ASMS
IN DEPTH REPORT

Health & Disability System Review

Introduction

The purpose of the Government's Health and Disability System Review (the Review), as per its terms of reference (ToR), is to "identify opportunities to improve the performance, structure, and sustainability of the system with a goal of achieving equity of outcomes, and contributing to wellness for all, particularly Māori and Pacific peoples". The ToR emphasise the roles of primary care and the importance of population health promotion and illness prevention. There is no mention of 'hospital', 'secondary' or 'tertiary'.

The Review panel (the Panel) comprises respected members from a range of backgrounds, including the non-government organisation sector, health research, health economics, digital technology, nursing, district health board funding and planning, and business. The Panel is supported by an equally well-respected Māori Expert Advisory Group, and a secretariat of officials. There is no representation for practising doctors. While the ToR refer to the Panel as being independent, its chair, Heather Simpson, was the Chief of Staff of former prime minister Helen Clark. Ms Simpson is a special adviser to Prime Minister Jacinda Ardern.

The stated aims of this interim 300-page report to the Minister of Health are three-fold: "It reflects back the issues people and organisations have told us are hampering the achievement of better outcomes, checks whether the available evidence supports what we have heard, and signals our initial thoughts on where we believe the biggest gains can be made to improve the performance of the system".

As the report says, it contains few surprises in those respects. Much of it can be found in other documents, including the last ministerial review in 2009, and various strategies. Nor should it be surprising that a report containing only "initial thoughts" - no recommendations, and many questions - contains few surprises.

The report's suggested directions for the way forward are familiar themes: equity of access and outcomes, creating a collaborative culture and unifying values, integration of services, better data, better workforce planning, better accountability, better service responses, more prevention, etc. All of which deserve strong support in principle. But of course it all depends on the critical detail of implementation and development.

The report recognises that cultural and attitudinal changes are needed to work more collaboratively, and change needs to be led from the "centre". But there is little clue on what this means in practice. Often the discussion appears focused more on structural change rather than relational. "Distributed leadership" (but not clinical) is mentioned once, and there appears to be no recognition of its critical importance in achieving better service responses, integrated care, strong networks, best use of technology and improved prevention.

As a "reality check on where the system is at", the report provides a comprehensive overview of how the system operates, its strengths and weaknesses, and the pressures and challenges it faces. Its version of "reality" in some areas, however, is highly questionable, including some aspects of industrial relations, which appear to favour an employer perspective, and funding, which is seriously understated and which in turn will influence the reviewers' understanding of what may or may not be "sustainable".

There is much focus on the idea of shifting "away from a treatment focus towards a prevention focus", as though the latter will negate the need for the former. The evidence in this area points to the reality being far more complex.

The importance of distributed clinical leadership, other perspectives on industrial relations, funding, and the importance of hospitals in improving and maintaining the population's well-being are among the issues needing much more considered attention.

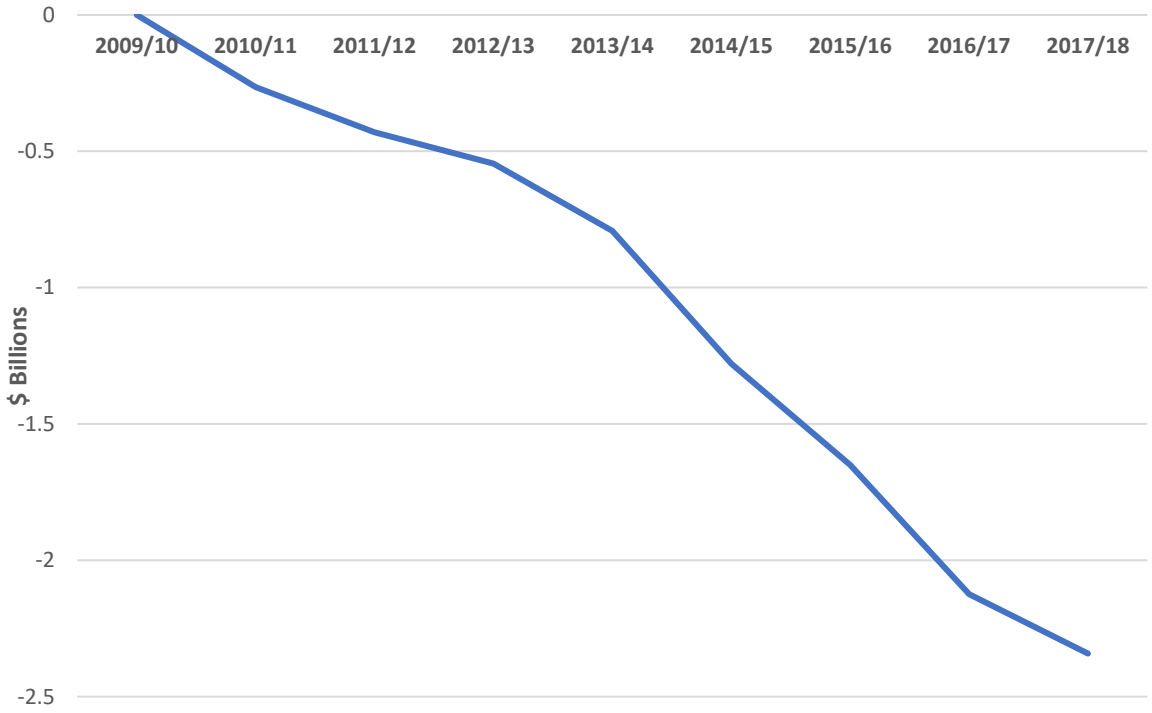
As to what can be gathered from this report, the following pages highlight some key points with accompanying comment.

The New Zealand health system's outcomes and spending are in line with other OECD countries

The report says outcomes on "several key metrics", are comparable to other OECD countries, providing data on just one metric, life expectancy at birth. A number of other key metrics show New Zealand is not doing so well internationally, such as premature mortality rates, which are the 22nd highest in the OECD - 15% higher than Australia's, for example; infant mortality (34% higher than Australia's); female cancer mortalities (19% higher); and death from ischaemic heart disease (52% higher). The report acknowledges New Zealand's high suicide rates.

These statistics and others are almost certainly influenced to a large extent by poor health outcomes for Māori and Pasifica, relative to the rest of the population, as starkly illustrated in the report on a range of other indicators (discussed further below).

