
Ministry of Health

Southern District Health Board Strategic Services Plan

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Introduction

The purpose and scope of this report

1. We have been commissioned by the Ministry of Health to support the strategic planning stage for the redevelopment of Dunedin Hospital Services. This report, the Strategic Services Plan, is the first of three stages and separate reports and sets the scene for further more detailed clinical service planning.
2. The Strategic Services Plan takes a whole of system view across the Southern district to broadly define the key current issues with health service delivery, and to pose future viable solutions that are clinically and financially sustainable for Southern DHB.
3. In developing this report, we have consulted widely with clinicians and management across the district, including staff at rural hospitals, the Primary Health Organisation (PHO) and general practice, Dunedin and Invercargill hospitals, the University of Otago, Otago Polytechnic and private hospitals. We have reviewed key strategies, documents and reports and toured Dunedin Hospital, Invercargill Hospital and each of the six rural hospitals within the district. We have updated the demographic profile for the district, explored comparative trends and levels of service delivery, forecast growth and drawn upon Health Round Table data to benchmark and compare quality measures.
4. Two themes emerged from the interviews:
 - (a) The interface between the six rural hospitals, the Dunedin and Invercargill hospitals and primary care, and
 - (b) The nature of the relationship between the University of Otago (principally the School of Medicine) and the DHB in terms of the provision of secondary care services.
5. We formed two separate groups to canvass both of these themes, to explore the issues in more depth, validate and challenge our findings and arrive at possible solutions. These two groups met separately on two occasions. The two groups came together on a third occasion to review the draft Strategic Services Plan. Subsequent to that meeting, further comments were received and the final statement prepared.
6. The scope of this report and our approach is further detailed in the supporting appendix document.

Guide to this report

7. In order to keep this report succinct, we have moved material to appendices that are included at the end of this report. First, we describe the context within which the DHB is operating and provide headline statements on:
 - (a) The current and projected demographics, population and catchment profile;

- (b) The organisation's strategic goals, priorities and service directions, and
 - (c) The current infrastructure profile.
8. We then reflect our findings from the analysis, site visits, interviews and meetings with seven themes and provide strategic directions for each. Finally, we conclude the report with options for making change happen.

An already active DHB in a challenging environment

Significant programmes of activity

9. Southern DHB has a significant programme of work underway to merge and align the clinical, management and support functions of the two predecessor DHBs into one DHB, and to refresh and modernise models of care and models of hospital organisation. There has been significant streamlining of the executive and management teams, and efforts are underway to integrate services across the two sites. There is considerable effort in implementing the **Southern Strategic Health Plan – Piki te Ora** – aiming at providing for a single Southern health planning framework that sets the direction for realigning all of the DHB’s work programmes.
10. There are other significant workstreams underway across the DHB. The Commissioners have their work programme **‘Owning our Future’** in place and with a culture change project involving patient workshops called **‘Southern Future – it is up to us’**, the first phase of which was the ‘In Your Shoes listening series’ – significant effort is being put into making the culture of the organisation more patient oriented. The DHB has adopted “Health Pathways and Xcelr8” – a managed innovation project tool. On top of this, the Southern District’s alliance, Alliance South and its various Service Level Alliance Teams (SLATs) are beginning their work programmes, and other significant service development projects are underway such as a major radiology project and a capital spend to support urgent capital works including an Intensive Care Unit (ICU) renovation.
11. Southern DHB’s strategic goals can be viewed within a cascading suite of planning documents.¹

¹ Southern DHB. (2015). *Southern Strategic Health Plan*. Retrieved from: <http://www.southerndhb.govt.nz/pages/sshp>



12. The capacity to make change happen in the Southern DHB and in Dunedin in particular is less than in other DHBs. The medical staff are committed in several directions, with some having commitments to private clinics and teaching appointments as well as working in or around the hospitals. A clinician's feedback indicates the perceived or actual conflicts of interest and opaque allocation of time by colleagues are both issues needing to be addressed.
13. The merger of the two DHBs has not brought about the anticipated gains, which were thought to be substantial. As one clinician notes in feedback, Invercargill Hospital and Dunedin Hospital are distinctly different hospitals "with overlapping but not congruent roles, largely separate populations and self-sustaining clinical services in the mainstream specialties."
14. In some clinical areas there has been considerable change. For instance, a substantial reduction in bed numbers in AT&R services and reductions in length of stay in general medical and general surgical specialties has taken place. One of the Dunedin wards has been reorganised from a series of smaller wards into one (with a more flexible medical ward of 54 beds). However, merging two district health boards is a long and difficult task. As with any change project, there is a strong tendency to keep on doing what has been done before, and most of what happens in the Southern DHB is an evolution of what has happened before. In this context, this Strategic Services Plan seeks to build on existing work and further amplify direction rather than displace existing momentum. The supporting appendix document provides more detail on the DHB's organisational vision, strategic goals, priorities and actions.
15. The ability of the DHB to manifest changes is, however, not up to the current challenges yet alone the future challenges. As one clinician notes in his feedback on the draft document:

" Culturally there remain several distinct 'tribes' across the District and while these enduring differences are perhaps more profound among the hospital medical staff, they are also strong in primary care. Combining to create patient focused services requires strong unified leadership across the District at a clinical level. "

Forecast demographic pattern

16. While the total population of Southern DHB is not projected to have significant population growth, sub-regions within the district are projected to have quite different population patterns – both in terms of growth, decline and population composition:

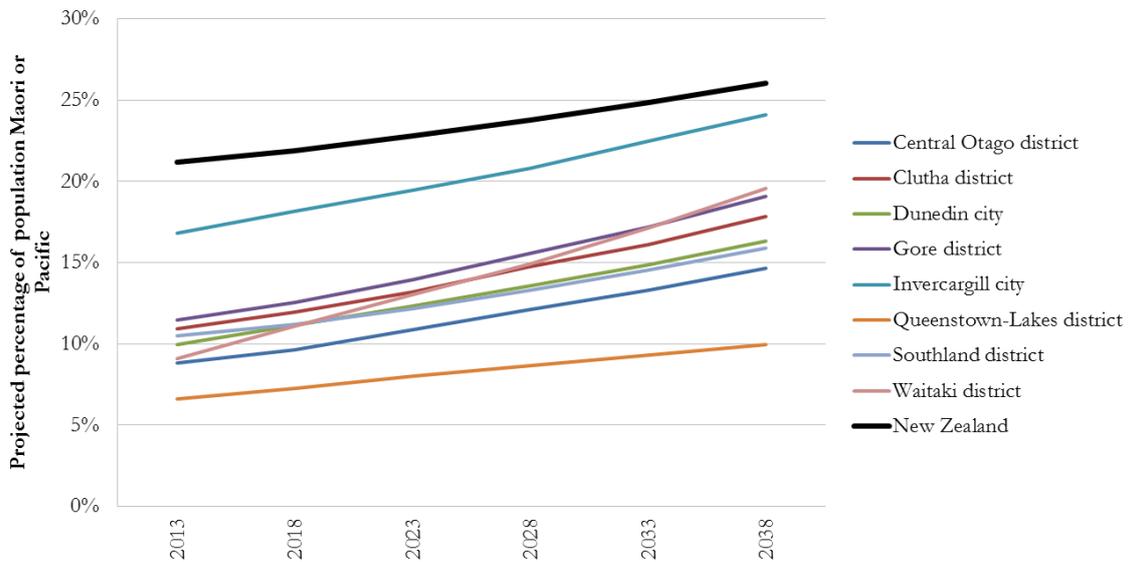
- The population of Queenstown-Lakes district (which covers Queenstown and Wanaka) is projected to grow to the size of Invercargill city.
- The populations of Clutha and Gore districts are projected to decline over the next 30 years.
- The populations of Southland, Invercargill city, Waitaki, and Dunedin city are projected to have very low growth.
- The population of Central Otago is projected to have moderate growth (but less than the national average).

