Information Research - Vol. 31 No. iConf (2026)

Between reform and reality: institutional logics of data and digital in New Zealand's health system transformation

Lesley Middleton, Jocelyn Cranefield, and Verna Smith

DOI: https://doi.org/10.47989/ir31iConf64137

Abstract

Introduction. We report on an investigation into the strategic role of data in improving health equity during Aotearoa New Zealand's 2019–2025 health reforms, using institutional logics to uncover stakeholder differences and barriers.

Method. Semi-structured interviews were conducted with fourteen professionals involved in the strategic use of health data and technology. Participants included government IT/data policy leads, senior IT/data leaders, Māori data governance experts, general practitioners, and IT health industry representatives.

Analysis. We identified a framework of eight institutional logics shaping stakeholders' visions of data ideals: public good/equity logic, bureaucratic logic, market logic, professional logic, innovation logic, indigenous sovereignty logic, liberal-individual rights logic, and national sovereignty logic.

Results. Tensions between differing logics surrounding the ideal role of data in system reform help explain implementation challenges. These included balancing individual and collective data sovereignty and contrasting views on ownership of patient data as a public, commercial or professional good.

Conclusion(s). Whilst national shared systems have potential to increase equity through improved data flow, key implementation issues can be explained by a legacy of health data power struggles embedded in different institutional logics, intensified by fragmentation and underinvestment. Adaptive governance is needed to balance logics in delivering the vision for transformation.

Introduction

Governments worldwide are counting on digital health to deliver more efficient, equitable care. Success hinges on more than technology: it requires reliable, integrated health data and strong governance to ensure timely insights from clinical and administrative records, patient-reported outcomes, and social and economic health determinants. This paper examines the experiences of implementing data and digital reform in the Aotearoa New Zealand (ANZ) health system during 2019–2025. Although not positioned as a digital transformation initiative per se, the health system reforms, and notably the goal of improving equity, were strongly predicated on improvements in data and digital technology (Health and Disability Review Transition Unit, 2021). Two years into the sector reform programme, following a change of government, the budget for data and digital health initiatives was cut by $330 million (Digital Health Association, 2024; HiNZ, 2024), and a third of IT roles were cut (Health New Zealand | Te Whatu Ora, 2025). Our focus is not on the significant disruptions these events caused but rather on identifying the key concepts and perspectives that different strategic actors used to frame the divide between the ideals of data and digital reform and the reality of the prevailing health data infrastructure.

Our study asks: (1) How do strategic actors frame data's role as an enabler within health sector reforms, and why do these perspectives differ? and (2) How do these perspectives inform barriers to transformation and implications for data governance? Drawing from secondary sources and interviews with 14 strategic actors, our analysis traces how different institutional logics were enacted, blended, and debated through reform stages. Using the lens of institutional logics, we identify key differences in strategic narratives.

Literature review

Improving country-level capabilities in the use of health data and digital technologies is seen as a key enabler of health system reform. The effective use of use of digital health technologies (DHTs) and data is seen as offering promise in helping reduce structural inequalities that disproportionately affect marginalised groups, improving access and quality of care and leading to greater health equity (Bitomsky et al., 2024; Kim & Backonja, 2025). Therefore, successful digital transformation of national healthcare systems is particularly reliant on effective data governance (Health New Zealand | Te Whatu Ora, 2021; OECD, 2019). OECD estimates the health and economic benefits could reach USD 600 billion annually (OECD, 2019). However, although many countries have an abundance of health data and advanced technologies, opportunities to improve citizens' health are underutilised, and the health sector trails behind sectors such as education, media, banking, finance and aviation in realising the potential offered by use of data and digital technology (OECD, 2019). Barriers include outdated institutional structures, fragmentation, siloed thinking, and chronic underinvestment in data management, leaving healthcare 'data rich but information poor' (OECD, 2019). Nonetheless, there is considerable agreement on the state of data governance and policy required to enable system-level improvements, with literature enumerating a range of normative prescriptions for the role of data in an optimal healthcare system. These are outlined below, followed by a summary of key tensions, notably relating to Indigenous data sovereignty.

At population level, data needs to be granular so it can be disaggregated by categories such as age, ethnicity, and location. This is significant to health reform because 'human health and well-being, and the unequal opportunities to achieve them, are driven not only by medical, biological, and genetic factors but, increasingly, by social determinants of health' (Wang & DeSalvo, 2018, p. 930). Granularity enables pattern detection, equity focused interventions, and targeted resourcing; ethically linking deidentified health data with education, housing, environmental, and social services (Wang & DeSalvo, 2018).

The sensitive nature of health data requires strict standards and robust security measures to ensure responsible data use, but on the other hand, reusing health data is seen as vital for advancing research in health and medicine. Therefore, it is suggested that national laws should support secondary use while upholding principles of fair and ethical data governance, and policy makers need to stay abreast of privacy and security-related technologies and issues (Van Kessel et al., 2024). An optimal health system would preserve data privacy through robust legal, technical, and ethical safeguards for data security and use to build trust and support democratic norms (Floridi & Taddeo, 2016).

Recent developments in mobile health technologies (for example, smartphones, wearable devices, and sensors) have demonstrated that digital tools can be used to actively gather and share patient information, supporting more effective patient management (Itchhaporia, 2021). Concurrently, the concept of what constitutes health data is in flux (Vayena & Blasimme, 2018). As '*health data*' expands from clinical, public health, and research sources to environmental exposure, lifestyle, socioeconomic, and behavioural data from apps and social media, systems are shifting from fragmented repositories to interconnected data (Schneble et al., 2020). However, for transformation of healthcare to occur there needs to be widespread sharing and exchange of health data to enable open, two-way communication between patients, healthcare providers, and digital technologies. This will require strong data governance to ensure secure and consistent data sharing across the system (Itchhaporia, 2021). In practice, unconditional trust in system level health data cannot be assumed: A study in Norway of the sharing of a Summary Care Record found that practitioners needed to critically assess its trustworthiness (Lundhaug et al., 2024). Trust also affects willingness of GPs to share health data in practice. A study by Varhol et al. (2022) identified GP concerns relating to lack of trust, governance and secondary use that hindered data sharing.

