

## Health Information Management and the Structure of the New Zealand Health Sector

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### Abstract

New Zealand has a population of four million people spread over 270,000 square kilometres. Eighty five percent of the population are concentrated in the urban areas. The main ethnic groups are European 71%, indigenous Maori 14.5%, Pacific Islanders 4.8%, and Asian 4.5%. The cornerstone of New Zealand's health system is public finance through taxes with access to health services based upon need. In New Zealand in 2000/01 \$9.884 billion, including private funding, was spent on health and disability support services (NZ\$2601 per capita). Of this, \$2.3 billion (23.3 %) was privately funded and \$7.584 billion (76.7 %) publicly funded (Ministry of Health, 2003b). Since 1999 the New Zealand Government has been moving away from market-based structures in the health sector, by combining the health care purchaser and provider functions into community-focused District Health Boards (DHBs) (Kerr, 2004). An illustration of the structure of the health sector is provided in Figure 2 below. Central government provides broad guidelines on what services the DHBs must provide, and national priorities have been identified in the New Zealand Health Strategy (Ministry of Health, 2000). A range of providers including public hospitals, non-profit health agencies, or private organisations can deliver services. Funding is allocated to DHBs using a weighted population based funding formula. DHBs are responsible for planning, funding and ensuring the provision of health and disability services to a geographically defined population. This reflects a move away from the previous purchaser/provider split, as DHBs provide hospital (and some community-based) services. DHBs are responsible for improving, promoting and protecting the health and independence of their populations. Boards must assess the health and disability support needs of the people in their regions, and manage their resources appropriately in addressing those needs. DHBs vary considerably in size. There are six tertiary DHBs and 14 secondary DHBs. The largest DHB provides services for 477,000 patients, with the smallest providing services for 30,300 (Ministry of Health, 2003a).

**Keywords:** Health Information Management, Health Structure, New Zealand Health Sector

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### 1.0 INTRODUCTION

It is important to note that the management and institutional knowledge within DHBs is rapidly evolving. DHBs are relatively new organisations, having been established in 2001 with considerably different roles and culture to their previous entities, where competition for health dollars was actively encouraged. This had the flow on effect of discouraging collaboration with other health care providers. Under the New Zealand Public Health and Disability Act (2000), the Minister of Health is required to determine a New Zealand Health Strategy to provide the framework for the Government's overall direction of the health sector in improving the health of people and communities. The seven principles of the New Zealand Health Strategy (Ministry of Health, 2000) are:

1. Acknowledging the special relationship between Maori and the Crown under the Treaty of Waitangi;
2. Good health and well-being for all New Zealanders throughout their lives;
3. An improvement in health status of those currently disadvantaged;
4. Collaborative health promotion and disease and injury prevention by all sectors;
5. Timely and equitable access for all New Zealanders to a comprehensive range of health and disability services, regardless of ability to pay;
6. A high-performing system in which people have confidence;
7. Active involvement of consumers and communities at all levels.

