(^3\) Some data however indicates that there is a shift taking place from ‘major to moderate limitations’ (Graham, P., et al 2004). In terms of the model this equates to a reduction in the rate at which people develop severe functional impairment. If this is the case the estimates of those with severe functional impairment shown in the model maybe over stated by around 3% to 5%. 
5.1.2 Service Provision

In modelling service provision we have calibrated current levels of functional impairment with current service levels and have kept this ratio constant in the baseline estimate. To develop these estimates of the use of aged care services we have brought together data from three sources:

- Grant Thornton (2010). Aged Residential Care Service Review
- Counties Manukau DHB (2010)
- Ministry of Health (2006/07). Hospital Discharges
These sources of data were then calibrated against the population projections being produced by the model and the changing levels of functional impairment as described in section 3.

### 5.1.3 Care Facilities

The Grant Thornton Report was used to calibrate the level of service demand within care facilities. For the baseline projections the care facilities were assumed to be the same as those described in the report i.e. rest homes, hospitals, dementia wards and ‘other’. Furthermore, the baseline projections followed the assumptions outlined in ‘Scenario A’ within the Grant Thornton report.

![Figure 8: Baseline Projections for Care Facilities](image)

The projection from this modelling compared with the ‘scenario A’ projection from the Grant Thornton report is shown below:

![Figure 9: Comparison of Baseline Projections with Thornton Report](image)

The model follows closely the projections in the Grant Thornton report, apart from the last 5 years. This is because the current model does not, at this stage, incorporate improvements in mortality rates over the period of the simulation and all runs show a slightly lower growth in the population, resulting in slightly lower numbers for the period 2020 to 2026.

### 5.1.4 Acute Hospitals

The projections for acute hospitals are based on Ministry of Health data on hospital discharges for those over the age of 65+. The baseline simulation assumes that
there are no changes in the model of care and growth will be in line with growth in the population.

Figure 10: Baseline Projections for Acute Hospital Demand
The baseline projections indicate that admissions to acute hospitals will rise from 370,000 in 2010 to 605,000 in 2026; a rise of around 64%.

5.1.5 Home Support
Data on home support is not available across the country so we have made projections based on data from one DHB. While this has obvious pitfalls it does provide a 'stake in the ground' that can be modified as more data becomes available. Furthermore, given the importance of home support in the scenarios described in section 4, research in this area is likely to be very important to obtain a better understanding of current service provision. Taking into account these limitations the following baseline projection needs to be treated cautiously.

Figure 11: Baseline Projections for Home Support
These projections indicate that the utilisation of home support services could rise from a current estimate of 150,000 to 244,000 by 2026; a rise of 63%.

5.1.6 Workforce – Who is Currently Providing the Care?
The data for the current workforce has been obtained from a number of sources. These include
- The Grant Thornton Report

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4 Jenni Coles and Sam Cliffe (2010). So what are we doing about the demand for HOP services. Counties Manukau District Health Board
The Nursing Council  
DHBNZ  
Ministry of Social Development

The following table shows the numbers currently working in aged care within major workforce categories.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Headcount</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geriatricians</td>
<td>37</td>
<td>32.96</td>
</tr>
<tr>
<td>Nurse Practitioners (specialising in aged care)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Nurse Practitioners (other specialties but most of service provided to older adult)</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Cardiology</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Chronic conditions</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mental health</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Palliative Care</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nurses actively working in Continuing Care within a DHB (elderly)*</td>
<td></td>
<td>280</td>
</tr>
<tr>
<td>Nurses actively working in Continuing Care within community and primary care (elderly)*</td>
<td></td>
<td>356</td>
</tr>
<tr>
<td>Nurses in Aged Residential Care*</td>
<td>4,705</td>
<td>3,795 (4,130 is the Nursing Council Figure)</td>
</tr>
<tr>
<td>Caregivers in Aged Residential Care*</td>
<td>18,150</td>
<td>12,324</td>
</tr>
<tr>
<td>Therapists in Aged Residential Care*</td>
<td>1,284</td>
<td>941</td>
</tr>
<tr>
<td>Managers and other non care staff working in Aged Residential Care*</td>
<td>9,295</td>
<td></td>
</tr>
<tr>
<td>Unpaid carers who assist friends and family members who need help with everyday living because of ill health, disability or old age.</td>
<td>420,000</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Current Workforce Numbers in Aged Care

5.1.7 Workforce Demand – Baseline Projections

Assuming no change to service provision the following graphs show the projected growth in workforce requirements. Again, to re-emphasise, these projections assume no change to current trends, policies or service levels. Furthermore the projections also reflect the data we have on the workforce. In many cases the descriptions of the workforce make it difficult to directly relate to a role in aged care.