Further, the philosophy of health data flowing freely is itself contested. Data sharing and control involve key tensions. Digital health is increasingly embracing the reuse of anonymous open health data (Seastedt et al., 2022) which offers, for example, the ability to use machine learning to create new insights. Sharing and reuse of health data for secondary purposes is becoming increasingly important to advance public health, personalised medicine, and research and development (Cascini et al., 2024). However, sharing and related trust is deeply complex, tied to data nature, intended use, and recipient (Cascini et al., 2024). Notably, the open health data movement is in tension with Indigenous data sovereignty efforts. Indigenous communities worldwide are asserting their rights to govern how their health data is accessed and used as part of their broader pursuit of self-determination (Cordes et al., 2024; Kukutai et al., 2023). The International Indigenous Data Sovereignty Interest Group introduced the CARE Principles—Collective Benefit, Authority to Control, Responsibility, Ethics (Carroll et al., 2023)—challenging conventional open data models by insisting openness be balanced with Indigenous rights to control and benefit from their data (Carroll et. al. 2023).

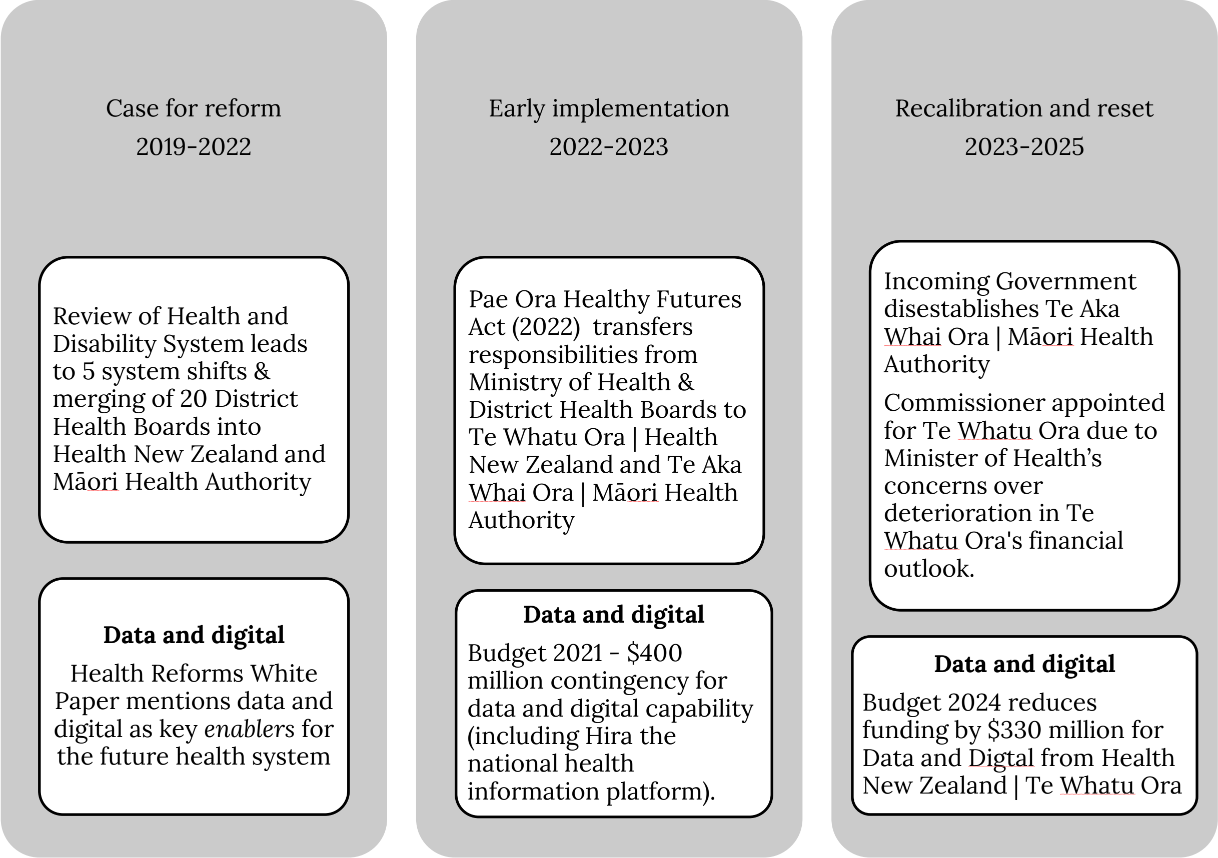
The ideal state of data in a future health system is often seen as more citizen centric and citizen controlled, with individuals having access to and varying degrees of control over use and sharing of their health data to support autonomy, informed consent, and civic trust (Liddell et al., 2021; Mikk et al., 2017; Sonin et al., 2023). However, in contrast to western views of privacy based on individualism, indigenous concepts of privacy are inherently collective (Kukutai, 2023). In New Zealand, Indigenous data sovereignty is represented as Māori Data Sovereignty (MDS). MDS is closely linked to tino rangatiratanga (self-determination), a right affirmed in Te Tiriti o Waitangi, the foundational treaty signed in 1840 between the British Crown and Māori chiefs. Te Tiriti establishes self-determination for Māori and their taonga (treasures). Data about Māori people and communities including iwi, hapu, and whanau is regarded as taonga requiring culturally appropriate care and protection (Hudson et al., 2017; Lilley et al., 2024; Te Mana Raraunga, 2018) Māori data governance is grounded in whakapapa (genealogy), collective wellbeing, and relationships with value being placed on the authority of iwi, hapū, and whānau to determine appropriate use (Te Mana Raraunga, 2018).

Health data governance must navigate these tensions and ethics to enable system level transformation and advance equitable outcomes.