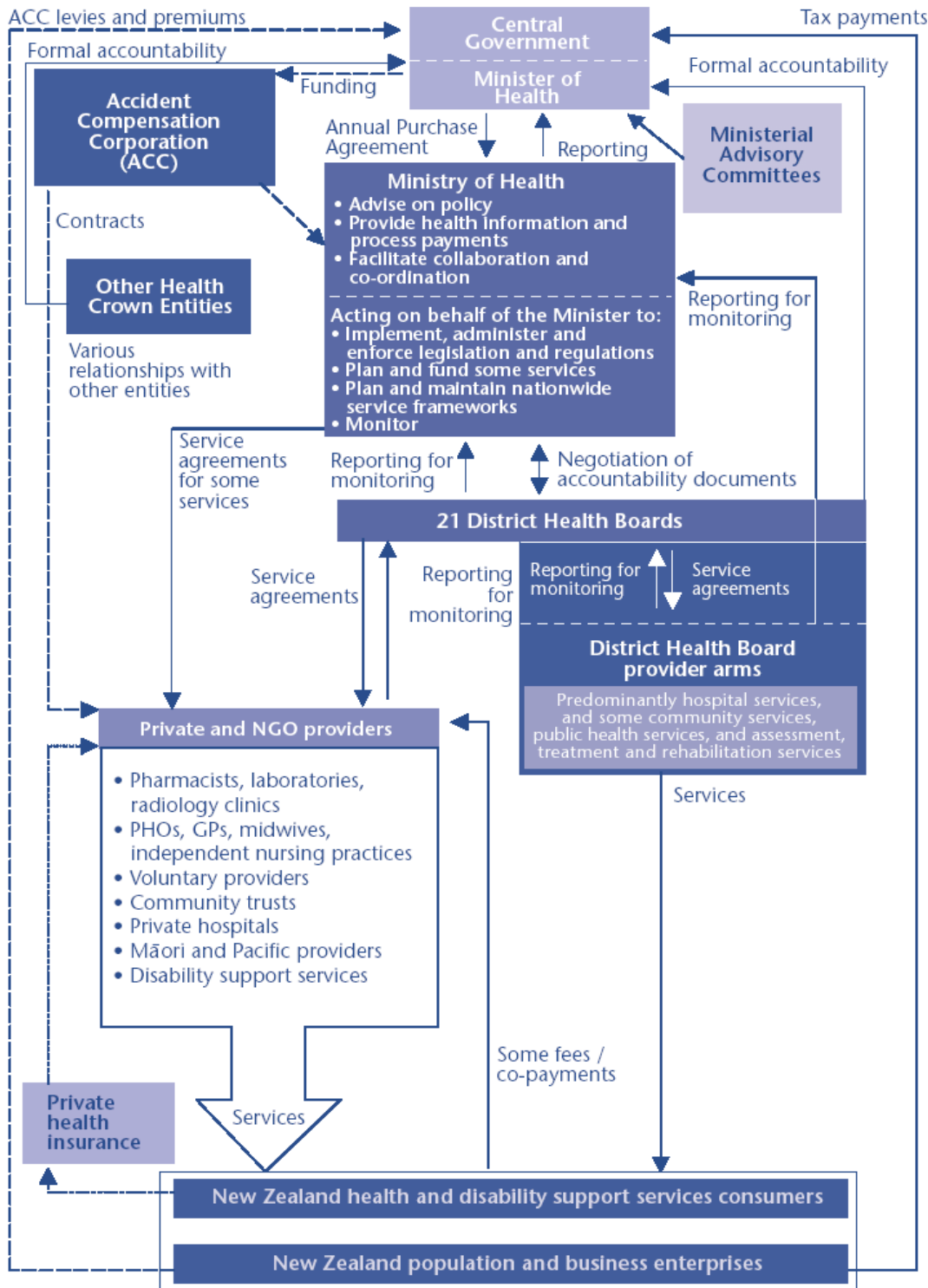


Figure 2: Structure of the New Zealand Health Sector<sup>1</sup>

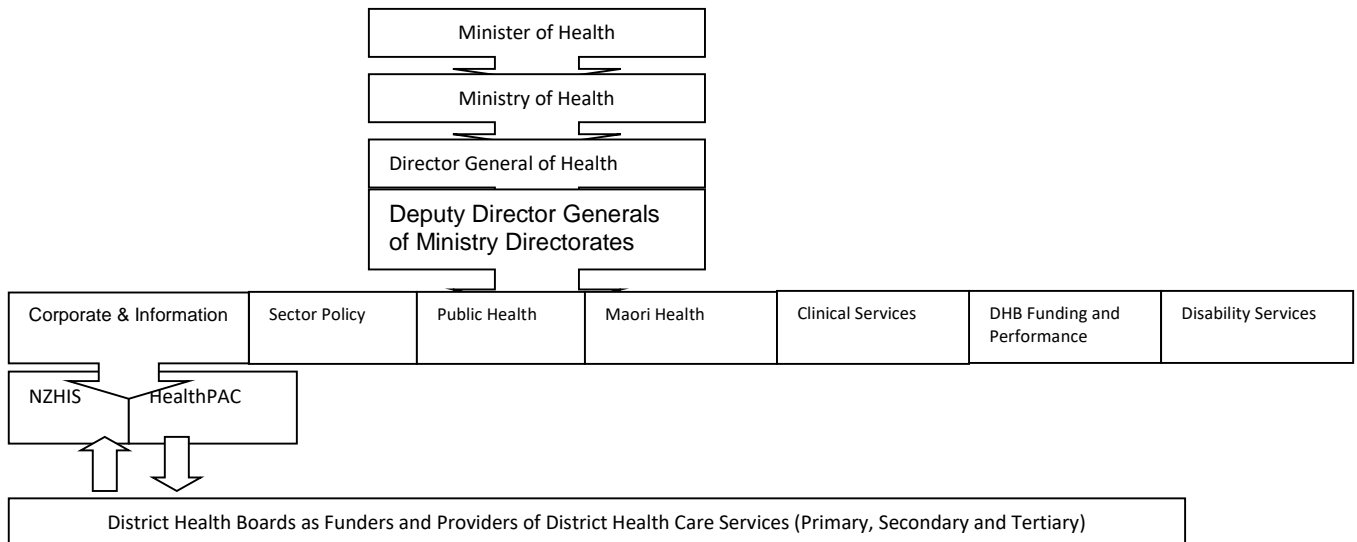
## 2.0 THE STRUCTURE OF THE MINISTRY OF HEALTH