The report takes a circumspect approach to health funding. It acknowledges funding pressures "and a sustained period of little real growth", referring to recent "real" per capita Core Crown Health funding trends, using a GDP deflator. These do not take account of the additional needs of an aging population or the accumulating costs of new initiatives introduced each year. There is no mention of the gradual drop in health funding as a proportion of GDP since 2009/10, or the annual analyses undertaken by the Council of Trade Unions and ASMS showing successive years of funding shortfalls for Vote Health, the latest of which estimated that had Vote Health operational funding maintained the proportion of GDP of 2009/10, it would be $1.7 billion higher in 2019/20.[i] Nor is there any acknowledgement of the Infometrics analysis commissioned by the Labour Party in 2017 showing a $2.3 billion gap in real Core Crown Health expenditure between 2009/10 and 2017/18 (Fig 1). Infometrics used Treasury's modelling for calculating real health costs.[ii]



Source: Infometrics 2017

Figure 1: Core Crown Health Expenditure: Cumulative difference since 2009/10 ($b)

This lack of acknowledgement of substantial real cuts to health funding is reflected in the parts of the report discussing funding and where the impact of under-funding is understated. For example:

MORE FUNDING ALONE IS NOT THE ANSWER

- *The Panel recognises that there will always be worthwhile ways to spend more money within a health and disability system and that the relatively slow growth in expenditure in recent years has added to stresses within the system.*
- *Projected changes in demographic and disease profiles mean demand for health services will continue to grow strongly, which, along with recent adjustments in staffing costs, will require further increases in the overall funding envelope over time, even with improvements in efficiency.*
- *The Panel recognises however, that increasing funding alone will not guarantee improvements in the equity of outcomes. The Panel's initial focus is, therefore, on how the system could operate differently to make better use of whatever financial resources are available to it.*
- *The Panel also recognises that previous funding levels have not been the sole cause of the system continually running financial deficits and believes accountability mechanisms need to change to hold the system more accountable for staying within future funding paths.* [p 92]

There is no acknowledgement in the report that DHB deficits may be due to lack of funding. The report talks about a lack of incentives for DHBs to stay within budget. The report suggests some [unidentified] stakeholders were frustrated that DHBs "continue to run persistent deficits with few repercussions". [p 83]

The report reveals the Government's response to that:

Any DHBs that receive government funding for capital investments from 1 January 2019 will also receive an increase in funding to match the increased capital charge. [This was announced by the Minister of Health in July 2019, but he did not mention what follows:] When calculating the increase in funding, a DHB's financial deficit will be subtracted from the increase in equity. This will reduce the increase in funding for DHBs running deficits and provides a financial incentive to not run deficits. [p 269]

The system is more 'muddled and confusing' than it needs to be

The Panel found that while health systems are inherently complex, the New Zealand system is more "muddled and confusing than it needs to be".

It reports on fragmentation in the way organisations in the system work, leading to disconnect between strategy and outcomes: the objectives are not owned and shared: "For many, there is little sense that everyone is working to a shared set of values and towards a common goal".

The Panel is "firmly of the view" that New Zealand needs to create a more cohesive health and disability system underpinned by a:

- common set of values that aligns workforce behaviour, culture, and cooperation
- unifying set of principles aligning the system toward common objectives, shaping funding, governance, accountability, data, and service delivery within the home, community, and hospital.

On structural questions, the Review suggests the objective should be to make the system less complicated with fewer, not more, agencies. However, in respect of DHBs, the report points out the population and geographic size of DHB regions vary significantly, yet all DHBs are mandated to perform the same range of functions. But "before deciding the solution is to have fewer DHBs, it is worth considering whether the system as a whole should provide more analytical or back-office functions to smaller DHBs in other ways".

The Review has also been examining the effectiveness of elected boards. The reports says if DHBs focus on the needs of the communities they serve, communities need more effective avenues for guiding the direction of health service planning and delivery. "The Panel has not formed a definite view on whether DHB elections are an effective or an essential way of achieving this."

But there is another issue concerning the real degree of DHBs' autonomy and their flexibility to tailor services to local needs. The report found national priorities override locally determined ones.

Research undertaken about how much autonomy DHBs have to steer the direction towards local priorities also concluded that "the priorities and requirements of central government and the weight of institutional history were found to be the most influential factors on DHB decision making and practice, with flexibility and innovation only exercised at the margins". [p 64]

The report suggests the system needs to balance "how far the level of constraint imposed impacts on the ability of DHBs to deliver on their prescribed functions".

Māori and Pasifica experience inequity compared with the rest of the population across all deprivation categories

Health inequity is one of the strongest themes of the report. Its primary focus relates to Māori; it also recognises inequities experienced by Pasifica, disabled people, and rural communities.

Māori health outcomes

Much of its findings and discussion on health inequities experienced by Māori reflects the content of the ASMS Health Dialogue's chapter on engaging with Māori in *Path to Patient Centred Care* (included in ASMS' submission to the Review).

The report outlines clear disparities in health outcomes for Māori and Pasifica. On average, Māori live seven years fewer than non-Māori and non-Pasifica. Māori life expectancy tends to be lower in DHB areas with higher levels of socioeconomic deprivation, ranging from 73 years in Lakes and Northland DHBs to 80 years in Waitematā DHB (nationally the average life expectancy for non-Māori non-Pasifica is 82.8 years).

While health equity for Māori is substantially influenced by the unequal distribution of the social and economic determinants of health, health care services play a significant role.

Submitters noted that there is evidence of implicit bias by professionals in the health system, which perpetuates and maintains power imbalances in the system, and impacts on the quality of care Māori receive. One submission noted that a core goal for the health system must be to prevent people from enacting approaches that perpetuate power imbalances and inequity, whether these are due to personal unconscious or conscious bias or institutional racism. But it was also noted that in order to be effective, eliminating racism needed to also be a goal for wider social service agencies whose services contributed to poorer Māori health outcomes. [p 43]

The report notes that eliminating racism in the system is everyone's responsibility, from those working in administration to service delivery and leadership and governance. It says this needs to be in both personal and organisational performance plans, and it should be monitored.

Submitters called for tikanga Māori to be normalised within the health system, and the health system should be configured in a way that reflects Māori culture, theories of health, well-being, and aspiration. It was also noted that the development and adoption of a wairua-centred approach would ground Māori ways of working in cultural strengths and beliefs, which would benefit all New Zealanders. The Panel commented that the health system must:

- *Fully incorporate te Tiriti o Waitangi / the Treaty of Waitangi to provide a framework for meaningful and substantive relationships between iwi, Māori and the Crown and recognise the importance of considering the heterogeneous realities of Māori and kaupapa Māori aspirations;*
- *better meet its obligations regarding the health of Māori communities and embed rangatiratanga (authority, ownership, leadership) and mana motuhake (self-determination, autonomy)*

These are to be "a key focus" for the Review's final recommendations.

Pasifica health outcomes

Research has shown long-standing inequities in health outcomes between Pasifica and non-Māori non-Pasifica in New Zealand. Inequities include shorter life expectancy, a higher amenable mortality rate, multimorbidity, and a higher rate of death from cancer.

Pasifica childhood immunisation rates are among the highest of all ethnic groups. However, persistent health inequities are seen in hospitalisation rates, chronic respiratory and infectious diseases, and serious skin diseases.

Evidence shows that the burden of risk factors for long-term conditions such as smoking, obesity, hypertension, and infectious diseases are prevalent in Pasifica populations, but data is limited on how equitably interventions to address these risk factors and conditions are being provided by the health sector.

The report found a serious lack of data on the current state of Pasifica health and identifying why disparities in outcomes, problems with access and quality of services, and unmet need persist. It notes there appears to be no secondary care data governance requirements to support a national policy on equity for Pasifica.