Study context

ANZ's health system is primarily publicly funded, with hospitals run by public entities and primary care by a mixture of non-government organisations and private businesses. At the time of study, health data was stored across distributed in-house servers, legacy vendor systems, and cloud options. The 2021 health reforms were kickstarted by an external review of the whole of ANZ's health and disability system (Health Disability System Review, 2019). During the finalisation of the review, the experience of Covid-19 contract tracing and the immunisation roll-out highlighted the speed at which improved data exchange was possible (Stats, 2021). Noting that only 2.3% of the total health spend was allocated to IT — compared to a global health industry average of 3.5% to 4.6% — the *Interim Report* of the Review (2019, p. 252) identified several areas for improvement. These included the need to address regional disparities in data and digital infrastructure, a fragmented IT vendor landscape with over 150 active providers, and the proliferation of unofficial systems developed by individual clinicians. The health reforms aimed to correct an overly complicated and fragmented system of health service provision, and was galvanised by an accumulation of evidence regarding the persistence of inequities in health outcomes for Māori (Tenbensel et al., 2023). Issues of Māori data sovereignty were woven into wider recommendations for increased Māori self-determination in the design and delivery of the ANZ health system.

The reforms abolished 20 District Health Boards, centralising hospital, primary, and community care under Te Whatu Ora (Health New Zealand) and Te Aka Whai Ora (Māori Health Authority) to achieve '*pae ora*'—healthy futures for all (Health and Disability Review Transition Unit, 2021). Policy directions encompassed '*five critical system shifts*' with data and digital technology singled out as an enabler of these shifts. Figure 1 outlines the key features of three distinct stages of implementation, (1) the case for reform (2019-2022); (2) early implementation (2022-2023); and (3) recalibration and reset (2023 -2025).



Case for reform
2019-2022

Review of Health and Disability System leads to 5 system shifts & merging of 20 District Health Boards into Health New Zealand and Māori Health Authority

Data and digital

Health Reforms White Paper mentions data and digital as key *enablers* for the future health system

Early implementation
2022-2023

Pae Ora Healthy Futures Act (2022) transfers responsibilities from Ministry of Health & District Health Boards to Te Whatu Ora | Health New Zealand and Te Aka Whai Ora | Māori Health Authority

Data and digital

Budget 2021 - $400 million contingency for data and digital capability (including Hira the national health information platform).

Recalibration and reset
2023-2025

Incoming Government disestablishes Te Aka Whai Ora | Māori Health Authority

Commissioner appointed for Te Whatu Ora due to Minister of Health's concerns over deterioration in Te Whatu Ora's financial outlook.

Data and digital

Budget 2024 reduces funding by $330 million for Data and Digtal from Health New Zealand | Te Whatu Ora

Figure 1: Key features of three distinct stages of implementation

Methodology

We used purposive sampling to recruit fourteen participants central to the health reforms, including Health IT and Data Policy leaders, Māori Data Policy experts, primary care leaders, secondary care IT/Data leaders, and Health IT industry representatives. This allowed us to capture diverse perspectives across the health IT and data ecosystem (see Table 1). Ethical approval was obtained from Victoria University of Wellington's Human Ethics Committee.

We conducted semi-structured interviews lasting 40-60 minutes via zoom. We asked participants about their views on the role of data and digital technology in national system-level reform, the current state of data, and what they saw as key challenges to reaching their stated vision. Interviews were conducted over three rounds aligned with the reform stages displayed in Figure 1. We also analysed secondary data, including policy documents, media statements, and stakeholder hui led by Te Whatu Ora to identify key aspects and goals of policy implementation and the role of data and digital technology in relationship to these goals

After transcription and participant checks, we conducted two iterative rounds of thematic analysis in NVivo. Two researchers coded independently, then merged and refined codes collaboratively. The first round of coding drew on framing theory. We adapted technological frames of reference (MacLeod & Davidson, 2007; Orlikowski & Gash, 1994) to identify frames on data strategy (vision) and data in use (status quo), plus diagnostic and prognostic framing (Snow & Benford, 1988).

Interview Round	Participant ID	Role
1. 2023 (Case for Reform)	Fiona	Data policy expert
	Timothy	Health IT policy expert/Leader
	David	Māori data expert
2. Early to mid-2024 (Early implementation)	Susan	Health IT industry expert/leader
	Colin	Primary care expert/Leader
	Simon	Regional health IT/Data leader
3. Mid 2024-mid 2025 (Recalibration/reset)	Murray	Data policy expert
	Kenneth	Data policy expert
	Manu	Māori data expert
	Sam	Primary care expert
	Sophie	Secondary care/Industry expert
	Stella	Secondary care expert
	Helen	Health data leader
	Eric	Māori health data and Policy expert

Table 1. Interview participants mapped to round and role

Our first round of coding revealed key differences in framing of the ideal data strategy needed for successful reform, linked to major challenges to implementation. In exploring the reasons for these differences, we returned to the literature and identified a synergy with research into institutional logics; specifically, how logics affect the perceived ideal role of data (Pierce et al., 2017). Pierce et al., found that institutional logics inform ideals about data and how it should be used in the context of smart cities (Pierce et al., 2017) We therefore conducted a second round of deductive coding informed by the literature in institutional logics (De Vaujany & Vaast, 2014; Heugens & Lander, 2009; Thornton et al., 2012). Again, we employed an iterative process, individually coding participants' statements about ideal outcomes and issues against types of institutional logics then cross-checking and agreeing on the codes. This led us to identify a framework of eight different institutional logics informing stakeholder views about the role of data. We then focused on analysing how these logics were linked to the different perspectives and how they informed the specific problems highlighted.

Findings

Participants widely agreed that merging 20 district health boards into two national entities would help reduce data silos and was desirable. Many recalled the country's response to COVID-19 as demonstrating optimal national-level data sharing and data-driven decision-making. However, they also agreed that achieving sector-wide transformation in data and digital infrastructure remains a formidable challenge. As Fiona explained,

> *New Zealand Health has about $2 billion dollars of technical debt from underinvestment in digital infrastructure ... to support high-quality data. So, we're already really behind. For instance, many countries have highly digitised hospital systems through electronic medical records, we don't have that. Basically, at all in our hospitals, there are little bits and pieces, but there's not one hospital that's fully digitised. So, we're far behind in some regards... you could write 100 system shifts just about digital and data. (Fiona)*

Institutional logics and their relationship to perceived ideal outcomes

Despite these broad agreements, participants also outlined some differing ideals relating to the ideal state of data in a transformed national health system.