17. With the exception of Queenstown-Lakes, the territorial authorities within Southern DHB currently have a higher proportion of their population aged 65+, compared to the New Zealand average. Both currently, and under the population projections through to 2043, Central Otago has, or is projected to have, the highest proportion of population aged 65+ within the district. Currently one in five Central Otago inhabitants is aged over 64 years. More than one in every three Central Otago inhabitants will be aged over 64 years by 2043.

18. However, the proportion of inhabitants aged 65+ is projected to approximately double in all three areas over the next 30 years:

- In the Greater Queenstown area, the proportion aged 65+ is projected to grow from 9 percent in 2013 to 21 percent in 2043.
- In the Greater Wanaka area, the proportion is projected to grow from 15 percent in 2013 to 27 percent in 2043.
- In Central Otago, the proportion is projected to grow from 21 percent in 2013 to 37 percent in 2043.

19. Southern DHB has a lower proportion of people who identify as Māori, Pacific, and Asian compared to New Zealand as a whole, although there are pockets within the district with a substantially higher Māori population. All three of these ethnic population groups are projected to grow – both in absolute terms and as a percentage of the population. However, as this growth comes from a relatively low base, by 2030/36 Southern DHB is still projected to be less ethnically diverse than New Zealand currently is nationally, as shown below.



Population health needs

20. In 2014, Southern DHB commissioned Health Partners to undertake a Health Needs Assessment. The box below sets out the notable findings from the assessment, as developed by the report’s authors.²

² Southern DHB. (2013). *Health Profile*. Retrieved from http://www.southerndhb.govt.nz/files/14975_2014103085650-1414612610.pdf

Chronic disease

- *Rates of chronic disease in Southern DHB residents are similar to the national average – diabetes, cardiovascular disease, stroke, cancer, asthma and chronic obstructive respiratory disease. As obesity rates rise, diabetes prevalence will worsen – high rates of hospitalisation are already evident for people in quintile 5 areas and Māori people living in Southern DHB.*

Low rate of avoidable hospitalisations, but increasing rate of ED attendances

- *Overall planned and unplanned hospitalisation rates were similar to national averages. Southern had one of the lowest adult ambulatory sensitive (ASH) rates in the country – events that are more likely to be avoided through good preventive care. Low ASH rates are sometimes considered a marker of good primary care. Around 11% of all unplanned medical-surgical admissions were considered to be ASH in Southern, compared with 15% nationally.*
- *Child hospitalisation rates are consistent with the deprivation and ethnicity proportions in the DHB.*
- *ED attendances for Southern residents have been rising faster than population growth, suggesting potential barriers in accessing primary care.*

Some key health outcomes are poorer than what might be expected given their population

- *Life expectancy at birth for people living in Southern DHB was 81 years for the years 2010 to 2012, slightly less than the New Zealand average of 81.2 years. Given the relatively low deprivation levels in Southern DHB a result higher than the New Zealand average might have been expected.*
- *Males continue to lag females in life expectancy at birth - 3.9 years behind for Southern. While the gap has decreased over the last decade there remains a significant health shortfall for men in Southern DHB.*

Maori health

- *If Māori living in Southern had a life expectancy similar to that of Māori nationally there would be a 7.4 year shortfall for males, and a 7.2 year shortfall for females.*
- *Amenable mortality rates are in line with the average deprivation level. Māori results for Southern are better than for Māori elsewhere in the country, but remain twice as high as their non-Māori counterparts.*

Significantly higher rates of colorectal cancer

- *Cancer registration rates were similar for Southern DHB residents compared to national rates, apart from colorectal cancer which had a statistically significant higher rate.*
- *Colorectal cancer overall showed a significantly higher rate of mortality and hospitalisation for Southern residents compared with the New Zealand average.*

High rates of mental health concerns

- *Southern DHB respondents to the New Zealand Health Survey reported higher anxiety or depressive disorder results than the national average, 8% compared with 5.7% of the total population. An increase in the prevalence of psychological distress and common mental illnesses were also noted, but in part may be due to sampling variation and perhaps post-earthquake migration. Overall access to mental health services for Southern residents was high compared to the rest of New Zealand. Within Southern high mental health service use is apparent for Dunedin residents, but this may relate mainly to the residential location of the more severe mentally ill patients.*

Most leading causes of avoidable mortality relate to external causes or risk behaviours

- *The leading causes of avoidable mortality for Southern DHB residents aged 0-74 compared to the average for New Zealand were similar: ischaemic heart disease, suicide and self-inflicted injuries, lung cancer, and motor vehicle accidents.*

The population has high rates of key risk factors

- *While the rate of tobacco smoking is falling in Southern DHB it is lagging the falls seen elsewhere in New Zealand. Census 2013 results suggest 15.6% of Southern DHB adults smoke tobacco daily compared to a New Zealand rate of 15.1%, with rates higher in Southland than Otago. Māori adults in Southern have nearly twice the smoking rate of their non-Māori counterparts at 29.9%, though this is lower than the 32.7% overall Māori result nationally. Useful falls in smoking rates were seen for Māori and Pacific adults in Southern. Smoking remains the single largest cause of premature mortality and ill health in Southern DHB, but will soon be overtaken by obesity and nutrition-related conditions.*
- *The prevalence of obesity in Southern DHB was higher than the national average at 29.8% of all adults (aged 15+) for 2011/12, showing a 4% increase from 2006/07. There are estimated to be more than 13,000 morbidly obese people in Southern DHB - 6.6% of the adult population aged 15-64, less than the national rate estimated at 8.2%.*
- *Overall a quarter of adults (25.1%) in the Southern district population in 2011/12 were estimated to be hazardous drinkers, significantly higher than the national average of 17%, and higher than any of the other large DHBs. Hospitalisations for alcohol-attributable conditions rose significantly over the past five years.*
- *Two-thirds of Southern DHB adults (67%) reported meeting recommended physical exercise levels in 2011/12, significantly higher than the national average – the only major population risk factor to be better than the national average in the Health Survey data.*
- *Nationally Māori have higher proportions at risk of smoking, hazardous alcohol drinking, obesity and poor nutrition. This is likely to be reflected in Māori living in the Southern DHB area.*
- *Pacific peoples also have higher proportions at risk of smoking, hazardous alcohol drinking, obesity and poor nutrition for New Zealand as a whole. This will likely be reflected in Pacific living in the Southern DHB area.*

Declining rate of access to primary care

- *Primary care enrolments were relatively low in Southern DHB residents, and the proportion of the population attending a general practitioner in any one year has fallen over the last 5 years. Some 30.3% of Southern residents reported unmet for primary care in the past year, compared with a national average 26.6%. This is despite Southern district having more general practitioners than the national average approximately 1,000 patients compared with 1300 patients per full-time equivalent practitioner nationally. Enrolment in a PHO is lower for Maori than non-Maori (at 79% and 93% respectively for the April – June 2016 quarter)³.*
- *Primary care generally compared well for Southern DHB practitioners compared to national averages on some key indicators. Southern DHB in 2011 had an average of 411 patients per 1000 aged 65 and over being dispensed five or more medicines per quarter – that is 41% of the population aged 65 and over. This placed the DHB second highest in the country, well over the national average of 37%.*