**Figure 12: Baseline Demand for Nurses in Care Facilities**

The main driver of workforce demand in this baseline projection is the growth in service utilisation by the growing numbers of older people. Because the model keeps a link between service volumes and workforce demands the model output provides a slightly different projection than does the Thornton Report. Under scenario A, within the Thornton Report there is a decline in service utilisation, which in our scenario is reflected in the slight decline in workforce requirements between 2006 and 2010. As a result the baseline projection shows around 700 fewer nurses being required in 2026 than does the Thornton report. The following graph shows the comparison with the projections in the Thornton Report.

**Figure 13: Baseline Projections for Nurses in Care Facilities – Comparison**

The Thornton Report also provides data on the turnover of care staff which they calculated as being 32% between the years 2005 to 2009. If this turnover rate
continues into the future the sector will need to recruit, by 2026, nearly 2,000 nurses per year to keep the same nurse patient ratios that currently exist.

The baseline projections for caregivers in care facilities show a rise from 12,000 in 2010 to 19,000 in 2026, a rise of 54%. As with the demand projections for nurses the demand profile for the period 2006 to 2010 reflects the decreasing service volumes in aged-residential care.

Figure 14: Baseline Projections: Caregivers

As with the projections for care facilities the main driver of the baseline projections in acute hospitals is the current staff patient ratios. The baseline assumptions assume no change to this ratio so the growth in workforce reflects the growth in service volumes.

Figure 15: Baseline Projections: Geriatricians

As with geriatricians the baseline projections for nurses in continuing care (elderly) reflect the growth in service volumes.

Figure 16: Baseline Projections - Continuing Care Nurses Working in DHBs (elderly)
5.2 SIMULATION 2: HEALTHIER AGEING

A major service shift put forward in scenario 1 is the need to focus on preventative and restorative care with increases in prevention, rehabilitation and short-stay care facilities. The argument for the shift is that if implemented it could have a significant impact upon the levels of functional impairment in the older aged population. By making the changes in service configuration it changes the levels of functional impairment thereby impacting the level of service demand and workforce requirements.

Research in New Zealand and overseas indicates that significant improvements can be made in the rates at which older adults develop increasing functional impairment and the rates at which older adults recover some or all of their functional impairment following effective rehabilitations services. To bring these about, the changes described in section 4 would be required.

To explore the implications of this shift, simulation 2 ‘healthier ageing’ makes some assumptions that reflect the intent of the scenario. Specifically it assumes:

- A 30% decrease in the rate at which those with some functional impairment develop severe functional impairment
- A 30% increase in the rate at which those who suffer a decrease in functional impairment recover some or all of their functioning.

This simulation explores the service and workforce demands that could result from the implementation of a comprehensive shift in service configuration implied by scenario 1. These projections also assume that it would take 5 years to fully implement the changes.

In addition, this scenario does not incorporate role substitution or productivity increases. The focus of the simulation outputs, at this point is to highlight the shifts that could occur simply through that impacts that ‘Healthier Ageing’ could have on the demand for health services. The roles and the staff patient ratios are assumed to remain unchanged.

The following table shows the impact of the changes noted above on the numbers of people with different levels of functional impairment.

<table>
<thead>
<tr>
<th></th>
<th>2010 baseline</th>
<th>2016 baseline</th>
<th>2021 healthier ageing</th>
<th>2026 healthier ageing</th>
</tr>
</thead>
<tbody>
<tr>
<td>65+ with no functional impairment</td>
<td>250,654</td>
<td>260,630</td>
<td>304,349</td>
<td>368,514</td>
</tr>
<tr>
<td>65+ with some functional impairment</td>
<td>193,405</td>
<td>240,653</td>
<td>235,379</td>
<td>274,773</td>
</tr>
<tr>
<td>65+ with severe functional impairment</td>
<td>127,874</td>
<td>155,976</td>
<td>153,654</td>
<td>180,009</td>
</tr>
</tbody>
</table>
### Table 3: Scenario 1 Healthier Ageing - Impact on Levels of Functional Impairment

Using the assumptions noted above the simulation run ‘Healthier Ageing’ reduces the increase in older people with some or severe functional impairment, from 2010 to 2026, from +63% to 55% - a combined total of nearly 24,000 fewer people with disability.