Our analysis used the lens of institutional logics (ILs) to examine data ideals and their interaction in system transformation. Institutional logics (ILs) are deeply embedded norms and value frameworks that guide reasoning and prescribe appropriate conduct. They shape how actors interpret issues, make decisions, and judge legitimacy. Within the context of government policy, ILs inform the design, justification, and implementation of policy interventions by defining what problems are prioritised, what solutions are considered acceptable, and what forms of accountability are expected. These logics are manifested and reinforced through administrative practices, regulatory instruments, and policy discourses (Goodrick & Reay, 2011; Heugens & Lander, 2009; Pierce et al., 2017; Thornton et al., 2012).

Building on this approach, we identified eight distinct sets of institutional logics that underpinned the ideals outlined by participants for data in the context of health system reform: public good/equity logic, bureaucratic logic, market logic, professional logic, innovation logic, indigenous sovereignty logic, liberal-individual rights logic, and national sovereignty logic. These logics are shown in Table 2 in a framework with definitions and exemplary quotes. Different stakeholders drew on different sets of logics in framing their views of data strategy.

Logic and implications for data	Example
Public good/equity logic: Prioritises reducing disparities, data commons, representative data sets, data flows freely	***Most of the reference databases in genomics have come from white European populations... there isn't that diversity captured***... *If we create [a] reference database starting with Māori patients... then that... database becomes a really important tool for precision. (Kenneth)*
Bureaucratic logic: Prioritises control, efficiency, performance, risk management, national standards & systems	*A lot of our data...is locked up by vendors. It's really hard to get access to data and get share it across the sector. But data is the big lever to drive change....* ***If you can surface the data, if you can show comparative performance between clinicians, between hospitals, you can highlight inequities – you can see what's working and what's not***. *(Murray)*
Market logic: Prioritises profit, control, proprietary systems, and data standards	*There are a lot of amazing, incredible programs... in the health system... And partly that's* ***because we've had 20 District Health Boards making their own decisions about IT and what they think will suit them in their communities. So, we have pockets of [good] IT*** *...and some of them are really quite innovative and amazing (Susan)*
Professional logic: Prioritises professional autonomy and efficiency	*Enforcing architectures restricts choice for local consultants. And...* ***clinicians that are not used to that, and don't have a history of working together as part of a national network – they perceive such disciplines as infringing on their autonomy as medical professionals.*** *(Murray)*
Innovation logic: Data as a key source of insights and innovation; free flow of data, patient monitoring	*In terms of data,* ***there is a huge trove of data out there that needs to be collated...We're almost this tipping point with the data... that could be driven to much better use***. *(Colin)*
Indigenous sovereignty logic (Māori data sovereignty): prioritises tino rangatiratanga, self-determination, & tikanga/culturally grounded data governance.	*You've got this emerging [drumbeat] by* ***iwi and other Māori groups saying we want to have better access to data that's related to our ambition in a way that we can answer our own questions and set our own outcomes about what is good in health.*** *(David)*
Liberal-individual rights logic: individuals should have access to, control over, and the right to share or withhold their own health data.	*the goals...[of] everyone having the ability to have a unified healthcare summary;* ***everyone being having access to their own records through patient portals.*** *(Sam)*
National sovereignty logic: Priority of ANZ data residing in ANZ for reasons of security	*There's a strong component there around* ***making sure that health data in the context of AI is being used safely. It's also being stored safely and... retained in New Zealand from a sovereignty perspective***. *(Kenneth)*

Table 2. Framework of institutional logics and their implications for the ideal role of data

We found that each stage of reform was marked by distinct challenges linked to different subsets of institutional logics. Some logics were competing while others were mutually facilitative or additive (Goodrick & Reay, 2011). Below, we outline the key challenges identified during the different stages and examine how these relate to relevant logics as the move from ideals to reality unfolded.

The case for reform stage: balancing logics

The logics beneath the many diagnoses on what was wrong with the current state of data reflected a ***bureaucratic logic*** related to the problems of interoperable systems having led to incomplete and underused health data, and ***innovation logic*** emphasising the value of free data flow for transforming outcomes. A combination of ***market logic*** and ***professional logic*** had resulted in much data being locked up by vendors as part of regional solutions. The call was for a simplified and nationally consistent system resulting in a 'more joined up health service'. Alongside these calls were appeals to public good/***equity logic*** whereby standardisation would improve data flow and thereby reduce disparities between regions and populations:

> *We had...20 DHBs. All running in isolation. They pulled them all together ...that improves the ability for equity, because it means that people are using the same software, the same applications, they've got access to the same data. ...they will have access to the same tools that we have. So [the smaller regions] are not fighting a smaller budget. (Helen)*

A few strategic actors signalled that improved data arrangement would result in new forms of ***innovation***. For those focused on improving Māori health outcomes, the new national structures (particularly the new Māori Health Authority/ Te Aka Whai Ora) provided a way to collect and present more holistic health data beyond the conventional metrics typically used in health reporting.

However, concerns were expressed that from a ***professional logic perspective*** it was important that new data arrangements did not add to the clinical workload and maintained a focus on what will improve for the patient:

> *[With] more levels of flowing of data across the system. ...Will that produce a better outcome at the end of the day? And how do you deal with the workloads that it generates? From a clinical focus as GPs or nurses, the frontline, I'll be sitting here asking, does this lead to more inbox work? Is that of benefit to what I'm doing on a daily basis, in terms of provision of healthcare? If it is, there's probably a positive to it. If it is more work, like, how do you deal with that?* (Colin)

Table 3 sums up the institutional logics' dominant in the case for reform stage. Our data demonstrate a mutually supporting relationship between bureaucratic, public good and innovation logics coupled with a need to balance professional logics where a high value is placed on ensuring time with patients is not eroded.