High rates of aged residential care (ARC) use

- *Around 6% of the Southern population aged 65 and over are in Aged Residential Care (ARC – rest homes and hospitals) – significantly higher than the national average of 5.2%. This is the third highest rate of any DHB. Rates of utilisation rise sharply by age - at present around 10% of those aged 75 and over and 28% of those aged 85 and over living in Southern are in ARC, compared with 10.6% and 25.2% nationally respectively.*

Generally low rates of fertility

- *Southern women have a relatively low fertility rate at 1.66 births per women, compared with the national average at just over 2. Maternity clinical outcome indicators compare well nationally for Southern mothers. The rate of teenage births is low at 16/1000 15-19 year olds, but conceals higher rates of around 30/1000 for Māori and Pacific teenagers, and teenagers living in Gore and Southland. Abortion rates are relatively low.*

Infrastructure

21. Southern DHB operates healthcare facilities at a number of locations throughout the Southern District. Table 1 below provides an overview of all healthcare facilities used to provide services to people living in the Southern DHB catchment, regardless of ownership model. While the majority of the capacity comes from Southern DHB facilities, there are also a number of facilities run by community trusts and private companies.

³ <http://trendly.co.nz/Home/DHBIndicatorReport>

Table 1: Health facilities in Southern DHB catchment area

	Certified beds ⁴	Certified services ⁵							Radiology ⁶				
		Medical	Surgical	Children's	Geriatric	Psycho-geriatric	Mental health	Intellectual	Maternity	X-ray	Ultrasound	CT	MRI
DHB hospitals													
Dunedin Hospital	400	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Southland Hospital	176	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Wakari Hospital	120	✓					✓	✓					
Lakes District Hospital	14	✓							✓	✓			
NGO/trust-run hospitals													
Oamaru Hospital	44	✓			✓				✓	✓	✓	✓	
Dunstan Hospital	24	✓								✓	✓	✓	
Gore Hospital	20	✓							✓	✓			
Clutha Health First Hospital	17	✓							✓	✓	✓		
Maniototo Hospital	15	✓			✓				✓	✓			
Private hospitals													
Mercy Hospital Dunedin	66		✓							✓	✓	✓	✓
Southern Cross Hospital Invercargill	26	✓											
NGO/trust-run maternity facilities													
Winton Maternity Centre	6								✓				
Lumsden Maternity Centre	5								✓				
Charlotte Jean Maternity Hospital, Alexandra	4								✓				
Tuatapere Maternity Unit	4								✓				
NGO-run hospices													
Otago Community Hospice	12	✓											
Hospice Southland	8	✓											

⁴ Ministry of Health. (2015). *Certified providers*. Retrieved from <http://www.health.govt.nz/your-health/services-and-support/certified-providers>

⁵ Ibid.

⁶ Southern DHB. (n.d). *Radiology Systems Project: Evaluation of current radiology provision for the Southern Health District*.

Dunedin Hospital sites

22. The Dunedin Hospital campus includes six buildings with construction dates ranging from 1935 -1993. As shown in Table 2 below, several of these buildings have very low remaining service life.

Table 2: Overview of buildings in Dunedin Hospital Campus⁷

Building	Constructed	Remaining Service Life ⁸
Psych Services Building	1935	1.3 years
Fraser Building	1940	0.46 years
Children's Pavilion	1945	-0.5 years
Clinical Services Building (CSB)	1968	2.6 years
Ward Block	1980	24 years ⁹
Oncology	1993	-

23. While the Ward Block has been assessed as able to be relifed, two engineering firms have assessed the Clinical Services Building in the past five years and both concluded that it was not able to be relifed.¹⁰
24. Wakai hospital is a significant site in Dunedin with 79 mental health, addictions and intellectual disability inpatient beds and a large number of outpatient and community services.

⁷ Southern DHB. (2014). Brief for Capital Investment Committee – Dunedin Hospital Campus.

⁸ Remaining Service Life estimates as at March 2014 have been converted to equivalent values as at March 2016.

⁹ Beca. (2014). *Peer review of the 2012 Dunedin Hospital RELifing Analysis with commentary on the future viability of the Clinical Services Building.*

¹⁰ Ibid.

Strategic directions

Strategic direction 1 – Build strong primary and community care

25. Primary and community care services need to be front and centre of health service delivery across Southern DHB. However, primary care across the district has a chequered history with high points such as a very strong general practice (Morningson Health Centre), the recent development of an integrated practice (Invercargill Medical Centre), system developments through various SouthLink subsidiaries and extensive expertise in rural general practice.

An example of primary care led change - Invercargill Medical Centre (a SouthLink practice)

- Invercargill Medical Centre is a merger of 7 practices in a modern, fit for purpose facility. The Centre provides services to 13,500 patients with 12 GPs (9.1 FTE) including 1 nurse practitioner (working 0.4 FTE). They offer organised consultations, a range of screening and immunisations, and operate an acute observation facility with three beds.
- The practice is seeking Cornerstone accreditation with the ambition of becoming a training practice and is likely able to offer an excellent primary care experience for PGY1 and PGY2 community runs.

We have great nursing staff. We take student nurses here – hired the last two as registered Nurses and created a position for one of them. We take them because of quality, and as a good mix for the team. For us it is all about building a good team.

We have (nurse) champions for diabetes, CVD, smears etc. Started doing advanced clinical assessment papers.

Our nurses tend to do shift times to cover clinics. We are looking to doing a Saturday clinic every month. We are targeting hard to reach patients – smears, and CVD patients. Two doctors do a Wednesday 8pm clinic with a nurse, and looking to start some nurse clinics. We didn't know what the demand would be like – now we will have nurse appointments as we know demand is there.

- The Centre is working with the PHO and looking to continue to extend its services ...

The PHO is very good with us, weekly with [name removed], have the long-term condition nurses through. Have care plus and we are working with GPs on using it and understanding how to use it.

We are looking at eczema clinics with a nurse GP team, growing into IV cellulitis – but not well backed up over the weekend and can't get extra doses come over the weekend. We missed the training, for infusions, want the whole team updated before we start. WellSouth knows we have a need for this training.

26. On the other hand, there is an ageing workforce, a relatively entrenched and outdated model of care, a general lack of coordination between primary and secondary care and historical contract and relationship issues. Therefore, the degree to which primary care will reposition their role and approach within the system will vary.
27. For a number of these general practices the (typically GP) owners may lack the incentives and/or 'know how' to change their business models. Changing business models may mean expanding, delivering services more flexibly and being proactive with patient needs, whilst using a wider workforce including nurse led clinics and allied health specialists. Compared to urban centres, rural general practices may face constraints of scale, small populations and high travel times.
28. Health systems are clear that primary care is the mainstay of health care. Increasingly, these systems recognise they need to invest more in primary care to slow the demand for expensive and less responsive hospital based services. The investment we see in other DHBs is similar but greater than what we have observed in Southern DHB – with Senior Medical Officers (SMOs) working in partnership with general practice to manage disease outside of the hospital, through (inter alia) the use of predictive risk models to identify vulnerable patients needing tailored packages of care, care pathways (e.g. HealthPathways) and enhanced discharge packages to reduce the rate of patient readmission. In other areas primary care has also been assisted to re-organise into larger operating units to offer enhanced services such as extended hours, medical infusions and short-stay observation beds.