When the changes described in the ‘Healthier Ageing’ scenario are translated into service demand within care facilities, the number of people requiring long-term care in residential facilities, in 2026, reduces from around 50,000 to 45,000. This is significant in that the Thornton report projected a similar increase in the numbers entering aged residential care of around 53% in scenario A. The Healthier Ageing scenario projects a lesser growth of around 38%. The impact upon workforce requirements indicates that, under this scenario with no change in the model of care, there would be a commensurate decrease in the number of additional nurses and caregivers required in aged residential care reducing from an additional 54% to an additional 38% between 2010 and 2026.

![Figure 18: Impact of Scenario 1 on Workforce Requirements in Long-term Residential Care Facilities](image)

The impact of these assumptions on service demand and workforce requirements within acute hospitals is shown below:

By 2026 the numbers of those over 65 admitted to an acute hospital would be 578,000 rather than 605,000 in the baseline scenario (an increase of 54% rather than 61%). The consequence of this would be that the demand for geriatricians in acute hospitals reduces from 58 to 53, nurses in continuing care from 7,000 to 6,700 and nurse practitioners working with older people from 21 to 20. In reality this reduction is unlikely to eventuate, as the skills possessed by these people would be needed to support services outside the hospital – the central idea behind theme 1.
What the simulation under the ‘healthier ageing scenario’ shows is that despite a significant reduction in the rates at which older people develop increased functional impairment and a significant increase in the rates at which older people recover their functioning, the impact upon workforce is not substantial. The significance of this is that to make significant changes in workforce requirements, it will also be important to look at role substitution as the scenario indicates that it will be very difficult to make significant reductions without compromising current levels of service provision by simply trying to reduce demand.

5.3 SIMULATION 3: ‘BEYOND THE HOSPITAL’

The baseline simulation was based on current ratios of staff to those that they care for and simply projected forward in line with population projections. Simulation 2 was based on shifting the rate at which people developed and recovered from functional impairment, thereby having an impact upon the demand for aged care services. Simulation 3 uses the same demand assumptions as scenario 1 but proposes a shift in which an increasing number of older people, with acute care needs, get treated in primary and community care settings rather than being admitted to hospital. This simulation includes three separate runs incorporating small, medium and large shifts. The assumptions underlying these are shown below:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Functional Impairment Admitted to Acute Hospital (pct of baseline)</td>
<td></td>
</tr>
<tr>
<td>Small shift</td>
<td>10% shifted to primary and/or community setting.</td>
</tr>
<tr>
<td>Medium shift</td>
<td>20% shifted to primary and/or community setting.</td>
</tr>
<tr>
<td>Large shift</td>
<td>50% shifted to primary and/or community setting.</td>
</tr>
<tr>
<td>Some Functional Impairment Admitted to Acute Hospital (pct of baseline)</td>
<td></td>
</tr>
<tr>
<td>Small shift</td>
<td>5% shifted to primary and/or community setting.</td>
</tr>
</tbody>
</table>
Medium shift  10% shifted to primary and/or community setting.
Large shift  20% shifted to primary and/or community setting.

Shifting the percentage of people with no functional impairment and some functional impairment who receive their acute care in a hospital setting, even by small amounts can have a significant impact upon the numbers of people entering hospital and community-based care facilities. The following graph shows the numbers of people who could receive their acute care outside of the hospital setting given the small, medium and large shifts noted above:

Assuming such a shift takes around 5 years to fully implement the number of acute admissions of those with no or moderate functional impairment would range from just under 30,000 a year to over 135,000. These people would not only require good acute care but the availability of short-stay facilities to support their recovery and rehabilitation. Given that current projections for the aged-residential care setting are of around 50,000 patients by 2026, even the small shift project would require a 50% increase in capacity within community care facilities to cope with the numbers. The following graph shows the impact that these shifts would have on those 65+ admitted to an acute hospital.