Logic	Data Ideal	Issues/Tensions revealed
Bureaucratic	Standardisation and benchmarking improves potential of data	**Additive ideas** that certain effects (improved insights and equity) inevitably follow from standardising and centralising data
Public Good/Equity	Data insights used to reduce disparities	
Innovation	Data a key source of insights and innovation	
Professional	Data and systems should support medical professionals in decision-making and focusing on core work	**Resolution required -** change should minimise administrative workload of clinicians

Table 3. Case for reform stage: Dominant institutional logics underpinning participants' visions

Tension between collective versus individual sovereignty

In the early implementation stage the move from patients as passive recipients of care to active managers of their health data (liberal-individual rights logic) was regularly mentioned in tandem with the wider equity aims of the reforms (public good/equity logics) and by Māori for Māori aspirations (indigenous data sovereignty). Indigenous data sovereignty emphasises the rights of iwi/hapu to govern health data, while liberal-individual logic emphasises citizen-level rights. Despite the tension between these logics, Murray observed that in practice these logics were together driving systemic change:

> *…the further you go north, into Northland, the more you see GPs embracing Open Data. That is… a belief that consumers have a right to see their own summary health records, to access to their own data. I see this as linked to Treaty obligations, that iwi have a right to their own data. I think there's something incredibly powerful about this from a reform standpoint because such an expectation and obligation will force clinicians, vendors, and even government to give consumers and communities access to their own data.* (Murray)

As the reforms moved into implementation work was undertaken to develop principles on where Māori data is stored, how it is treated and who has access to it, as well as who controls the narrative that emerges from the analysis. A key interest centred on how best to support Māori health providers and iwi with the analytics they need to make informed population health decisions related to their ambitions.

These early hopes were countered with later narratives on the tokenism of Māori consultation, the implosion of the work programme from the demise of Te Aka Whai Ora and data and digital budget cuts and wasted efforts on '*embellishments of what a document should look like rather than the principles of what it stands for*' (Eric).

Interviews highlighted varying degrees of comfort with data sharing and privacy, shaped by cultural, ethical, and personal values. As one interviewee noted, it is crucial not to make assumptions about what individuals are willing to share or prefer to keep private. He gave the example of a survey in which most patients agreed to share their data with hospitals (many assuming such sharing already happened) but had questions over why pharmacists and ambulances would need their information. The idea that individual health information can be shared if disclosure is authorised by the individual concerned was well understood. Interviewees regularly imagined a future where patients had control of their data and gave permissions for health portal access, extending to '*potentially consumers being able to choose what types of data they want to personally commercialise*' (Fiona).

During the Covid 19 pandemic Māori providers requested the Ministry of Health release individual vaccination data to help them target at-risk communities in a by-Māori-for-Māori outreach campaign. This was initially declined under the Health Information Privacy Code, but a High Court appeal overturned this decision (New Zealand Herald, 2021) because the principles of Te Tiriti o Waitangi (the Treaty of Waitangi) and tikanga (Māori customs and protocols) required the Crown to actively protect Māori health. This experience highlights the complexity of managing tensions between indigenous and individual data sovereignty.

One interviewee expanded on a clash they observed within Māori communities with differing levels of trust around different types of data. They argued that delegating access to the health data of family members to deliver care should be more straightforward. Currently legal justification is needed. They had observed that where data was collected to improve vaccination rates the potential for mistrust was higher, leading to prioritisation of individual rights over indigenous data sovereignty by some Māori citizens:

> *The High Court case [described above], was, I think it was significant…. There's been a lot of mistrust that Iwi can have access to their data.... I've heard people say, well, I want to change my ethnicity with Ministry of Health, so my iwi can't have my data.... I think if we could have delegated access of our health reports...that would be significant.* (*Manu*)

Multiple logics can differentially affect different actors and populations. For Māori, a constellation of logics emerged as implementation progressed, with the balance between these shaped by what sort of health data was involved and what decisions would be made as a consequence (Table 4).

Logic	Data Ideal	Issues/Tensions revealed
Public good/equity	Free flow of data will reduce disparities in health outcomes	**Additive logics** acknowledging governance needs to take account of Māori Data sovereignty and Individual rights.
Innovation	Support health providers with analytics and insights to inform action	
Indigenous sovereignty	Rights to govern and access data of iwi and hapu	
Liberal-Individual Rights	Patients should become active managers of their own data	**Resolution required –**varying levels of trust around sharing identifiable vaccination data for some

Table 4. Early implementation stage: Dominant institutional logics underpinning participants' visions

Differing regional abilities to mediate between institutional logics

A common diagnosis was that the ANZ health system was bedevilled by too many vendor-lead solutions due to the domination of market and professional logics at regional level. The resulting 'uncoordinated buying' and over-engineered local solutions had contributed to a fragmentated data landscape.

> *... when we were 20 DHBs, you know, vendors are like midges... They swarm all over the beast and they sell the same solution in 10 different formats to 10 different areas who can't afford it, and then they customise it, and it creates cost and complexity.* (*Murray*)

The commercial incentives for industry to own data were cited as a source of both innovation and constraint leading to concerns about how to reconcile these aspects through '*mutually beneficial partnerships*'. Reconciliation could take the form of policy processes providing industry with a seat at the table, taking advantage of their insights and willingness to have a social impact, and appealing to the value of patient benefit (equity logic):

> *… we have had examples... where startups or researchers have used patient data, they've gone on to commercialise their products and are now trying to sell them back to the health service...we know that that doesn't sit well with our patients. … It's not that we don't want commercial gains in industry.... There needs to be ways of making sure that we benefit everyone around the table. (Stella)*

From the start of the reforms the expectation of several participants was that Government would be directive on data standards rebalancing the public good/equity with market logics. Yet, without sufficient skills and forethought it was easy for regional providers to be locked into contracts even if they wanted more interoperability. Further, vendor ownership of data challenged aspirations for ***national data sovereignty*** as data was typically stored in vendor clouds.