Health inequities for people with disabilities

A quarter of New Zealanders live with disability and the overall prevalence of disability is rising – both through population growth in older age groups and, more importantly, through increases in disability in adulthood from the effects of long-term conditions such as diabetes and dementia. Inequities are well documented, yet the Review has found little progress has been made to address them.

As with Pasifica health, information about disabled people's health is limited. The report recognises that disabled people are more likely to feel the impacts of the social determinants of health, including lower employment, income levels, secure and warm housing, and discrimination.

Health inequities for rural populations

While data is limited and indicative, people living in rural towns can have poorer health outcomes, including lower life expectancy, than people living in cities or surrounding rural areas, an effect that is accentuated for rural Māori and disabled people. Mental health challenges and access to health and support services in rural areas are priority concerns.

Factors identified as contributing to poorer access to health services in rural communities were socioeconomic deprivation, geographical and distance barriers, transport, telecommunications, cost of access to service, and service acceptability.

The system will need to be much more focused on preventing ill health and promoting well-being

Introducing the report, chair Heather Simpson writes:

Continuing with the current model of care, based largely on a Western medical model, employing more and more medically qualified staff focused on treating illness, rather than promoting wellness,

will not only be ineffective in achieving the equitable outcomes we desire, it will not be sustainable. The numbers of staff required will not be available and the cost would be prohibitive. [p 2]

The need for a greater focus on preventing ill health and promoting well-being as a way of relieving pressure on the health system is repeatedly emphasised.

A more deliberate population health approach will be needed at all levels if future demand is to be managed, equitable health outcomes achieved, and the system is to be financially sustainable. [p 5]

But, as ASMS points out in its submissions, the evidence shows prevention and promotion activities do not automatically result in reducing pressure on the system. This is recognised to some extent.

Shifting the focus onto prevention, early intervention, and integrated care takes time and resources. Frontline staff and clinicians are busy with their day jobs and have little time to focus on leading changes … DHBs have to weigh up bringing in more staff to help drive changes with other more immediate priorities, such as addressing the growing demand on hospital services and managing clinical risks. (Group submission) [p 234]

Population health workforce issues are also highlighted; in particular, population health must be led by a workforce "with the right mix of skills at every level" but "capacity and capability gaps have emerged in some parts of the system". Systematic investment to develop population leadership capability "that fully reflects the diversity of Māori, Pacific, Asian, and other communities is urgently needed".

Greater engagement of senior population health specialists will be important not only for their specific functions and skills but also in influencing the culture of the organisation. These functions need to be agile, smart, and responsive and are essential enablers for health system strategy, governance, and management. [p 113]

There is clearly a strong hint that population health is in line for increased attention in forthcoming budgets. What it means for public health specialists is unclear. It could mean more investment in the specialist workforce, or simply that specialists will need to work smarter and be more "agile".

Improving population health requires policy interventions well beyond the health system. To emphasise the potentially significant impact of tackling the determinants of health and well-being, as opposed to the impact of the health system itself, the report includes an illustration of a human figure divided into four parts representing the four key factors influencing health: the head and upper torso (40% of the figure) represent socioeconomic factors; the abdomen (10%) represents the physical environment; the hips and upper legs (30%) represent health behaviours; and health care (20%) sits around the socks. [p 25]

However this illustration (sourced from the United States) may seriously understate the effectiveness of the New Zealand health system. While the report says it is "widely acknowledged" that "clinical and medical care" accounts for only about 20% of a person's health status, a WHO report cautions that "the long causal pathway between the implementation of a project/programme/policy and any potential impact on population health, and the many confounding factors make the determination of a link difficult".[iii] A further WHO report indicates around half the gains in life expectancy in recent decades stem from improved health care.[iv] New

Zealand research shows that of 56 conditions or groups of conditions where death is considered avoidable through timely health intervention, 24 were avoidable largely through primary prevention, 16 mainly through secondary prevention and a further 16 mainly through tertiary prevention.[v]

There is no argument, however, that the determinants of health are largely outside of the health system. In the Review report's appraisal, addressing the broader determinants of ill health is critical not only to improving population health and health equity but also the very sustainability of the health system.

On the basis of what is presented in this report, a health impact assessment of broader social and fiscal policies, would be valuable, building on existing work such as that produced by He Kainga Oranga (the Housing and Health Research Programme) and existing research such as that examining the effects of recent policies on child poverty.[vi] Also, as ASMS pointed out in its submissions, the evidence shows policies with the greatest impact on reducing the need for hospital services relate to tax and regulation aimed at reducing smoking and consumption of alcohol and unhealthy foods.

While the report acknowledges the effectiveness of regulation, especially in relation to tobacco control, there is no suggestion in its key messages on 'directions for change' that regulatory measures will be recommended in its final report.

The Panel has yet to reach a view on whether it supports calls for a standalone Public Health Agency.

Fragmentation of community-based care needs to be addressed

This section looks at how the key parts of Tier 1 (the broad spectrum of self-care, home and community services) are currently managed and funded, and questions why it is that the changes promised by the Primary Health Care Strategy have not materialised.

The report found the primary health system fragmented and overly complicated, suggesting it may be in for a shake-up.

The system has many different funding regimes, different eligibility rules, different business and employment models, all expected to work together. Consumers [sic] are often confused and the lack of integration within the Tier means patient pathways are more complicated and less effective than they could be. [p 115]

More specifically:

- Communities have not been sufficiently engaged in decision-making. Historical models of service delivery have prevailed. The Primary Health Care Strategy's strong focus on cultural competence and improving equity of outcomes has not been fully realised.
- Providers determine locations and working hours, resulting in maldistribution of services.
- Capitation-based general practice funding through PHOs constrains the system's ability to offer different ways of accessing services and makes it difficult to integrate services with those of other providers.
- The complexity and mix of funding and contracting mechanisms have inhibited changes in service delivery arrangements.

- Changes in the way Tiers 1 and 2 interact have been limited. In general, access to specialists is still via referral (it is not clear what the alternatives might be), and transitions of care between Tier 1 and Tier 2 are still unwieldly. The increased use of electronic referrals and tele- and video-links is assisting, but more fundamental change in work practices will be required if this is to grow at pace.
- Fragmented IT systems impede information sharing and the ability to integrate services.
- Public reporting of primary care use and outcomes is poor, limiting the ability to monitor and evaluate the performance of services.