The Ministry of Health is the Government's principal agent and advisor on health and disability. It develops policy advice for the Government on health and disability issues, administers health regulations and legislation, funds health and disability support services, plans and maintains nationwide frameworks and specifications of services, monitors sector performance and provides information to the wider health and disability sector and the public. Figure 3 below

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<http://www.moh.govt.nz/moh.nsf/e00eda991ab5e3704c256670004079ba/d4cd4c98ad5e8994cc256be2007eb883?OpenDocument>

outlines the structure of the Ministry of Health and its relationship with the health sector as funders and providers of health care services and suppliers of data to the national health data collections. The New Zealand Health Information Service (NZHIS) and the Health Payments, Agreements and Compliance unit (HealthPAC) are business units within the Corporate and Information Directorate. Both NZHIS and HealthPAC provide and receive a considerable amount of data from and to the health sector and the Ministry of Health. This research pertains to the national health collections held at NZHIS, therefore the function of NZHIS is provided in detail below.



**Figure 3: Structure of the Ministry of Health**

### 2.1 The New Zealand Health Information Service

The New Zealand Health Information Service (NZHIS) is a specialised group, within the Ministry of Health, responsible for the collection and dissemination of health related data. NZHIS has as its foundation the goal of making ‘fit-for-purpose’ information readily available and accessible in a timely manner throughout the health sector. The vision of NZHIS is to be a leader in the provision of health information services in New Zealand, and to be recognised and respected as a leading organisation internationally. NZHIS has responsibility for:

- The collection, processing, maintenance, and dissemination of health data, health statistics and health information;
- The ongoing quality improvement of data entering the national health information systems;
- The continuing maintenance and development of the national health and disability information systems;
- The provision of appropriate databases, systems and information products;
- The development and provision of health and disability information standards and quality audit programmes for data;
- Coordination of ongoing national health and disability information collections and proposals for their development;
- Analysis of health information, performance monitoring, benchmarking, and advice on the use of information obtained from nzhis.

NZHIS and the sector supplies and receives data from HealthPAC, which provides services to health funders that include:

- Establishment and administration of agreements;
- Payments to health providers for contracted services;
- Payment and clinical data collection from health provider claims;
- Provision of information and reports relating to payment and other health data;
- Audit and counter fraud methodologies to ensure health funds are applied legitimately and appropriately;
- Patient eligibility administration.

### 2.2 Health Information Management in the New Zealand Health Sector

Historically, there has been no sector wide approach or consistent approach to developing health information systems in New Zealand. However, since 2001 DHBs have been replacing isolated departmental and clinical systems with more integrated and dynamic web-based technologies that support a more connected information delivery network. All of the 21 DHBs have entered into some form of shared service arrangements for information systems (e.g., finance and/or patient management systems), corporate support (e.g., health provider contract management) and contracting or clinical data analysis. Such arrangements have reduced duplication and contributed to more effective and efficient management of infrastructure with greater interoperability. Information technology has been essential for implementing the population health care initiatives in New Zealand (Kerr, 2004).

The Health Information Standards Organisation<sup>2</sup> (HISO), a Ministerial Committee formed in 2003, has a key coordination role in leading the development and implementation of information management and technology standards for the New Zealand health sector. The HISO ensures that relevant standards are identified for development and that, once defined, are implemented effectively for the overall benefit of the health sector (Kerr, 2004).

The Health Information Strategy for New Zealand (HIS-NZ) was published in 2005 and provides a context to support New Zealand health and disability strategies to make innovative use of information. It builds on previous national health information strategies, including the 1996 Health Information Strategy for the Year 2000 (Ministry of Health, 1996) and the WAVE (Working to Add Value through E-information) (WAVE Advisory Board, 2001) Project. Figure 4 below provides a summary of the linkages between health strategies and information strategies, and highlights the importance given to information to support strategic goals. The importance of information is also noted in the overarching New Zealand Health Strategy (Ministry of Health, 2000) with requirements of the health sector to:

- Exchange high quality information;
- Have better access to timely and relevant clinical information;
- Have a nationally coherent and consistent approach to health information infrastructure, based on improving access to information and the consolidation of appropriate standards.