As implementation progressed it became more apparent that regions had differing capabilities, resulting in varying approaches to mediating between ***market, professional and public good/equity logics*** over the years. The injection of more resources coupled with strong top-down policy directions represented an expectation, based on ***bureaucratic logic***, that top-down change would flow smoothly. Yet, the history of organically led local change in ANZ had resulted in extremes of capabilities across different regions. Stories of hospital floors being strengthened to cope with the weight of paper data and clinical records stored on thermal paper that faded, were proffered as examples of the legacy problems in some regions. Others spoke of high tolerances in some regions for professional autonomy resulting in '*pet projects that wasted a lot of money that led to nowhere*' (*Simon*).

Eric described an implementation climate in which the former DHBs '*still operated like little governments*', leading to repeated delays. Well-resourced regions, already equipped with functional data systems, had little incentive to engage in approaches designed to support poorer regions struggling with significant data capability challenges. Kenneth was concerned that '*defacto national solutions*' had emerged from the well-resourced regions, overlooking the needs of other regions with the result that:

> *… in a space where there are very few experts these [well-resourced regions] often become the voice for the entire country. And I think that that's probably created this level of discontent. I'm not sure that other regions are feeling listened to. Because the agenda is often being driven by those loud voices that have been, you know, working in the space for a very long time. (Kenneth)*

The diversity of regional data quality highlighted how different local leaders had navigated between ***professional logic*** (a diversity of clinically led data projects) and ***market logic*** (a diversity of vendors) and attempted to give weight to the broader public good gains (public good/***equity logic***) within constrained resources, with varying success. Participants noted that data and digital were often the 'second cousin' with a history of budgets to uplift digital capabilities suffering from '*pilfering and pillaging to …. support workforce and other necessary infrastructure needs*' (*Susan*). Earlier attempts to centralise primary care data never built support because of concerns that results would be used '*penalise or performance manage*' those in primary care highlighting a clash between professional and bureaucratic logics and a lack of trust.

Our data suggest that rather than one logic becoming dominant, different constellations have emerged during different stages. By the later reform stages, it was apparent that the legacy of different abilities to mediate between competing institutional logics had led to a strong disparity regarding the quality and effectiveness of data in use, with islands of excellence in some regions contrasting with a major lack of capability in others.

Discussion

Our focus has been specifically on how strategic actors frame the role of data as an enabler within the ANZ health sector reforms. Increased use of digital health technologies and data is expected to help reduce structural inequities improving access and quality of care and leading to greater health equity (Bitomsky et al., 2024; Kim & Backonja, 2025).

The idea that certain effects (improved data flows and equity) inevitably follow from standardising and centralising data has been countered with the need to acknowledge a range of socio-cultural considerations in health care that could potentially both impede and aid progress (Cascini et al., 2024; Cordes et al., 2024). The concept of institutional logics has proven fruitful to better understand the inherent tensions within all these considerations.

Our work builds on other studies that have explored how health systems need to take account of competing logics (Currie & Seddon, 2022) and the importance of finding areas of alignment and misalignment (Bailey et al., 2020; McDonald et al., 2013; Weerasinghe et al., 2023). In addition, we draw on Goodrick and Reay's notion that institutional logics form constellations whose relative prominence changes across different periods (Goodrick & Reay, 2011). Others have explored how difficulties in implementing IT projects within organisations often occur because of mismatches between the institutional logics of different groups (Kjekshus & Bygstad, 2024; Lagsten & Nordström, 2017). Our focus has been on a system wide change as opposed to an IT project within an organisation. In both contexts, however, the implications for IT Governance are the same; governance needs to be flexible enough to accommodate multiple logics while maintaining strategic coherence. A key question is how does a government balance all these logics to develop an optimal system for governing health system data in pursuit of transformation and equity of outcomes?

Our findings highlight the need to consider the trade-offs between different views of basic data rights such as representation, privacy, access, and ownership. While ideals concerning Māori data sovereignty have made promising progress, we found tensions between liberal-individual data sovereignty logic and Indigenous (Māori) data sovereignty logic. From an operational standpoint, we identified significant disparities in basic data functionality across regions, which severely hindered progress. Not only was advancement uneven, but efforts to standardise functionality nationally introduced further tension. Regions at the forefront of digital capability faced the prospect of relinquishing their carefully negotiated vendor arrangements to align with national standards. This raised critical questions over who bears the costs and who benefits from national data improvements. A data justice lens shines a light on the importance of '*distributive data justice*' and may have potential as a frame to consider these issues (Heeks & Shekhar, 2019). Further research could examine whether such a lens is a valuable way to provide high-level contextual guidance on how to weight the balance of data-related logics in relationship to different stakeholders and their rights.

Conclusion

Our aim in this study was to provide a more nuanced understanding of the data and digital reform dynamics beyond the surface level political events. Beneath political disruptions, stakeholders were attempting to manage the gap between diverse data reform ideals and harsh operational realities. These reform ideals centred on the idea that for transformation of healthcare to occur there needs to be widespread sharing and exchange of health data to enable open, two-way communication between patients, healthcare providers, and digital technologies. Applying an institutional logic lens, we identified tensions to achieving this aim due to issues of data ownership and disparities in data capability. Data ownership concerns reflected deep-rooted questions of power, trust, and sovereignty, while regional capability gaps highlighted uneven digital readiness shaped by differing institutional histories. These tensions underscore the need for an adaptive approach to data governance that can reconcile the diverse logics and capacities within the health system to deliver equitable outcomes.

Acknowledgements

We gratefully acknowledge the funding support provided by Te Herenga Waka—Victoria University of Wellington, which made this research possible. We also extend our thanks to Ruth Weatherall for her assistance as a research assistant. Finally, we are deeply appreciative of all the interviewees who generously shared their time and insights.

About the Authors

Dr Lesley Middleton is a Senior Lecturer in the School of Health, Te Herenga Waka—Victoria University of Wellington, New Zealand. Her research interests include the impact and evaluation of health policy reforms. She can be contacted at lesley.middleton@vuw.ac.nz.

Dr Jocelyn Cranefield is an Associate Professor in the School of Information Management, Te Herenga Waka—Victoria University of Wellington, New Zealand. Her research interests include human-AI collaboration and its impacts on work and wellbeing, managing digital transformation, and data cultures, and governance. She can be contacted at jocelyn.cranefield@vuw.ac.nz.