Directions for change

The Panel's indicators for potential changes are more detailed in this section than for other parts of the system, suggesting Tier 1 services, particularly general practices, will be a priority in the final report. The suggested "directions for change" include:

- The measures of value and cost the system uses need to reflect what people value, "not simply what the system deems important".
- Services should be available where they suit the community rather than being determined by the preference of providers alone. More services need to be available for longer hours.
- The system needs to be better integrated so patients can move more readily through it.
- Refocusing the system on wellness rather than principally treating sickness requires changes in provider attitudes.
- More collaborative approaches are needed, especially to address health inequity.
- The sector needs to be less dominated by standalone service providers and be more driven by community-focused, integrated service provision hubs. (Heather Simpson told the *New Zealand Herald* there were questions about how GP services would be organised, "especially with a worsening global shortage of general practitioners" and there was a question as to whether GP services "should be centre of the system or just a fundamental part of it".[vii])
- Services that are largely funded on the basis of throughput are "unlikely to be appropriate". The emphasis needs to be on encouraging behavioural change and early intervention.
- Māori must have the right to access and develop services that appropriately recognise whānau rangatiratanga and are culturally appropriate. This will require more Māori providers and more Māori involvement in the governance, planning and development of the system.
- Clearer accountability between DHBs' and PHOs' responsibilities.
- Dependence on funding mechanisms that "incentivise throughput" should be reduced, "and the first priority for change needs to be improving services to the populations for whom the current system is not working well".
- The current mix of funding regimes, which leads to a plethora of different charging regimes for service users, needs to be rationalised.
- All data generated across Tier 1 services should be covered by system stewardship agreements which facilitate shared decision-making and more coordinated service delivery.

In summary, within Tier 1 there is a need for more emphasis on community health hubs, offering a broader range of services in localities that suit the communities, and funding systems will need to reflect more emphasis on prevention and well-being, and less on throughput.

Missing from these "initial thoughts" is any consideration of who bears the capital costs of new buildings or accommodation for primary care to enable better access for communities.

Nor is there any consideration of removing user charges, even when the report acknowledges that user charges "are significant and affect access" and "this contributes to poorer health outcomes and can lead to health conditions becoming more serious or chronic or disabling". In addition the report acknowledges the perverse incentives of user charges in encouraging patient "throughput" ahead of quality consultation.

A *New Zealand Medical Journal* editorial by a group of well-respected authors, including Review Panel member Professor Peter Crampton, raised the question: "Do patient charges support a healthcare model fit for the future?" [viii] The editorial referred to this (ironically, as it's not in the Panel's report) as an "elephant in the room". The signals from this report suggest no change in this respect.

Hospitals are under pressure, but…

This section considers the pressures the "Tier 2" services (hospital, specialist and diagnostic services), are under, the variation that exists in timelines of access and health outcomes, the need for long-term service planning, more evidenced-based "prioritisation and standards", and the potential future role of the hospital.

The report acknowledges the mounting pressures on hospital services, including staff shortages, "and many hospital staff feel stressed or burnt out". ASMS submissions on workforce issues are quoted, highlighting the estimated shortage of 1000 specialists, and the lack of effective workforce planning, and ASMS research on specialist burnout is referenced.

High bed occupancy levels are acknowledged, with many hospitals "running well above 85% occupancy" creating a "ripple effect" throughout the hospital. This is illustrated in a lengthy quote from an unnamed submitter (no submitters are identified in the report):

Regularly, and particularly during winter, our hospitals become overcrowded and dysfunctional as demand exceeds capacity. Consequently, acute patients 'overflow' to less appropriate hospital wards—acute medical patients are admitted to surgical wards, filling these and resulting in cancelling elective surgery. Ward rounds are prolonged as clinical teams visit patients throughout the hospital ("safari ward rounds"), decision making is delayed, patients access the next phase of care later, and hospital length of stay is prolonged. Prolonged length of stay further reduces access for new acute patients to hospital beds, making the demand and capacity mismatch worse. Exacerbating this are systems which might not facilitate early definitive decision making, timely access of acute patients to diagnostics, (eg, CT scanning), timely access to other necessary interventions such as acute surgery, nor efficient discharge of the patient when hospital care is no longer needed. Because acute patients continue to present to the ED, but access to care beyond the ED has become increasingly overwhelmed, a significant—although not the only—manifestation of this demand and capacity mismatch is worsening overcrowding in the ED (patients keep coming in but they can't get out). [p 182]

A chart [p 179] of public hospital discharges shows an 8% growth over four years to 2017/18, but it includes maternity and a number of small service groupings such as paediatrics, neonatal, Health of Older People Services and Disability Support Services where discharge trends are flat. The Ministry of Health's DHB Caseload Monitoring Reports (CMR) show that in the largest service areas – Medical and Surgical – combined case weight discharges increased by 10% over the same four-year period. This masks the much higher proportional growth of acute discharges at the expense of non-acute growth, as ASMS submitted in its submission on primary care. Further, price-weighted outpatient discharges increased by 20% over the same four-year period.

But if the report understates hospital discharge trends, the extent of future pressures is clearly recognised. The significant impact of an aging population is underscored by a few basic statistics: in 2018 over-65s accounted for 15.8% of the total population, 34.5% of all acute admissions, and 53.0% of acute bed days.

Clinical service planning by DHBs shows that demand associated with ageing is material and needs to be recognised now. The Hawke's Bay Clinical Services Plan estimates increases in discharges of around 25% and increases in demand for beds of 35% by 2031. [p 180]

The reports emphasises the impact of increasingly more complex, higher case weight inpatient events.

There is little discussion of unmet need in hospital care. Mostly it is in the context of variation of access to elective surgery across DHBs. The most pointed content is a quoted passage from a submitter (clearly referencing research commissioned by the Private Surgical Hospitals Association) saying "more than half of the 280,000 who require elective surgery …[in 2016] haven't had it" and that average waiting times for those patients had increased from 224 days in 2013 to 304 days in 2016. These figures do not appear to have been seriously challenged, except in a comment from the Ministry of Health that its waiting times figures did not correlate with this data, which is most likely owing to methodological differences.

This passage presented an opportunity to discuss unmet need for hospital care and how it might be addressed. Instead it was followed by this sentence, a brief comment on unwarranted variation of health care:

There is potential unmet need in the elective surgery domain, potentially contributing to the variation in performance seen across a national picture. [p 191]

While the growing pressures on hospital services are well recognised, the Panel appears ambivalent about the need for improving funding levels. On the one hand it says: "Under any realistic projection of future demand, our hospitals will be unsustainable without significant investment and significant changes in the way services are delivered". [p 177] On the other hand, as earlier discussed, it appears to downplay the impact of underfunding:

Periods of little growth in funding [sic] clearly add pressure to the system and may have contributed to issues such as staff burnout and underinvestment in capital maintenance. However, the Panel is not convinced that funding pressures alone are the main reason for the current inequity of health outcomes. [p 82]

The Panel subsequently takes this further:

The Panel recognises … that increasing funding alone will not guarantee improvements in the equity of outcomes. The Panel's initial focus is, therefore, on how the system could operate differently to make better use of whatever financial resources are available to it. [p 92]

There is the familiar narrative about a "disproportionate share of funding" going to hospitals, leaving little for other services such as primary care or population health services.

Concern that hospitals have dominated the system and that strong demand and cost growth in hospital services is putting the health system under financial pressure. This, in turn, is precluding investment in prevention and early intervention, which are needed to slow demand for hospital services. [p178]

Earlier the report suggested:

DHBs may be biased towards spending in their provider arms, since they have greater control over this spending and, potentially, because hospital employees can have a greater influence over decision making. [p 86]

But it concedes other factors may have contributed, including DHBs being subject to an "ever-expanding list of demands" from the centre, for which they are accountable.