In the future, DHBs are looking to develop the capacity of all aspects of the health workforce to support patients in the community and to help patients and their families to self-manage their needs for as long as possible. This long view is only possible with a primary and community care orientation based around multi-disciplinary teams, working outside the walls of a hospital.

29. Unfortunately, within Southern DHB the implementation of HealthPathways has been patchy and slow. The root cause of this slowness is now recognised as a misconception of the programme as a medical editing exercise rather than a change programme that requires resource and investment, and is being re-visited as the latter. From a health system perspective, tools such as HealthPathways help to streamline the primary care/secondary care interface and enhance the patient journey. The system is more geared so that patients are maintained in the community longer, specialists have diagnostics available at first specialist assessments, and the workforce is more productive and technically efficient.
30. Clearly, Alliance South with its various SLATs is making in-roads with a view to making practical progress and thus demonstrating trust and consistency of action. It is early days for these teams and they will be judged on what they achieve.
31. The emergency department (ED) is often over used during the day and early evening. More often than not, for low acuity patients the ED is the wrong place to manage patients and disrupts continuity of care. Largely, without realising what has happened in Dunedin, but also in Invercargill, one clinician points out:

“GPs have simply withdrawn from providing accessible and affordable after-hours care and have implicitly and sometimes explicitly instructed patients to present to the ED to receive such care. This has spilled over into “in-hours” acute care access to timely appointments in general practice which has also worsened for patients resulting in more ED attendances during the day” [The clinician goes on to note one major exception and exemplary example being Mornington Health Centre.]

32. Over time, rural hospitals will likely be seen as extended primary care organisations with integrated acute management services, extended diagnostics and with the ability to manage patients at an appropriate level of acuity locally with integrated rural hospital specialist capacity. With the ageing population across Central Otago in particular, these hospitals will be likely to be even busier than they are now.

Strategic directions:

- (a) Actively support aggregation of general practices into larger groupings and invest in enhanced models of primary care.
- (b) Proactively deliver well-organised and connected primary care through the development of leadership positions and networks.
- (c) Consider comprehensive wrap around services for highly complex patients including partnerships with community or hospital based pharmacy.
- (d) Consider a clinically-led review of how Health Pathways are determined, marketed and utilised, and establish near term priorities for further expansion of pathways.

Strategic direction 2 – Being clear about what the health system needs from rural hospitals

33. The health system should be clearer about what it needs from rural facilities in the context of services offered across the region. Inevitably, with those that are operating as community trusts, there will be a degree of autonomy for them. However, greater clarity of what is needed would be desirable to identify service gaps and reduce inappropriate variation and duplication.
34. To a certain degree service provision in rural hospitals have come about through wanting to retain what there is rather than necessarily looking at what is needed. Some of the rural hospitals show admirable ability to be flexible in the manner in which they attract and maintain relationships with specialists for services, and their entrepreneurship in building the commercial footing of their organisation. Without a doubt, the more commercial the rural hospital trust then the more resilient the organisation is to change.
35. Where these rural hospitals will be most successful and most resilient is likely to depend on the extent to which they are able to integrate with local primary care and aged residential care. Primary care provides a sound base of patient volumes, strengthens the workforce and allows extended services and integration of services across primary care.
36. There is a tendency for the rural hospitals to want to step up to higher levels of care such as high dependency units (which generally have very high nursing ratios), EDs (with a high level of patient risk and a need for a well-trained and stable workforce) and high end scanning (requiring a skilled, scarce workforce). At the same time, there is a desire to hold extensive bed capacity with each rural hospital hoping to retain, essentially, a hospital ward of between 20 and 30 patients, partly incentivised by the DHB funding bed days. The levels of acuity managed in these beds is appropriately lower than we would expect to see managed in Invercargill and Dunedin and likely these patients would be managed in the community in many areas of the country with equal or better results.
37. Some of these rural facilities experience a real clinical need to provide high dependency care for patients with complex needs. The need for this higher level of care and expertise increases the more distant the facility is from a base hospital, and is most closely felt in a facility such as Dunstan which has to contend with both distance and an ageing population. Even in Dunstan, however, there is confusion between a desire to hold beds and a need to offer complex medical services; the first is not essential to the latter.
38. Further, there is a lack of vigour in decentralising services from hospitals largely because of a view of “stranded overheads” in Invercargill, or a feeling there is a need to preserve service volumes in Dunedin to support rosters. In both situations, the reality is different; failure to deliver services close to patients is likely to lead to additional patient cost in the system, while rosters can be supported by working across a health system rather than in a hospital. As one example, one service pointed

out it could easily devolve its service to rural facilities but felt this was not allowed, “as the DHB would be left with stranded overheads”.

39. There are a number of services provided in some areas and not in other rural areas. Some of this variation is expected but some is unusual. For instance, why would follow-up chemotherapy infusions be offered in some rural hospitals and not in others? Following are examples of what we expect to see as a common offering in rural areas, whether through rural hospitals and via rural hospital specialists or with GPs and other health providers offering extended services:
- (a) There are a number of interventions usefully delivered locally such as chemotherapy infusions under the supervision of the Southern regional blood and cancer service, or minor operations for skin lesions, and (in future) injections for wet macular degeneration once an alternative work-force can be identified.
 - (b) Local diagnostics save time, enhance local care and provide visiting or remote specialists with additional clinical information. Desirably, electro cardiograms for tests of heart condition and spirometry for respiratory function need to be available. Some level of imaging such as X-ray and CT scanners (where the workforce permits), and less complex ultrasound is highly desirable. Over time, the ability to perform a wider range of scopes is likely, again depending largely on workforce availability.
 - (c) Close local management of acute presentations, aligned with integrated ED management across the region reduces transports and makes sure the patients are sent to the correct destination. Local areas need primary care acute management (largely by nurses) backed up with support from Invercargill and Dunedin EDs, close on-site integration with St John paramedic capacity, and short stay observation beds.
40. Rural hospitals operated by community trusts both under-perform and over-perform against this definition of service provision. Some usefully have stepped up to a higher level of diagnostics such as a CT scanner to help with, particularly, the correct pathway for treatment of stroke. Some of these higher level diagnostic services are difficult to sustain but may have a greater effect on health outcome than a very substantial investment in rural hospital beds. The focus on hospital services has come at the expense of development of community services designed to support patients in the home.
41. Over time, rural hospitals acting in alliance with local primary care and the DHB provide a useful point of focus for close management of disease, through proactive care of those living with chronic disease, through to prediction and close management of vulnerable patients.
42. In the next one to two decades, the population will increase and likely there will be consideration of an additional facility in Central Otago able to offer a consistent level of trauma and general medical services. As one clinician points out:

“A major trauma service is one which can provide all of the specialist investigations and treatments (mostly surgical intervention) to manage all of the likely life threatening injuries with minimal delay. All of the rural hospitals and medical

centres will act only as staging points while helicopter retrieval is being organised, and then only if they are within 20 mins or so of the scene. There would be no benefit in creating a hospital in Cromwell to bring trauma patients to in such a system.”

43. This comment is a useful challenge to the current whirlpool of thoughts about what might happen in the Central Otago region. The best place for this facility has always been felt to be in Cromwell, as it is more central. However, possibly locally based medical centres of appropriate complexity supported by world-class retrieval throughout the region are a better option.