Dr Verna Smith is a former Senior Lecturer in School of Government, Te Herenga Waka—Victoria University of Wellington, New Zealand. She has published in the areas of primary health policy, social investment, and pandemic policy management.

References

Bailey, S., Hodgson, D., Lennie, S. J., Bresnen, M., & Hyde, P. (2020). Managing death: navigating divergent logics in end-of-life care. Sociology of health & illness, 42(6), 1277-1295. https://doi.org/10.1111/1467-9566.13095

Bitomsky, L., Pfitzer, E. C., Nissen, M., & Kowatsch, T. (2024). Advancing health equity and the role of digital health technologies: a scoping review protocol. BMJ Open, 14(10), e082336. https://doi.org/10.1136/bmjopen-2023-082336

Carroll, S. R., Garba, I., Figueroa-Rodríguez, O. L., Holbrook, J., Lovett, R., Materechera, S., ... & Hudson,M. . (2023). The CARE principles for indigenous data governance. . Data Science Journal, 19(1), 43. https://doi.org/10.5334/dsj-2020-043

Cascini, F., Pantovic, A., Al-Ajlouni, Y. A., Puleo, V., De Maio, L., & Ricciardi, W. (2024). Health data sharing attitudes towards primary and secondary use of data: a systematic review. EClinicalMedicine, 71. https://doi.org/10.1016/j.eclinm.2024.102551

Cordes, A., Bak, M., Lyndon, M., Hudson, M., Fiske, A., Celi, L. A., & McLennan, S. (2024). Competing interests: digital health and indigenous data sovereignty. NPJ digital medicine, 7(1), 178. https://doi.org/10.1038/s41746-024-01171-z

Currie, W. L., & Seddon, J. J. (2022). Stakes, positions and logics: An institutional field analysis of cross-border health IT policy. Journal of Information Technology, 37(2), 165-187. https://doi.org/10.1177/02683962211040513

De Vaujany, F.-X., & Vaast, E. (2014). If these walls could talk: The mutual construction of organizational space and legitimacy. Organization science, 25(3), 713-731. https://doi.org/10.1287/orsc.2013.0858

Digital Health Association. (2024). Budget 2024 produces funding reprioritisation for digital health. Retrieved 13 December from https://www.dha.org.nz/dha-media-releases/373-budget-2024-produces-funding-reprioritisation-for-digital-health/

Floridi, L., & Taddeo, M. (2016). What is data ethics? Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 374(2083). https://doi.org/10.1098/rsta.2016.0360

Goodrick, E., & Reay, T. (2011). Constellations of Institutional Logics:Changes in the Professional Work of Pharmacists. Work and Occupations, 38(3), 372-416. https://doi.org/10.1177/0730888411406824

Health and Disability Review Transition Unit. (2021). Health Reform White Paper Summary. https://www.dpmc.govt.nz/publications/health-reform-white-paper-summary

Health Disability System Review. (2019). Health and Disability System Review-Interim Report. Hauora Manaaki ki Aotearoa Whānui–Pūrongo mō Tēnei Wā. In: Health and Disability System Review Wellington.

Health New Zealand | Te Whatu Ora. (2021). Data and digital infrastructure and capability: Enabling health system transformation. Wellington Proactive release Retrieved from https://www.tewhatuora.govt.nz/publications/data-and-digital-infrastructure-and-capability-enabling-health-system-transformation

Health New Zealand | Te Whatu Ora. (2025). Health New Zealand | Te Whatu Ora releases Data and Digital consultation decision. https://www.tewhatuora.govt.nz/corporate-information/news-and-updates/health-new-zealand-te-whatu-ora-releases-data-and-digital-consultation-decision

Heeks, R., & Shekhar, S. (2019). Datafication, development and marginalised urban communities: An applied data justice framework. Information, Communication & Society, 22(7), 992-1011. https://doi.org/10.1080/1369118X.2019.1599039

Heugens, P. P., & Lander, M. W. (2009). Structure! Agency!(and other quarrels): A meta-analysis of institutional theories of organization. Academy of management journal, 52(1), 61-85. https://doi.org/10.5465/amj.2009.36461835

HiNZ. (2024). Budget 2024 recalls data and digital health funding. Retrieved 13 December from https://www.hinz.org.nz/news/673805/Budget-2024-recalls-data-and-digital-health-funding.htm%20Hinz

Hudson, M., Anderson, T., Dewes, T. K., Temara, P., Whaanga, H., & Roa, T. (2017). " He Matapihi ki te Mana Raraunga"-Conceptualising Big Data through a Māori lens. In K. T. Whaanga H, Apperley M, (Ed.), He whare hangarau Māori - language, culture and technology. (pp. 64–73.). Te Pua Wānanga ki te Ao / Faculty of Māori and Indigenous Studies, the University of Waikato;.

Itchhaporia, D. (2021). Population health: intersecting technology, data, health equity to achieve health care transformation. J Am Coll Cardiol, 78(15), 1569-1572. https://doi.org/10.1016/j.jacc.2021.09.001.

Kim, K. K., & Backonja, U. (2025). Digital health equity frameworks and key concepts: a scoping review. Journal of the American Medical Informatics Association, 32(5), 932-944. https://doi.org/10.1111/1467-9566.13095

Kjekshus, L. E., & Bygstad, B. (2024). Competing institutional logics in healthcare organizations: theorising digitalism. Journal of Health Organization and Management, 38(8), 1299-1315. https://doi.org/10.1108/JHOM-03-2024-0107

Kukutai, T., Campbell-Kamariera, K., Mead, A., Mikaere, K., Moses, C., Whitehead, J. & Cormack, D. . (2023). Māori data governance model. https://www.kahuiraraunga.io/_files/ugd/b8e45c_803c03ffe532414183afcd8b9ced10dc.pdf

Kukutai, T., Cassim, S., Clark, V., Jones, N., Mika, J., Morar, R., Muru-Lanning, M., Pouwhare, R., Teague, V., & Tuffery Huria, L. (2023). Māori data sovereignty and privacy.