Absent from the discussion, again, is the impact of underfunding, manifest in a $415 million DHB underlying operational deficit for 2018/19 ($1,081 million when you include one-off costs such as that to comply with the Holidays Act) and, among other things, the steep increase in acute hospital admissions in recent years.

As ASMS has pointed out in its submissions, it is not only community-based services not seeing a more balanced proportion of funding flow their way. The Ministry's patient data suggests non-acute hospital patients are also being been squeezed out by a combination of budget constraints, the rise in acute cases and the increase in complexity of non-acute cases, with actual non-acute patient numbers increasing by just 5.3% over seven years (well below the population growth rate) but translated to 12% when adjusted for case weight.[ix] More information is needed to interpret these trends but the decreasing headcounts per capita, despite policies to boost elective services, suggest a growing unmet need for non-urgent hospital care, which in turn will be putting further pressure on community-based services. The report recognises to some extent this rebounding of pressures but attributes it only to underinvestment in facilities.

The underinvestment in hospital facilities has contributed to the occupancy pressures many hospitals are experiencing. This, in turn, puts pressure on community-based services with delays in admissions and earlier discharges than is usually desirable. [p 182]

The future role of hospitals is likely to be heavily influenced by technological advances

The report notes that any long-term plan for hospital services will need to take into account the likely role of technological advances in artificial intelligence and robotics and increasing levels of digitisation. It quotes the *Economist*: "Many of the physical and mental tasks that doctors perform today will be automated via hardware, software and combinations of both".

"Decision support" for doctors will likely change. Artificial intelligence has already shown itself able to outperform physicians. But the report cautions that robust clinical evaluation is required before rolling out algorithms and further comments that existing hospital facilities are such that they "reduce the ability to adapt to new ways of doing things".

Discussions on the increasing use of advanced technology will also need to consider resourcing issues, including those relating to skills as well as costs, as is shown when the report later discusses the development and use (or not) of information technology (IT).

We have powerful national assets [like the National Health Index] but no funding or resourcing for them to be effectively managed, modernised or even used. (Paraphrased stakeholder conversation) [p 240]

A prevailing myth – not just in health – is that by moving services into the cloud IT can reduce costs. The reality is that transformation does not happen without investment. Competition with other spending areas, from property to healthcare delivery, is also cited as an issue. [p 259]

Increasing digital literacy and skills across the existing health and disability workforce is essential and requires investment… Health will also need to compete with other sectors for new workforce roles, such as experience designers, "Agile" coaches, and data scientists, and will need to realign itself to become and remain attractive in a globally competitive environment for talent. [p 260]

Facilities and equipment are essential to the provision of services and investment capital is needed to ensure facilities and equipment are fit for purpose. Unfortunately the current state of DHB assets is not good and there is little in the way of long term planning which can give any confidence that the problem is under control. [p 263]

There is no recognition of the importance of distributed clinical leadership in ensuring the most effective use of new technology.

Future hospitals will work more collaboratively

There is a strong support in the report for integrating services, specifically integration between hospitals and community-based services, and specialist services operating as comprehensive networks.

Hospital and specialist services will need to work as a much more integrated network and more seamlessly with Tier 1 if real progress is to be made. [p 177]

If New Zealand is to develop a system that operates effectively with equitable outcomes throughout, it must first operate as a cohesive, integrated system that works in a collaborative, collective, and cooperative way. Behavioural and attitudinal changes are needed. These changes need to be led from the centre and applied consistently throughout the system. [p 91]

Examples of integrated services in New Zealand are mentioned, including the "Canterbury model" - with praise from the King's Fund - and developments at Hawke's Bay DHB where teams are supported "to think laterally across secondary, primary, and community care".

But there is little examination of what is needed to implement integrated care, or in particular what lessons can be learnt from Canterbury, given, as the King's Fund says, it is a "small stock of examples of organisations and systems that have made the transition from fragmented care towards integrated care with a degree of measurable success".

There is a broad statement later in the report regarding workforce issues about the need for a common purpose and having a shared set of values:

It will be important also that those working in the system work more collaboratively and cooperatively towards a common purpose and have a shared set of values. It should not be assumed that those working in the system, or governing the system, will all join with this knowledge or sense of purpose. Induction processes should be strengthened, and organisations should consider on a regular basis how they are demonstrating these values and contributing to the overall system as well as to their own profession or organisation. [p 235]

This would be consistent with approaches taken in Canterbury. However, rather than highlighting the importance of engaging staff and supporting distributed clinical leadership, the report suggests the key barrier to integration is fragmented funding arrangements:

DHBs are in theory responsible for integrating these services together and with hospital services. However, with such an uneven mix of funding sources, it is unsurprising that service delivery remains fragmented. In addition, much of DHB spending in Tier 1 is through nationally negotiated contracts, limiting local control. [p 119]

There is no doubt different funding streams are not helpful (but not entirely insurmountable, as Canterbury DHB has shown), but the issues we identified, and the King's Fund has largely identified, concerning distributed clinical leadership do not appear to have featured in the Panel's thinking.

"Distributed leadership" is mentioned once in the report in a section on roles and relationships [p 57]

It is now widely recognised that healthcare systems are "complex adaptive systems", in which the impact of any single change or movement in one part of the system is unlikely to be linear or predictable on another part. As the report acknowledges, the most effective complex adaptive systems share two characteristics:

- *a clearly defined purpose with effective feedback loops, which make the systems highly adaptable*

- *distributed leadership that passes control from one to many. This is generally more effective than traditional, hierarchical ways of operating; 'command and control' systems seldom work in these systems.*

Neither of these characteristics are very evident in the New Zealand system.

The report says nothing more about complex adaptive systems. However Panel member Professor Peter Crampton, at a seminar in Wellington in October 2019, spoke of the importance of recognising the often unpredictable consequences of introducing policies in complex adaptive systems, where there may be "no clear line of sight from policy to outcome". He also spoke of the critical importance of integration as a "prerequisite" for implementing effectively new models of care.

There is a case, here, for joining some dots: a prerequisite for achieving a more effective, equitable system is hospital-community integration; a prerequisite for integration is distributed clinical leadership; a prerequisite for distributed clinical leadership is having adequate workforce capacity.

A plan for hubs and spokes?

The report refers to a 2013 report produced by the Future Hospital Commission in the United Kingdom "that is still highly relevant". It describes a new model of care based around a Medical Division operating across the wider health system, an acute care hub focusing on patients likely to stay less than 48 hours, and a clinical coordination centre backed up by a single electronic health record. The report also recommends seven-day care wherever the patient needs it, including "outside the walls of the hospital".

Work to develop a Long-Term Health Systems Plan (LTHSP) is discussed with a focus on "designing clinically and economically sustainable service configuration options for metropolitan, provincial and rural settings".