Strategic directions:

- (a) Develop individualised plans for best use of rural hospital facilities recognising explicitly areas where views of value diverge.
- (b) Where primary care is not integrated with rural hospitals, investigate what might need to happen to make that integration possible.
- (c) Ensure the right level of care is provided in the right place including community support services.
- (d) Require a system-wide workforce planning group to address the dimensions of quality, equity and flexibility for future rural workforce.
- (e) Undertake a comprehensive review of access to basic community services including GP, district nursing, allied health followed by work up of enhanced community services delivered by locality networks.
- (f) Where there is local ward capacity, use this capacity actively to step patients down from base hospitals in Invercargill and Dunedin with attention to hospital discharge practice whilst ensuring patients are not inappropriately maintained in hospital beds.
- (g) Ensure rural hospitals are focussed on short stay care and acute care unless they are acting as rest home care.

Strategic direction 3 – Integrate acute management, paramedics and rural emergency capacity

44. The southern catchment is an extremely large one with a number of conurbations and a highly extended rural area. Patient transportation comes to the fore in this district more than any other region in New Zealand. There are many long transports by public, NGO or private transport and by air ambulance. Some of these transports are organised to and from rural hospitals. Many patients make their own way, applying for transport and accommodation assistance. There are regular transports by a three berth ambulance from Invercargill to Dunedin, and a similar service planned for Queenstown to Invercargill. In some situations, transfer to a larger base hospital following first line treatment is best for the patient.
45. Air transport has several different modes. Otago Helicopters has a fleet of advanced aircraft, with twin engines and night vision equipment, meaning that there are only a few (typically about five) days per year when helicopter retrieval is not possible. St John tasks “primary missions” from its Auckland based control centre, and the paramedic in charge decides whether an intensive care doctor accompanies the mission. Inter-hospital transfers are organised by the duty ICU consultant. Fixed wing transport for Dunedin is provided from Dunedin airport, and can be used for inter hospital transfer and ICU support.
46. There are frustrations in managing these transports in and out. Travel times are long and it is easy to get “caught short” with an ambulance transporting a patient, particularly in isolated rural areas where there may be a single ambulance service, and delayed transport can mean no emergency capability. Nurses supporting transport can face 5 hours or longer travel times. There is no agreed and formalised transfer protocol, meaning that rural hospitals can have issues transferring patients in. Transfers direct to Dunedin from the Southland catchment may need to transfer through Invercargill, and then be transferred onwards. Rural hospitals including Queenstown spend considerable time organising transfers. EDs operate separately across the region and video conferencing is not well supported even if the equipment is in place. Rural hospital beds are sometimes used to “unlock” beds in Dunedin and Invercargill, but there is potential to make better use of this approach.
47. There are missed opportunities in making use of paramedic support and general practitioner support in building resilience of the system. While not on the road, paramedics can support acute response in primary care and rural care. While visiting homes, paramedics could provide social and falls assessments.
48. The network of acute and emergency response could be better integrated with stronger clinical governance and more integrated training. In particular, remote areas often rely on PRIME trained nurses. Some of these nurses have excellent training but may be poorly supported and very isolated. Clinical governance over the network as a whole irrespective of whether it is primary care based, rural hospital based, or provided by paramedics, would be highly desirable.

49. Discharge management needs to improve significantly, particularly from the Dunedin campus. Discharges need to be planned from the time of admission. Many rural areas do not have the community care, or disability equipment, to aid a prompt return to home. Patients may be delayed in hospital, thus locking up scarce bed space through lack of equipment. The issues at discharge appear particularly concerning from Dunedin with one or two reported deaths post discharge.

Strategic directions:

- (a) Integrate paramedics with local primary care wherever possible, better using paramedic capability and training across existing services.
- (b) Link the network of PRIME response with paramedics and actively identify gaps and responses to those gaps including training issues.
- (c) Develop district protocols for transport and retrieval, and review the provision of clinical support for helicopter retrieval services.
- (d) Implement an overhaul of governance, training curriculum and network support for front line emergency response staff.

Strategic direction 4 – Improve access to imaging

50. The DHB is working on reconfiguring and streamlining access to imaging across the district so services are “clinically effective, support convenient access for patients and clinicians, best utilize existing equipment and resources and live within funding means available”.¹¹
51. Historically, referrals for imaging services would primarily be made to a provider within the Territorial Authority the patient resides in, where services are available in that area. While in theory this makes sense in terms of patient travel time, particularly in an acute situation, the reality is that long waiting times and after-hours access can prevent patients accessing the imaging services in a timely manner. Patients have been transferred to Dunedin or Invercargill for imaging due to the lack of afterhours imaging with resultant delays due to transport availability and inappropriate admission or, alternatively being stranded without transport to return home. The latter is a potentially hazardous situation for elderly and vulnerable patients in particular.
52. There is a trade-off to be made between accessing services closer to home, travel and waiting times. There are also the issues of making the most efficient use of current imaging equipment available across the district and providing equitable access to services, particularly after hours and acute services.
53. The DHB is looking to implement a central point of referral for imaging across the district, with centralised triaging and scheduling. Rather than having numerous waiting lists across the district, a coordinated approach is being considered for referring patients to where it is most timely and appropriate for the patient, with triage to ensure appropriate referral, and that the best modality is used for the clinical problem at hand.
54. The technology to support these developments is important. Invercargill and Dunedin have historically had separate Radiology Information Systems although we understand that a district wide Picture Archiving and Communication System is being rolled out from March this year.
55. The following table sets out the imaging services that are available at each hospital.

¹¹ Southern DHB presentation ‘Radiology Systems Project: Evaluation of Current Radiology Provision for the Southern Health District’.

Modality	Oamaru	Dunstan	Ranfurly	Gore	Balclutha	Lakes
X-ray Normal	8 am-5pm	8.30am-4.30pm	One day a week	9am-5pm	9am-5pm	8am-4.30pm
Call	5pm-8am	4.30pm-8.30pm	No on-call	5pm-9am	5pm-9am	
Weekends	24 hour call	24 hour call	No weekend	24 hour call	24 hour call	
Ultrasound Normal	8am-4pm	8.30am-4.30pm	n/a	One/two days p/w	9am-5pm (Mon-Thu)	n/a
Call	None	None		None	None	
Weekends	None	None		None	None	
CT Normal	8am-5pm	8.30am-4.30pm	n/a	n/a	n/a	n/a
Call	5pm-8am	4.30pm-8.30am				
Weekends	24 hour call	24 hour call				

Modality	Dunedin Normal hours	Dunedin On-call	Invercargill Normal Hours	Invercargill On-call
X-ray	24 hour cover, 7 days per week	n/a	8am-9pm Weekend 9am-9pm	9pm-8am
Ultrasound	8am-5pm	5pm-8am	8am-4.30pm (Mon-Fri)	4.30pm-8am (Mon-Fri) 24 hour weekend
CT	8.30am-4.30pm	8.30am-4.30pm	8am-5 pm (Mon-Fri)	None
DSA	8.30am-4.30pm	8.30am-4.30pm	n/a	n/a
Nuclear medicine	8.30am-4.30pm	None	8.30am-4.30pm (Mon-Fri) Operated 3 out of 4 weeks on average	None

56. There is a recognised need to make imaging service provision more resilient for today's demands and also keep up with future expected demand. Indeed it is this recognition that is behind the work the DHB is doing to reconfigure imaging services across the district. For instance, the provision of MRIs in Invercargill is fragile, with a private sector initiative employing most of the DHB's trained technicians. Imaging services in Dunedin are fragile because of a high degree of specialism in the team. The technician operating the CT scanner in Oamaru is close to retirement. These workforce issues need attending to with a view to building resilience across the network. At the same time, there should be a continued focus on the needs of the patient whilst avoiding conflicts of interest in public and competing private provision, which may further fragment an already weak workforce.
57. Increases in service demand are partly driven by the faster cancer treatment and the shorter stays in ED performance targets. We understand that inpatient (medical and surgical) and ED are the highest referrers for CT. Neurology, orthopaedics, rheumatology and cardiology are the most common referrers for MRI. Neurology is the biggest non ACC customer in MRI. There is also an increase in demand for interventional radiology, with more complex and time consuming cases.
58. Primary care access to radiology has historically been weak in Southern. HealthPathways is seen as the mechanism for providing a robust approach for general practice to have access to a wider range of modalities, with appropriate monitoring of clinical practice and the use of radiology resources.