Figure 20: 'What if' projections of shifting some acute care to community and primary care settings

Figure 21: 'What If' projections of hospital admissions of shifting some acute care to community and primary care settings
“Large shifts” in acute response, as modelled here, could potentially reduce the increase in acute hospital admissions from +230,000 (+61%) to +155,000 (+41%); that is, 75,000 fewer admissions per year.

While these numbers may seem large and the plausibility of shifting such large numbers of acute admissions out of an acute hospital setting seem doubtful, the ‘what if’ projections produced by the “large shift” are still less than required to meet a sustainable funding path based on a 30% growth over the simulation period.

Assuming those shifted out of hospital would need to receive their acute care in a community based care facility, the implications for nurses and caregivers working within care facilities are considerable. Currently these are the workforce associated with aged residential care but in utilising the term ‘care facility’ we are proposing a significant growth beyond what is currently considered within long-term residential care, and quite a different orientation and skill set of the personnel.

The numbers not only indicate a significant change to the way we think about care facilities for older people but raise questions about the feasibility of training such numbers, even if the funding were available.

5.4 SIMULATION RESULTS: KEY CONCLUSIONS

As noted above all simulation projections should be viewed as a ‘plausible futures’ not as a precise prediction. Within this proviso the following conclusions can be made:

- The number of people over the age of 65, with significant degrees of functional impairment is, assuming no change to current trends and services is going to increase by over 60% over the next 15 years.

- Strategies aimed at ‘healthier ageing’ could potentially reduce this rise to around 55%.

- The improved preventative and rehabilitation care inherent within the ‘healthier ageing’ strategy could reduce the projected increase in admissions to long-term residential care by 27% over the next 15 years.(an increase of 13,000 (41%) vs 18,000 (56%) in 2026)

- While making large shifts in the number of older people with acute care needs being treated in primary and community care settings rather than being admitted to hospital can significantly reduce hospital discharges, it requires a large ‘rethink’ in what we currently consider to be community-based care facilities. There would need to be a significant increase in both staff and service options focusing on short-term and rehabilitative care.
6. SUMMARY OF CONCLUSIONS

- To have an aged care sector that is able to provide support services, to at least the current level and within a sustainable funding path, significant improvements will have to be made in preventive and rehabilitative care AND significant numbers of older adults will need to receive care in a community and primary care setting. These changes will be necessary to reduce an unsustainable increase in demand for long-term aged residential care and admissions to acute hospital.

- In designing a sustainable workforce we need to understand the workload that results from the interplay between the needs of older people, the services and the way they are configured to respond to those needs, and the workforce that is able to deliver those services. The phase 1 report provides a step towards understanding this interplay; however, more research is required to both validate the current model and to provide critical data where none currently exists or is unreliable.

- One of the major drivers of health service utilisation is the level of functional impairment in the over 65 population. However, despite it being the largest modifiable risk factor, little is known about the actual numbers and services associated with different levels of functional impairment. If, as part of future strategies the health sector is to manage the growth in demand further research in this area is needed. An exception to this is the OPAL study (Boyd, M., et al 2008) which does provide some data on levels of functional impairment in residential care.

- The funding and focus of residential care is currently on long-term care and support. Much more focus needs to be directed to preventative and rehabilitative care, with development of short-term service options. To support this shift in thinking, this report refers to ‘care facilities’ to indicate this broader role.

- We do not have to equate ‘trend with destiny’ in the care of older people. Modelling does indicate that it is possible to lower the rate of increase in older people accessing health services. For example, the improved preventative and rehabilitation care inherent within the ‘healthier ageing’ strategy could potentially reduce the number of older people needing long-term aged residential care in 2026 from 50,000 (53% increase, as also predicted in the Grant Thornton Report) to 45,000 (increase of 38%).

- Large shifts in the number of older people with acute care needs, being treated in primary and community care settings rather than being admitted to hospital, can also significantly reduce the need for admissions to acute hospitals. Modelling “large” shifts in where acute response services are provided can potentially reduce the projected
increase in acute hospital admissions for older people from 230,000 (+61%) to 155,000 (+41%) by 2026.