The plan explored the relationships between service configuration, population size, demographic and geographic distribution, topography, access and health outcomes, and macro-service configurations across New Zealand. The plan was premised on the following changes in service settings that have been emerging internationally and in New Zealand:

- *increased health care at home*
- *'community health centres' to provide one-stop-shops, including specialist outpatient services and diagnostic support*
- *'local hospitals' for emergency medicine and non-complex services*
- *'major acute hospitals' for complex emergency medicine and complex inpatient care. [p 199]*

The report comments that in other jurisdictions, networking of hospitals is common, "with some highly specialised services being consolidated in centres of excellence to ensure a critical mass of patient numbers".

A hub and spoke model is an approach being adopted to configuring services across tertiary, secondary and community settings, increasingly supported by telemedicine. [p 199]

Intermountain Healthcare in the United States is given as an example, including a wide range of services provided and, on the face of it, some significant achievements.

However, the report questions whether such approaches would work in a sparsely populated country and may result in long travel distances for some communities or poorer access to services.

Questions of transferability, and context, could equally be asked of other overseas examples of models and initiatives the report highlights. Intermountain Healthcare, for instance, not only has the advantages of geography and location but also significantly more staffing than in New Zealand. Its website indicates its client base is less than 20% of New Zealand's population but employs, for example, 35% of the number of New Zealand general surgeons, 50% of cardiothoracic surgeons and more than 80% of our DHB cardiologist workforce.

More appropriately, New Zealand's child cancer services are recognised as a service successfully using a networked model.

There is no recognition of the critical importance of distributed clinical leadership in successful networking and regional collaboration.

Discussion needed on prioritising health spending

The report says "there is considerable interest in how to prioritise health spending with constrained budgets, and in face of the increase in new health technologies…"

DHBs have signalled more open, public discussion is needed about the "variety and level of services that are clinically and financially sustainable". We have been here before, of course, and the report outlines a number of attempts to establish some form of "prioritisation" framework since the early 1990s, all of which have ended in the too-hard basket. There is understandable caution:

While nobody is proposing developing an explicit list of funded services, it is clear that more objective frameworks and transparency in decision making are required to achieve consistency and fairness in the system. During Phase Two, we will consider approaches in international jurisdictions for their applicability in the New Zealand context. [p 195]

The work of the National Institute for Health and Care Excellence (NICE) in England is given as an example for consideration. NICE's work programme is expected to shift over the next few years from developing new guidelines to updating those already developed. It may also extend its role to assisting other jurisdictions to contextualise guidelines for local use.

Should this lead to a public discussion on rationing, as proposed by the DHBs, it would need to go hand-in-hand with a discussion on funding with particular reference to the Government's fiscal policy and its aims for population well-being.

Health workforce pressures

In a chapter on workforce issues the report claims: "Workforce projections suggest the current model is unsustainable". It estimates the current health and disability workforce comprises 8.5% of New Zealand's total workforce but current trends would see that share increase to an "unsustainable" 10% by 2030, based on what it concedes are simplistic projections. However, OECD data indicate New Zealand's health and social care[1] workforce accounted for 10.8% of the total workforce in 2015 while the employment share in Scandinavian countries, Finland and the Netherlands – countries with policy emphases on promoting well-being – ranged from 15%-20%.[x]

The report acknowledges "high stress levels" and "persistent workforce shortages" in several areas, giving a number of examples, but not including specialists. It also acknowledges potentially high retirement rates in some workforces, such as general practice, and a heavy dependence on overseas recruits in medicine and nursing, noting global workforce shortages that could impact on both recruitment and retention.

The health and disability workforce is committed, but is stretched and stressed. Some members of the health workforce are burnt out. Discussions with DHB executives suggested that sick leave is notably higher than in the past and annual leave balances are increasing for some workforces – both signs of a stretched workforce. Recent negotiations with unions focused on roster changes and additional staff to support safer work practices. [p 225]

The report acknowledges ASMS' study of burnout among senior doctors and dentists, along with studies of other New Zealand health professions (midwives, nurses, and addictions workforce) showing similar results.

Pressures on training are recognised as "challenging" with difficulties finding enough placements and supervisors for the growing number of undergraduate and postgraduate clinical placements required to develop the workforce.

There is a call for action on several fronts: to urgently address "significant" workforce pressures; to address projected workforce shortages; to achieve better work-life balance; to attract new workers and "ensure the existing workforce is effective even as they age".

At the same time: "As the health and disability system is put under increasing pressure staff productivity will become more important".

Calls for better workforce planning reflect on the now defunct Health Workforce New Zealand's (HWNZ) failure to achieve much of what it was set up for, though its former executive Chair told *New Zealand Doctor* earlier this year there were no resources to implement the agency's approaches in the last few years. The Review report does not discuss resource issues in its calls for better workforce planning. To put this in context, when HWNZ was set up as part of the Ministry of Health

[1] Defined as a composite of human health activities, residential care activities (including long-term care), and social work activities without accommodation

in 2009, the Ministry had 1430 full-time equivalent (FTE) staff; in 2018 it had 1011 FTE (nearly 30% fewer). HWNZ has now been replaced by a Health Workforce Advisory Board, which will work with a Health Workforce Directorate within the Ministry of Health.

That aside, the suggestions raised in the Review report are essentially the familiar "changing models of care" approaches adopted by HWNZ, attempting to seek sustainable solutions by redesigning services and re-engineering the workforce.

Better planning for future supply, recognising the changing nature of work, is essential. This requires more deliberate thinking about how the current workforce is used and the new roles required… [p 211]

More integrated workforce forecasting and planning that is informed by robust data and considers unmet need, new models of care and ways of working, and future roles and workforce mixes is desired. [p 218]

As ASMS has argued in its submissions, the models of care for which there is best evidence are those requiring sufficient specialist workforce capacity to enable genuine patient-centred care, integration of services and distributed clinical leadership.

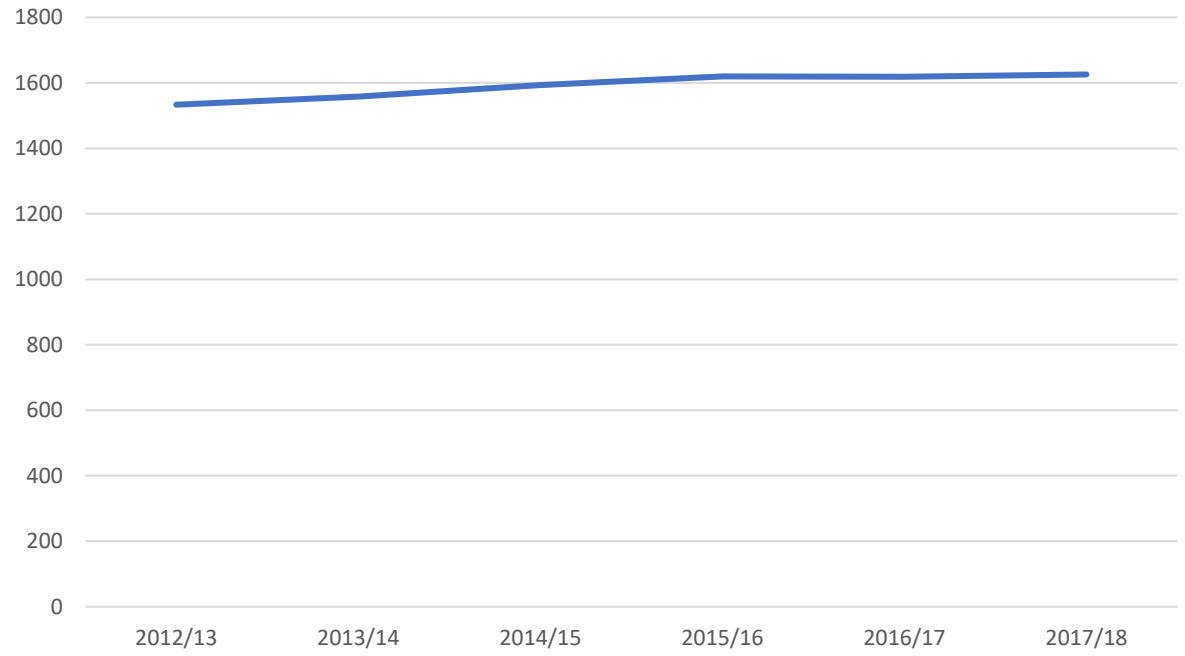
However, in a section discussing data sharing, the report comments: "National collections are sometimes viewed as an overhead rather than as an enabler" and the same could be said for some of the comments in the report about the medical workforce.