Lagsten, J., & Nordström, M. (2017). Conflicting institutional logics in healthcare organisations: implications for IT governance. In Information technology governance in public organizations: Theory and practice (pp. 269-284). Springer. https://doi.org/10.1007/978-3-319-58978-7_12

Liddell, K., Simon, D. A., & Lucassen, A. (2021). Patient data ownership: who owns your health? Journal of Law and the Biosciences, 8(2), lsab023. https://doi.org/10.1093/jlb/lsab023

Lilley, S., Oliver, G., Cranefield, J., & Lewellen, M. (2024). Māori data sovereignty: contributions to data cultures in the government sector in New Zealand. Information, Communication & Society, 27(16), 2801-2816. https://doi.org/10.1080/1369118X.2024.2302987

Lundhaug, K., Faxvaag, A., Stokke, R., & Andreassen, H. K. (2024). Shared patient information and trust: a qualitative study of a national eHealth system. BMC Digital Health, 2(1), 57. https://doi.org/10.1186/s44247-024-00108-6

MacLeod, M., & Davidson, E. (2007). Exploring technology frames through interview narratives. https://doi.org/http://aisel.aisnet.org/amcis2007/203?utm_source=aisel.aisnet.org%2Famcis2007%2F203&utm_medium=PDF&utm_campaign=PDFCoverPages

McDonald, R., Cheraghi-Sohi, S., Bayes, S., Morriss, R., & Kai, J. (2013). Competing and coexisting logics in the changing field of English general medical practice. Social Science & Medicine, 93, 47-54. https://doi.org/10.1016/j.socscimed.2013.06.010

Mikk, K. A., Sleeper, H. A., & Topol, E. J. (2017). The pathway to patient data ownership and better health. Jama, 318(15), 1433-1434. https://doi.org/10.1001/jama.2017.12145

New Zealand Herald. (2021). Covid 19 Delta outbreak: High Court rules release of Māori vaccination data to Whānau Ora, a week ahead of border reopening New Zealand Herald https://www.nzherald.co.nz/nz/covid-19-delta-outbreak-high-court-rules-release-of-maori-vaccination-data-to-whanau-ora-a-week-ahead-of-border-reopening/2SPC2UTV7YYZPM4XXAAV476YSA/

OECD. (2019). Health in the 21st century. Putting data to work for stronger health systems. In: Organisation for Economic Co-operation and Development (OECD) Paris.

Orlikowski, W. J., & Gash, D. C. (1994). Technological frames: making sense of information technology in organizations. ACM Trans. Inf. Syst., 12(2), 174–207. https://doi.org/10.1145/196734.196745

Pierce, P., Ricciardi, F., & Zardini, A. (2017). Smart cities as organizational fields: A framework for mapping sustainability-enabling configurations. Sustainability, 9(9), 1506. https://doi.org/10.3390/su9091506

Schneble, C. O., Elger, B. S., & Shaw, D. M. (2020). All our data will be health data one day: the need for universal data protection and comprehensive consent. Journal of medical Internet research, 22(5), e16879. https://doi.org/10.2196/16879

Seastedt, K. P., Schwab, P., O'Brien, Z., Wakida, E., Herrera, K., Marcelo, P. G. F., Agha-Mir-Salim, L., Frigola, X. B., Ndulue, E. B., & Marcelo, A. (2022). Global healthcare fairness: We should be sharing more, not less, data. PLOS Digital Health, 1(10), e0000102. https://doi.org/10.1371/journal.pdig.0000102

Snow, D. A., & Benford, R. D. (1988). Ideology, frame resonance, and participant mobilization. International social movement research, 1(1), 197-217.

Sonin, J., Becker, A., & Nipp, K. (2023). Designing health outcomes through patient data ownership. Journal of Hospital Medicine, 18(8), 765-768. https://doi.org/10.1002/jhm.13148

Stats, N. (2021). COVID-19 lessons learnt: recommendations for improving the resilience of New Zealand's government data system (Stats NZ Tatauranga Aotearoa, Issue. https://www.health.govt.nz/about-us/new-zealands-health-system/health-system-roles-and-organisations/health-committees-and-boards/other-health-committees/health-and-disability-system-review

Te Mana Raraunga. (2018). Principles of Māori data sovereignty. https://www.temanararaunga.maori.nz/nga-rauemi

Tenbensel, T., Cumming, J., & Willing, E. (2023). The 2022 restructure of Aotearoa New Zealand's health system: Will it succeed in advancing equity where others have failed? Health Policy, 134, 104828. https://doi.org/10.1016/j.healthpol.2023.104828

Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). The institutional logics perspective: Foundations, research, and theoretical elaboration. Oxford University Press.

Van Kessel, R., Seghers, L.-E., Anderson, M., Schutte, N. M., Monti, G., Haig, M., Schmidt, J., Wharton, G., Roman-Urrestarazu, A., & Larrain, B. (2024). A scoping review and expert consensus on digital determinants of health. Bulletin of the World Health Organization, 103(2), 110. https://doi.org/10.1111/1467-9566.13095

Varhol, R. J., Randall, S., Boyd, J. H., & Robinson, S. (2022). Australian general practitioner perceptions to sharing clinical data for secondary use: a mixed method approach. BMC Primary Care, 23(1), 167. https://doi.org/10.1186/s12875-022-01759-y

Vayena, E., & Blasimme, A. (2018). Health research with big data: time for systemic oversight. The journal of law, medicine & ethics, 46(1), 119-129. https://doi.org/10.1177/1073110518766026

Wang, Y. C., & DeSalvo, K. (2018). Timely, granular, and actionable: informatics in the public health 3.0 era. American journal of public health, 108(7), 930-934. https://doi.org/10.2105/AJPH.2018.304406

Weerasinghe, K., Pauleen, D., Taskin, N., & Scahill, S. (2023). Alignment of Big Data Perceptions Across Levels in Healthcare: The case of New Zealand. Australasian Journal of Information Systems, 27. https://doi.org/10.3127/ajis.v27i0.4067