Strategic directions:

- (a) A single booking and triage system for imaging.
- (b) Resilience in imaging workforce and equipment planning including through public private partnership.
- (c) Empower GPs with appropriate diagnostic access.

Strategic direction 5 – adjusting service delivery in hospitals

59. Dunedin and Invercargill hospital services must be planned within a whole of health district context and, where relevant, to factor in national and regional services. In some services such as paediatrics this planning has worked well with a regional clinical network. In other services, such as respiratory services, this planning does not work as well with inconsistent work pressures on services. For instance, in Dunedin, there is capacity to run a 24 hour acute service roster of respiratory physicians, which would be unusual in New Zealand outside of Auckland. At the same time, there is one respiratory physician in Invercargill operating both at Southland hospital and across the region. Although the Otago and Southern DHBs merged in 2010, there are still noted differences and in some areas little amalgamation (e.g. internal medicine and respiratory medicine are very different across the two sites).
60. The Dunedin hospital operates differently from other hospitals in New Zealand with a strong tendency to sub- specialisation in medicine, and with a need to organise acute medicine presentations in a more robust general medical service.
61. Ward structures have also been difficult to work with, with smaller than desired wards including both day-patient and out-patient activity. Each of the medical wards has its own admissions criteria resulting in registrars having to make difficult calls on where to send patients and seek admission.
62. Theatre productivity suffers because, although there is now a central booking function, the process does not lock in pre-operative and post-operative processes. Therefore a list may not be possible because of lack of post-operative bed space. Ambulatory patient areas are much too small even for activity such as the oncology service, where a great deal of thought has been put into patient flows.
63. Potential areas of productivity gain in Dunedin are:
 - (a) Optimisation of theatre use, and in particular optimisation of patient flow through theatres within the whole context of flow into the hospital, and through post-operative phases. While the Productive Series has been applied to some services in Dunedin, there is scope to consider the patient pathways as a whole, and to improve flows across the whole patient journey, particularly including Day of Surgery Admission (DOSA) processes. A patient flow nurse role has been introduced, and clinical and operational governance of the theatres has been changed.
 - (b) Reviewing the balance between generalist and specialist admission procedures, promoting more generalist patient management with appropriate specialist and subspecialist input, and reviewing the effectiveness of specialty cover arrangements, overall reflecting a more team based approach within the hospital.
 - (c) Addressing the fragmentation of small wards with separate and specialised staffing rosters.

- (d) Patients in hospital are generally elderly patients with multiple issues, and wards are more usefully structured around patients with specialists operating in those generalist wards.
 - (e) Adopting techniques such as statistical process control to monitor trends and predict performance.
 - (f) Implementing a single point of booking and monitoring admissions across the district.
64. Particularly in internal medicine, the model of hospital organisation will need to reflect the growing age of patients, increasing levels of acuity and, also, increased likelihood of co-morbidity.
65. Likewise, modern hospital processes divide up the patient journey into ambulatory (day patient and outpatient activity, which may or may not happen on the hospital site), pre admission processes, interventional spaces and post intervention spaces. It is likely that the front end of the hospital will need to change, with dramatically increased and integrated outpatient areas, with treatment rooms and some ability to perform procedures outside of theatres. This role delineation needs to happen to make further progress on hospital productivity.
66. The South Island DHBs have a strong and effective alliance relationship for service development across the region. This has seen a number of subspecialist services operate regionally across the South Island, with frequently cited examples including paediatric surgery and neurosurgery. The model of one service with multiple sites is seen by a number of key informants as the sustainable direction for subspecialty services, although some noted issues with the governance of the existing regional services and suggested that this could be improved, particularly in terms of maintaining a regional focus. The South Island Alliance's current work on cardiac services across the region will inform decisions on the future configuration of cardiothoracic surgery.
67. Advanced Care Planning will be a critical competency for this ageing population and the palliative care network should be strengthened to reflect this need.

Strategic directions

- (a) For all hospital based clinicians, whether working with the University or in private practice, the primary orientation is public health services.
- (b) Organise wards on a generalist basis, with specialists able to act within those general wards.
- (c) In surgical wards and with surgical flows, with any new build, focus on aspects likely to increase theatre productivity and provide a different pathway for day surgery and outpatients.
- (d) Focus on standardised flows both in Dunedin Hospital and across the District, supported by effective information and monitoring systems.

Strategic direction 6 – Consciously build telemedicine and information technology infrastructure

68. Spend on information technology has suffered with the need to attend to a deficit. However, a number of regional initiatives such as HealthOne, a regional patient administration system and better use of connecting technologies such as telemedicine could greatly help provider connectivity and patient services.

Exploit the potential for telemedicine

69. Services can be a great deal more responsive by being less hospital centric. Telemedicine is greatly under-utilised in the district, and in many circumstances can offer a more technically efficient use of health resources and more patient focused service. Senior medical staff time is relatively expensive, and the distances they need to travel for outpatient clinics can swallow valuable time, particularly in inclement weather. Currently, a number of these senior medical staff and some of the surgical staff travel between sites across the district. While there is a definite place for physical outpatient clinics, many First Specialist Assessments, and the subsequent Follow-Ups, can be undertaken locally via telemedicine. The ability to “remote in” supporting nursing staff and rural hospital specialists will likely save senior staff and patients a great deal of travel time.
70. Likewise, the monetary and time costs to patients and their families to travel to Dunedin for clinics can be a barrier to them receiving care and compliance for ongoing care.

It is estimated that 20% of SDHB’s paediatric diabetic patients live in Central Otago. With the traditional model of visiting the Dunedin Hospital clinic this translates to:

- A six to eight hour round trip for patients at a cost of ~\$1000 per patient per year for a 30 minute clinic;
- A day off school/work, and
- With winter weather, roads can be blocked either delaying travel or requiring the family to stay overnight with associated accommodation costs.

Alternatively an outreach clinic is estimated to cost ~\$2500 per clinic with down time in clinician travel and the same risks of road closure in winter.

More technically efficient models of care are increasingly being implemented with the use of telemedicine across rural areas allowing patients to receive care in their

own communities leading to cost savings for the patient's family, less travel time for specialists, reduced hospitalisation and increased equity of care.¹²

71. Some telemedicine support is in place such as the videoconferencing facility in Queenstown. However, we understand that this facility is not routinely used – while Queenstown might be able to operate it the participant on the other end of the videoconference may not always know how to make the equipment work.¹³ One of the main barriers to uptake of telemedicine is the need for 'patient touch'. In part this need for patient proximity can be met by working with trained nurses and GPs. The degree to which telemedicine will be used also depends on the style of individual clinicians and the degree to which they are comfortable using this form of communication. Personal relationships between health providers are as important as making sure the technology works.