• Furthermore, when this scenario is combined with changing the nature and location of the service and/or the workforce providing the care, quite different future scenarios can be envisaged. However, this requires a large ‘rethink’ in what we currently consider to be community-based care facilities. There would need to be a significant increase in both staff and service options focusing on short-term and rehabilitative care and changes in competencies.

• Shifts in focus and deployment of skilled clinicians from DHBs to primary and community settings where they will support large numbers of formal and informal care providers will be a key strategy.
7. RECOMMENDATIONS

It is recommended that:

• An increased focus is directed to prevention and rehabilitative service options for older people, emphasising short-term interventions focused on maximising the potential for independence.

• More work is done to support formal and informal caregivers, especially in helping older people to maximise their own potential. It is recommended that specific training and development be provided to these groups with a ‘career path’ for formal caregivers who make up the bulk of the aged-care workforce.

• Clinical specialists in the needs of older people be seen as one of the major resources available and they need to focus on supporting increased knowledge and skills of other health and support workers in community and primary care. (“leveraging”) To do this the constraints that ‘tie’ people to a facility such as an acute hospital need to be looked at to facilitate the ‘transfer of expertise’ across different service locations.

• Service and facility design within acute care to be geared up to the needs of their major patient group i.e. people over the age of 65.

• Older people, because of their multiple needs, cut across many specialities and service locations. A key to enabling integrated care for older people will be to design and pilot a ‘network information strategy’ based on ensuring ready access to all data relevant to the individual person by anyone who needs this to provide optimal care.
8. THE WAY FORWARD

The work to date has confirmed that continuing the current arrangements without change is untenable. It has also identified considerable potential to improve the system in ways which not only are more resource-realistic but more importantly enhance the lives of older people. This will require multiple initiatives, well-orchestrated so that they support each other and existing systems. These are generally focused on a change to the approach to care of older people which will require significant changes to the model of care and skills and attitudes of the health workforce. Greater focus on individualized care plans and integrated implementation will be essential. These will need to be supported particularly by appropriate funding mechanisms and information and communication technology.

The overall purpose of the Aged-Care Review is to develop a comprehensive understanding of future workforce needs, taking into account new possibilities in the way we think about and resource aged-care in New Zealand. These new possibilities may include different mixes of people providing care, shifting tasks from one category of personnel to another, and possible creation of new categories of aged-care worker. It will likely also include shifting where care takes place and the manner in which care is provided.

The phase 1 report provides a baseline from which this further work can be undertaken.
READING SYSTEM DYNAMICS MODELS

Most languages make a distinction between nouns and verbs. Nouns name things; people, places and abstract ideas. Examples include patients, doctors, beds, money, knowledge and morale. Verbs convey actions or activities such as treating, referring, planning or screening. These are the ‘stocks’ and ‘flows’ of the SD modelling language and are the fundamental elements upon which even the most complex systems can be described. The stocks are the nouns that describe things and the flows are the verbs that convey activity.

In SD we think of stocks as containers, like bathtubs. In a bathtub, at any stage in time there is some level of water in there, even if that level is zero. A bathtub also has a capacity; there is only so much water you can get in there and when that capacity is exceeded the water just overflows so nothing is added to the stock of water in the bathtub. Stocks are represented in the SD language as rectangles. To get water into and out of the bathtub a flow is needed. Flows are the verbs - the actions and activities in the system. The flow icon has three components that you need to understand. The first is the ‘pipe’ through which things flow. The second is the arrow which shows the direction of the flow. In this example the flow is from left to right. The third is the ‘tap’ which regulates the flow. ‘Turning’ the tap increases and decreases the rate of flow through the pipe. The cloud " at each end simply denotes the boundaries of the model.

If we are to move things and information from one element in the model to another we need to connect them. This is done with the arrow. The example below shows how a stock and a flow could be connected. The arrow shows the direction of the information; in this case from the stock of people with ‘no functional impairment’ to those with ‘some functional impairment’.

So far we have stocks and flows. However, if ‘things’ are to move between them we need to provide some inputs; information about the connections and how the rates of flow in the system are affected. We need something to turn the tap. In this example, the model highlights one factor that increases the risk of developing some functional impairment. In the example below as more people have acute episodes leading to hospitalisation the more people with no functional impairment will move to the stock of those with some functional impairment.
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