Referring to DHBs' "unsustainable financial deficits", the report says: "Personnel are the largest cost to DHBs, making up around 63% of the cost of providing services. Since 2009, a greater share has been spent on medical personnel and a smaller share on management and administrative personnel, infrastructure, and non-clinical supplies". [p 83]

And:

Clinical workforces are expensive, and medical workforces are even more expensive. Senior medical officers spend relatively less time with patients as, over the years, employment conditions have changed with longer annual leave periods (five weeks), time for study (including a substantial training and travel budget), and assigned non-clinical time. Analysis of the accounts of a typical DHB suggests hospital costs have grown 20% over a five-year period, against funding growth of around 10%. Medical staff costs are by far the largest category of cost increase at just over 45%. Spending on information technology and non-clinical supplies increased by only 5%. [p 204]

It is not clear why the Panel uses the accounts of a "typical DHB" to analyse DHB cost trends (unadjusted for inflation or population growth) when the data is readily available from the Ministry of Health. Figure 2 presents the trends in medical personnel costs adjusted for CPI inflation and demographic growth, including the Ministry's weighting for aging. It amounts to a 6% growth over five years.



Sources: Ministry of Health (DHB Financial Schedules; Demographic Growth Estimates, including a weighting for ageing) and Treasury (CPI data)

Figure 2: Real cost of DHB medical personnel - excluding the growth due to demographics and CPI increases ($m)

Further, the Panel's above comments appear to show a lack of understanding of the absolute necessity of non-clinical time, as endorsed by the Council of Medical Colleges. ASMS surveys have shown many SMOs do not have adequate time for non-clinical duties, including continuing medical education. Yet all the trends, including rapidly expanding technology, have complex ramifications for practice. Ring-fenced time – including activities such as administration, departmental meetings, formal teaching, audit and quality assurance activities, professional development and time to think – is becoming increasingly important. It enables SMOs to practise medicine in accordance with best practice and safety standards.

In further comments that are inconsistent with the Panel's advocacy of well-being for staff and patients, the recent DHB-RDA dispute and eventual settlement for resident medical officers (RMOs), which effectively keeps patients and doctors safe, is not recognised as a positive outcome but instead the report focuses on the cost: "It is likely that the national impact will be approximately 300 full-time equivalent RMOs, at a cost of more than $35 million". Nor does the report recognise the particularly aggressive, destructive approach taken by DHBs in that dispute (with at least tacit support from the "centre"), requiring intervention by the Employment Relations Authority, or the ASMS-initiated attempts to bring the parties together for constructive engagement, which the DHBs rejected.

For many doctors those experiences and the kind of comments mentioned above are the reason for their disengagement from management, which leads to a clinical-management cultural divide. In the same vein, there are many comments in the report indicating a "resistance to change" or "lack of flexibility" by health professionals, usually without any contextual detail of what is being proposed. It

is difficult to believe the vast majority of senior doctors would resist change that would clearly benefit the patient.

If there is a hint of underlying cynicism about doctors in the report, the same might be said about its attitude to unions, with a skewed view of union-employer engagement.

Discussing increasing pressure for a greater range of services to be delivered in extended hours and during weekends, the report comments:

This will require additional workforce rather than expecting the current workforce to simply work more hours. DHBs report the current mix of employment agreements and the specificity of terms included in them makes it challenging to make even small changes in working arrangements (for example, extending theatres by one hour per day requires discussion with multiple unions). A more strategic way of engaging with unions will be required to effect the changes likely to be required. [p 224]

Leaving aside the questionable accuracy of the example, the comment overlooks the fact that employment agreements are arrived at through engagement and negotiation. It is inevitable that with continuous austere budgetary measures putting pressure on all parties to negotiate agreements in virtual "Hobson's Choice" situations, that such engagement becomes at times challenging and fractious. Unions and employers are in effect being tasked with making the most of a bad (government-controlled) lot. Hence:

Unions are concerned that their members are remunerated fairly, well supported to complete training and professional development, and work in safe environments. Key issues raised in discussions included workplace stress, bullying, fatigue, safe rosters, and future workforce roles and numbers. A lack of trust in employers has resulted in additional clauses being built into the multi-employer collective agreements so employers can be held to account for delivering on commitments made during bargaining.

But:

Employers, in particular DHBs, are concerned that so much specificity in agreements makes it challenging to meet their service delivery commitments… [224]

The report says the tripartite Health Sector Relationship Agreement between the Government, DHBs, and the New Zealand Council of Trade Unions and its major health affiliates has produced "little evidence of constructive strategic approaches to workforce issues being the norm" and: "Unions and employers will need to work differently if the workforce challenges are to be addressed" – omitting the most influential party. [p 225] It asks:

How can the strategic partnership between unions and sector employers be strengthened so the system can operate in ways that best suit the needs of consumers while at the same time protecting the rights and wellbeing of workers? [p 275]

Given ASMS is already extensively engaged with DHBs, including meetings involving senior DHB/ASMS representatives at least three times a year in every DHB, among other forums, it is hard to imagine how more engagement could occur or what more it could achieve in the current environment.

Direction for change

The need for high-performing Tier 2 services will continue to grow for the foreseeable future. This will include the need for both hospital-based services and specialist services delivered in outpatient, community, and virtual care settings. [p 206]

Broadly, the Panel's suggested directions for change for hospital services include:

- The development of a long-term health service plan which would address which services would be provided nationally, regionally, and locally.
- Continuous quality improvement becoming a prominent driver of service design and delivery. "Clinical leadership, in both design and implementation, will be essential, as will be the need to respect and incorporate cultural values and consumer input."
- Hospitals and specialist services operating as a cohesive network.
- Hospital and specialist services operating on a 24/7 or extended-hours basis for a wider range of services.
- Rural services being supported by enhanced remote access to specialist services, enabling a wider variety of planned services to be accessed locally. "The system also needs to be designed to reduce the need for patients to travel to outpatient clinic appointments and to better support generalist-led models of care for rural communities."