Information technology

72. Invercargill and Dunedin operate different systems. There are a number of integrating tools such as a patient whiteboard, however close integration is not always possible. GPs generally have less connectivity than others in New Zealand.
73. Fortunately, a great deal of work has been undertaken regionally and Southern DHB can be part of a regional roll-out of clinical data repositories, e-pharmacy and patient administration systems.
74. There is no point undertaking a capital investment in facilities without committing to the information technology needed to gain the productivity benefits required from investment. In particular, the bedside needs to be able to cope with increased monitoring. With nurses wheeling computers (Computers on Wheels, or COWs), wards need space to store COWs and medicine administration spaces need work-spaces sufficient for a nurse and a computer. Ward rounds will be supported electronically and there need to be adequate charging facilities for electronics. The hospital will need to be appropriately wired, and systems will have to be flexible enough to support the on-going development needed as the health system continues to integrate. Health professionals in the community will be able to access patient information while on the move, seamlessly integrating primary, secondary and community data-sets.
75. Currently, clinical directors might know what happened last month. In a modern health system, they need to know what happened in the last hour and what is likely to happen over the next week and the next month.

¹² Wheeler, Dr. B. (2015) *Diabetes Telemedicine clinics – The Southern experience*. Retrieved from http://www.southerndhb.govt.nz/files/15426_2015033080434-1427655874.pdf

¹³ In its feedback, the mental health directorate noted it is using telemedicine but not to the extent it could. The Director of Mental Health has recently approved the use of video conferencing for assessments under the Mental Health Act.

Strategic direction

- (a) Invest in patient systems supporting clinical decision making.
- (b) Make telemedicine a priority and establish a project team to make this happen.
- (c) Aggressively support systems integration between primary and secondary care.
- (d) Implement existing systems in New Zealand rather than looking further afield, with a particular view to regional implementation.

Strategic direction 7 – Transparent relationship between DHB and university

76. Research activities have several distinct impacts upon service configuration. In concrete terms, the University of Otago uses up to 20% of the Dunedin Hospital site for research and teaching activities, an arrangement agreed at the time of the construction of the existing ward block. This proportion has varied a little over time, but is considered to be generally close to the original 20% value. This share of the facility was funded in part by Vote Education when the Ward Block was originally built. The University makes a contribution to maintenance and fit-out of the current facilities. Room for research activity continues to be routinely incorporated into hospital facilities, for example in the new gastro suite.
77. There is a clear message from a range of interviewees that physical co-location between university and hospital facilities is important, both for teaching and for research, with one interviewee being blunt about any potential change to hospital location also requiring a change to medical school location. The Otago Polytechnic, responsible for nurse training, was also clear in their view that the co-located precinct of Polytechnic, University and Hospital constituted an important hub for research and teaching innovation.
78. The specialist nature of cutting edge research tends to mean that university staff inherently have an interest in specialist fields. This means that tension can arise between a research capability, which might enable the offering of a highly specialised or cutting edge service for patients, and decisions around health service funding in which service planners might not see such cutting edge treatment as a priority. Anecdotally, this can result in patients experiencing longer stays in hospital, or receiving treatments which go beyond standard New Zealand practice. While such practice can sometimes benefit patients, the other side of the equation is that it can undermine the explicit prioritisation of health service resources across the whole system. The magnitude of this kind of impact of research upon service delivery is not clear, but there is a consistent message from a number of stakeholders that some of these effects are seen in Dunedin.
79. The implementation of research activity across the University and DHB is managed by Health Research South, a joint organisation providing support, policies and procedures for research projects across the institutions. Health Research South provides costing advice for research projects which address aspects of the service cost impacts of research activity (for example research nurse time, or use of radiology services). Anecdotally, while there are not joint appointments for clinicians other than doctors, there are sometimes arrangements in which research nurses are employed by the DHB. There is a Joint Relations Committee to manage the relationship at this level and, below that, Clinical and Operational Committees.
80. At an institutional level the relationship has strengths and weaknesses. While there is a clear formal partnership agreement between the University and the DHB, which sets out a series of joint mechanisms for decision making and for agreeing upon teaching and research resource implications, this isn't always promulgated to middle-management. Health Research South, the jointly owned research support

organisation is considered to be an effective unit for providing advice to researchers on ethics, funding and methodology.

81. In some cases University staff felt that the DHB has a record of being unresponsive, difficult to work with, and unduly constrained by funding. Equally, some DHB staff felt that the University of Otago was sometimes high handed, making decisions which have an impact upon DHB services without adequate consultation.
82. At the level of individual clinicians, some informants expressed a view that there is a lack of transparency of the joint employment contract with the University and DHB. The University points out that there has been marked improvement in the transparency of payment, including a transparent salary “top-up” in some instances. Equally, disparities in clinical pay can arise from the complexity of rosters and on call payments for DHB employed roles. Overall, there is an impression that there is not clarity in where time is spent and in particular what is happening to the non- clinical component of paid DHB time. In some cases it was felt that these issues were exacerbated by the additional private practice load of senior consultants. The combination of these different roles for senior doctors sometimes meant lack of flexibility in rosters and a need for more transparency in the times and days of senior consultant availability. Likewise, the University indicates its jointly appointed staff have to break into university time with urgent patient issues, something it sees as necessary and appropriate.
83. Further, a desire to be at the leading edge of technology and clinical research means some clinicians will more actively seek use of new pharmaceuticals or will use more sophisticated and innovative clinical technologies. We strongly recommend introducing a formal gateway process for new technologies, and assigning this role to an office of the Chief Medical Officer. The University agrees the framework is needed but sees the issue as a DHB problem.

While we agree that framework or system should be put in place to manage the introduction of any new medical technologies funded by the DHB, this is not a University ‘problem’ but rather an area where the Southern DHB needs to establish an appropriate and effective framework.

84. There is a material issue of balance between specialist and generalist models of care within Dunedin Hospital, with a view that the hospital sometimes operates a more specialist, and subspecialist, model than is the norm elsewhere. The balance between specialist and generalist models within the hospital is in part an internal issue of hospital organisation, and in part related to the complex interface between hospital services and the medical school’s research and teaching activities. External parties, especially professional colleges, can also have an important influence upon specialist models, particularly with respect to postgraduate training and service accreditation requirements. Examples of this lack of balance are:
 - (a) Wards sometimes have admitting criteria based on the specialism rather than on the acuity of the patient. An example offered to us was that if there is even a slight head injury, it is likely the patient will be sent to the neurology unit.
 - (b) In some cases nurse rostering is fragmented by services rather than ward layout.

- (c) Twenty-four hour on call rosters are provided for some subspecialty services, rather than relying upon subspecialty input by phone into patient management within a generalist medical discipline.
85. In some ways, joint clinical staff with the University of Otago makes rostering an easier and less pressured task, for example drawing comparisons in one specialty between the Invercargill site, without university appointments and a 24 hour roster which is very tight and has little flexibility, to the Dunedin site in which the university appointments provide greater flexibility and less pressure upon individual staff.
86. This additional flexibility in rostering appears to be a factor in enabling a particularly high level of cover for medical subspecialties within Dunedin Hospital. For example, 24 hour cover by respiratory physicians was presented by one group of interviewees as a specific benefit of having university staff to draw upon “*We couldn’t provide some of the services without the University*”, while other interviewees questioned why subspecialty cover at this level would be needed.
87. The university relationship is widely perceived to have a strong benefit for the DHB in recruitment “*We get the best...*”. A number of interviewees emphasised this, and generally reported a positive situation for senior medical recruitment which was attributed in part to the opportunities for specialist research activity in Dunedin.
88. Medical staff throughout the hospital expressed a wide range of opinions on the place of teaching activity, with some seeing it as a core role for a professional whether a university appointment or not, while others saw teaching as an unpaid or lowly paid imposition upon a busy clinical workload. Much of the undergraduate teaching workload is described in clear agreements between the University and DHB, although non University staff (for example hospital registrars) provide a degree of teaching activity on an informal and unpaid basis.
89. Teaching relationships with the University of Otago and Otago Polytechnic are multidisciplinary, with important teaching roles for dental, pharmacy, physiotherapy, nursing, radiation therapy and medical laboratory science. There are space requirements for students across all these disciplines, as well as for medical students. Increasingly, the teaching of health professionals is seen as a multidisciplinary enterprise, with students learning their clinical role within the context of a wider team.
90. The University and DHB have undertaken joint planning and development of a joint vision on a number of occasions over the past decade, although some of these efforts appear not to have generated a strong, positive relationship. A combined group of University and DHB staff indicated several key points which they felt were important for a future shared vision of the relationship:
- (a) Explicit high level commitment on the part of both institutions to working together in the future.
 - (b) A trusting relationship between the institutions, which is flexible and allows for proactive planning.

- (c) Agreement on mutual goals across the institutions, and areas in which research can support service development and quality.
 - (d) A culture change within health services, seeing teaching and research as core components of professional activity.
 - (e) Improved information technology, providing data to clinicians and researchers in a way which allows them to support the development of health services.
 - (f) Mutual support between the organisations, including on PR and media issues.
 - (g) A simplified transactional relationship with more transparent contracts and agreements, reducing the transactional costs of working together.
91. Discussion about the relationship between the DHB and the University tends to be dominated by medical teaching and research. There is a strategic opportunity for Dunedin is to bring together a wider relationship with the DHB and City Council, involving all health science departments across the university, as well as other disciplines such as economics and policy. This important strategic development for the city of Dunedin, and the Southern District as a whole should be pursued, but must take place in parallel with the opportunity and urgent need to redevelop hospital facilities in Dunedin.

Strategic directions

- (a) The University and DHB recommit to a high level relationship, and develop joint work-streams on: a) professional culture change; b) reducing transactional complexity; c) agreeing areas of mutual strength for research and service development; d) effective collection and use of information.
- (b) Closely manage the introduction of any new medical technologies starting with an audit of current pharmaceutical and medical device expenditure.
- (c) In future years, the DHB and the university, with other partners such as the polytechnic, could aspire to design and build of a health services innovation hub.

How do we make sure this happens?

92. Health systems in New Zealand currently measure themselves by performance within budget, and against a set of performance targets. Building a stronger picture of systems performance requires better data and a different attitude. The reality is that little will change without leadership. A range of lean management and culture change techniques are currently being introduced to the DHB. These will succeed when senior clinicians across the whole of the health system take a broader perspective, and drive patient oriented, beneficial change through a unified system. The three themes below set out how this might be different.

Building a system from a patient focus

93. Providing care for the frail elderly will determine the future success or otherwise of the Southern DHB. There are currently many omissions in providing generalist care with maximum productive efficiency for patients. For instance, the elderly person driving from Dunstan to Dunedin will want to be assured that the service could not have been provided closer to home. Communities generally understand that more complex interventions and acute care have to be provided in Dunedin and Invercargill. However, patients want to return to their communities in a prompt and orderly manner.
94. At each step in this process, a modern health system should consider what could be changed to make the system work better for this frail elderly patient – whether services were delivered effectively and efficiently, whether the service was of the appropriate clinical quality and whether the patient’s experience was a good one. Indeed, a top priority for the DHB as outlined in Piki te Ora is to “integrate services to ensure patient journeys are smooth through efficient and effective care pathways, and that the system is easy to use for everyone”.¹⁴

Planning principle

95. Service design must heed travel times and costs for patients, particularly frail elderly patients.

Dealing with inequity

96. Health systems are designed to moderate inequities in access to health services. The Southern DHB could have a more consistent focus on the equitable distribution of health care resources to reduce systematic health inequalities. Although Piki te Ora clearly states the need to reduce health inequalities between Māori and non- Māori, and between other more and less advantaged groups, the main concerns we have heard thus far are focussed on inequitable access to services based on geography. In

¹⁴ Southern District Health Board (2015) Southern Strategic Health Plan Piki te Ora.

contrast to other DHBs, there seems to be less debate about gaps in health needs, and a lack of urgency on responses to reducing them (e.g. establishing very low cost access general practices).

97. Unmoderated equity of access is not always a useful principle in a region where there are urban populations with easy access to services and distant, remote and scarce populations with poorer local infrastructure, including weather vulnerable roads, and facing long travel times. Complete equity of access is not an achievable goal in every service, given the geography of this DHB. A more appropriate characterisation of an equity of access goal could be along the lines of “equity of access to a clinically and financially sustainable service which can respond to the full range of needs which present from the population”. This can recognise that the particular nature of response to a need will be different in different places and for different populations, according to both the nature of the need and the particular mixture of resources and workforce which can realistically be deployed.
98. The DHB needs to manage its local communities of need more proactively with planned care programmes for communities in need and vulnerable patient groups.

Planning principle

Clinical teams combine to meet population needs across the catchment in the best practical manner irrespective of current dispositions.

Building a unified service

99. The Southern DHB imposes constraints on itself by trying to do the best it can within the boundaries of each of the individual service providers, rather than by looking across service provision from a patient perspective. There are multiple examples of this behaviour leading to lost opportunities for better patient care beyond traditional provider boundaries. For example one informant's view was:

Could do more in long term condition management (LTC) – have nurses working in LTC – heart failure nurses, diabetes nurses, respiratory nurses – aligned to clinicians, but could be aligned to the community and to GPs but all hell would break loose around the specialists – need to unbundle into community models. Don't think we have buy in from secondary clinicians about changing.
100. There is a need for greater system wide cohesion between the rural hospitals, primary care and the two main hospital sites. In some areas there is a progressive and collaborative working arrangement between hospital specialists with rural hospital and the local general practice. However, this progressiveness is almost wholly reliant on certain individuals, and notably nurses, taking a lead. Arrangements for service development at a local level are often informal.
101. There will always be a degree of variation of service provision often depending on who can offer what, in which areas. For instance, Queenstown will likely continue to attract additional private medical services because of the nature of the clients of those services, and because of the attractiveness of the area for specialists. Other areas without the special nature of Queenstown will likely need to work harder to attract and retain skilled staff.

102. Services should come together with the patient as the focus. Transitions between providers need to be well organised, timely and appropriate. Each provider needs to undertake its job to the best of its ability. The role of hospital services, imaging services, paramedics, primary care, community nursing, allied health workers, rural hospital specialists and home care workers all need to come together as seamlessly as possible.

Planning principle

A whole of system view needs to be taken inclusive of local differences in population needs and available workforce.