There is also discussion about the need for developing a bigger generalist workforce, including general practitioners, general medicine specialists, disciplines such as geriatrics, and "vocationally registered doctors in secondary care who work with the undifferentiated patient within their discipline".

The report says there is a growing challenge for the health system in balancing specialism with generalism. As the population ages and more people present with undifferentiated illness and multiple chronic disease, most hospitals will require strong generalist medicine.

As the Council of Medical Colleges noted, certain patients benefit from seeing a subspecialist as early as possible. However, the report says the Council goes on to note:

"…for the undifferentiated condition early referral or presentation to a sub specialist is likely to waste resources; and may risk premature closure on diagnosis and treatment that will disadvantage the patient. Also, as the population ages and more people present multiple system disease, highly skilled sub specialists may lack the currency to accurately diagnose and manage important co-morbidities". [p 204]

A deliberate approach to leadership development is needed

The report says a theme that emerged in discussions about why an initiative or organisation stood out as a success was quality leadership and management. “Frequently, this involved a small number of highly committed people who had a vision that resonated with others and around which new ways of working were identified and introduced in a staged manner.”

Concerns were raised about whether, given the relatively small size of the New Zealand population, there was sufficient leadership and management capability and capacity for the number of existing roles and organisations.

The report says other jurisdictions have seen greater investment in training schemes focused on leadership and management skills. New Zealand needs to do the same.

Work undertaken during Phase One of the Review has clearly demonstrated that the key determining factors in what distinguishes a successful system from a dysfunctional one are the:

- *quality of the leadership at all levels*
- *cohesiveness of the culture that drives the behaviours throughout the organisation.*

We observed many examples of great leadership and culture-driven behaviour, both in New Zealand and internationally, but the variability around the country or even within a DHB is immense. We also recognise that in a country of almost 5 million people the pool of people with high-level leadership skills is limited. This means, first, we must design a system appropriate for a small country and, secondly, we must take steps to increase the leadership capability within that system. [p 59]

This is likely to be a factor in any recommendation on future DHB numbers.

Facilities require significant investment and better management

The report refers to the well-discussed lack of investment and maintenance in facilities by DHBs, in part to help balance their books, and acknowledges that significant capital investment will be required over the next 10 years to support change and address assets that have not been adequately maintained.

The process for justifying, designing, developing and commissioning major health facilities is complex and specialised. The section notes the scarcity of expertise in New Zealand, and questions whether these activities should continue to happen in multiple sites or whether some consolidation is preferable [p 263]

The report says shortcomings in DHB capital management earlier identified by the Auditor-General require urgent attention. The Auditor-General has observed: “Too few people have the skills for preparing robust business cases, and the unpredictable availability of capital funding makes it difficult to set up core capacity. This means that decisionmakers rely heavily on consultants, advisors, and experts”.[xi] The report is uncertain about how this might be addressed.

A proposal suggested by some commentators is to place the ownership of DHB hospitals into a central Crown agency with the necessary governance and capital management expertise. It would receive capital funding for new hospitals, bear the costs of depreciation, and would be responsible

for long-term planning for public hospitals. The critical aspect of such a proposal would be a process of thorough and robust engagement with DHB boards, clinical staff and the community, providing needs assessment plans. In essence it would be a partnership bringing together experts in capital management and planning with experts in healthcare and the knowledge of those who receive the care, backed by the government as funder.[xii]

Next steps

The process from here will involve the Panel calling on people in the sector to form various working groups to develop detailed options.

As options are developed, opportunities will be provided for interested parties to comment before the final report in March 2020. Phase Two of the review will focus on developing recommendations, "which will require us to answer specific questions in each of our focus areas". They include, "but are in no way limited to", the following:

Settings

- In taking a Tiriti/Treaty based approach in health, what are the implications for the role of Māori and iwi in leadership, governance, and decision-making at national or local levels, and how should these roles be provided for?
- What is an appropriate set of values and principles to guide the operation of publicly-funded health and disability services in New Zealand?
- How does New Zealand build health leadership and enforce accountability for performance?
- Where should responsibility lie for developing and implementing a system-wide long-term plan?
- What is the right balance between national decision-making to guide the system and local autonomy to ensure services are designed to meet the needs of all communities?
- How can local communities have a meaningful say in how services are planned and provided?
- Is continuing with governance by majority elected boards the most effective way to improve accountability or foster community engagement?
- Is the best way to achieve more efficiency and more equitable outcomes within available resources to have fewer DHBs, DHBs with different functions and/or more sharing of resources at regional or national level?
- Should development of the health and disability system into a cohesive, integrated system with greater clarity of mandate be driven by the Ministry of Health or a different agency?
- How should funding regimes change to provide more certainty to providers, accessibility to consumers, and accountability?
- How do we ensure the mix of public and private business models in the sector operate effectively together, better manage conflicts of interests, and result in a mix of service provision that improves equity of outcomes?
- What accountability mechanisms should be applied to ensure improved health outcomes and financial balance are achieved?

Services

- If population health is to be more central to planning and delivery, should this change be driven by the relevant DHB or at a regional or national level?
- How do we ensure that what consumers value is accorded highest priority?
- How do we ensure Māori communities have access to appropriate kaupapa Māori services?
- How do we ensure mātauranga Māori is properly reflected in service provision?
- How should the co-payment regimes and eligibility criteria for access to various Tier 1 services be rationalised?
- Given the desire for more reliance on integrated community health hubs, how should these be funded?
- Do PHOs in their current configuration add value to the provision of services?
- Given the increasing numbers of people living with disability, how can further fragmentation of support systems be avoided?
- How do we increase the visibility of people with disability to ensure the system properly addresses their health needs, as well as needs for disability support?
- How can better use be made of technology and local resources to ensure that rural communities have access to a full range of services?
- How can continuous improvement be embedded into hospital systems with clinicians actively involved and accountable for building a networked system so the public has confidence that best practice will be applied throughout the country?
- Who should be accountable for decision-making about new technologies, new services, and the development of guidelines and pathways and for setting thresholds for treatments? How can international work be incorporated and localised?
- How does New Zealand ensure its hospitals operate as a network delivering a fair distribution of complex services and better support to the provision of local services in smaller hospital and community settings?

Enablers

- How can the strategic partnership between unions and sector employers be strengthened so the system operates in ways best suited to the needs of consumers while at the same time protecting the rights and well-being of workers?
- How can training and regulatory regimes develop to allow the workforce to gain and use the skills needed to adapt to the changing demand for services?
- How can the workforce become more representative of the communities it serves?
- What needs to change to make multidisciplinary teamwork the norm rather than the exception?
- How can data stewardship regimes be developed to give communities confidence their data will be protected and used appropriately and with their consent, while also allowing appropriate sharing of information throughout the system?
- How can work done in other jurisdictions in respect of data standards, identity management, inter-operability, and the like be best used?
- Would a centralised model for infrastructure projects be more effective?

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