HIS-NZ provides direction to the health and disability sector in making better decisions about how to improve the quality and availability of health information and is intended to develop a single and co-ordinated strategy of information systems, including current and emerging information, communications and technology within the health sector and provides a context for increasing information systems capability. The focus on improved information requires improving data quality management to address all of the strategy's 12 action zones, particularly to improve data quality on the National Health Index (NHI), and subsequently reduce duplication of data collection.

Government has an obligation that the health status of Māori is comparable with non-Māori, as well as a commitment to self-determination such that Māori can determine what health care services are appropriate and how they are delivered (WAVE Advisory Board, 2001). For Māori, data are embodied with significant spiritual and cultural significance. This is the case regardless of whether data are personal and identifiable or not. The governance process surrounding the collection, storage and use of data pertaining to Māori requires additional attention and processes can and should differ from those traditionally employed in the health sector. It is, for example, possible to apply the concept of *kaitiakitanga*, meaning guardianship, protection, care and vigilance to data management. This approach offers the potential to locate Māori as the primary beneficiaries of data relating to themselves, to ensure that data collected are appropriate and relevant and that issues of collective ownership, and collective privacy are addressed (Kamira, 2003).

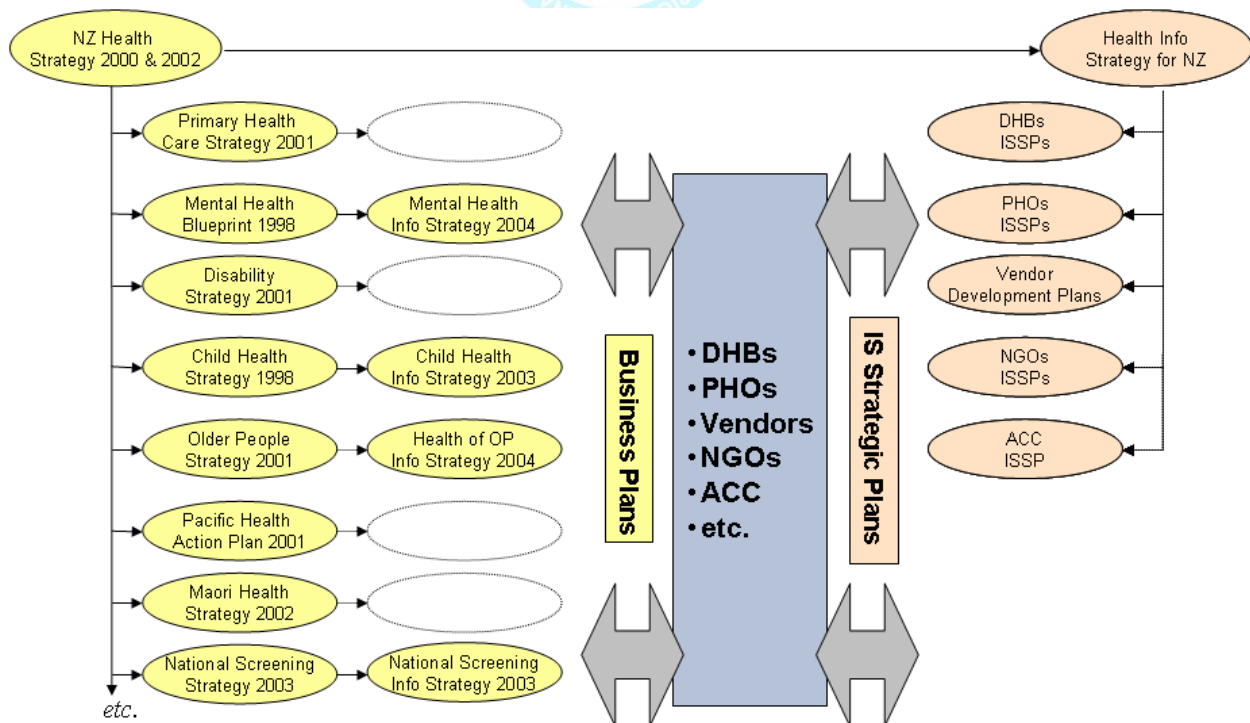


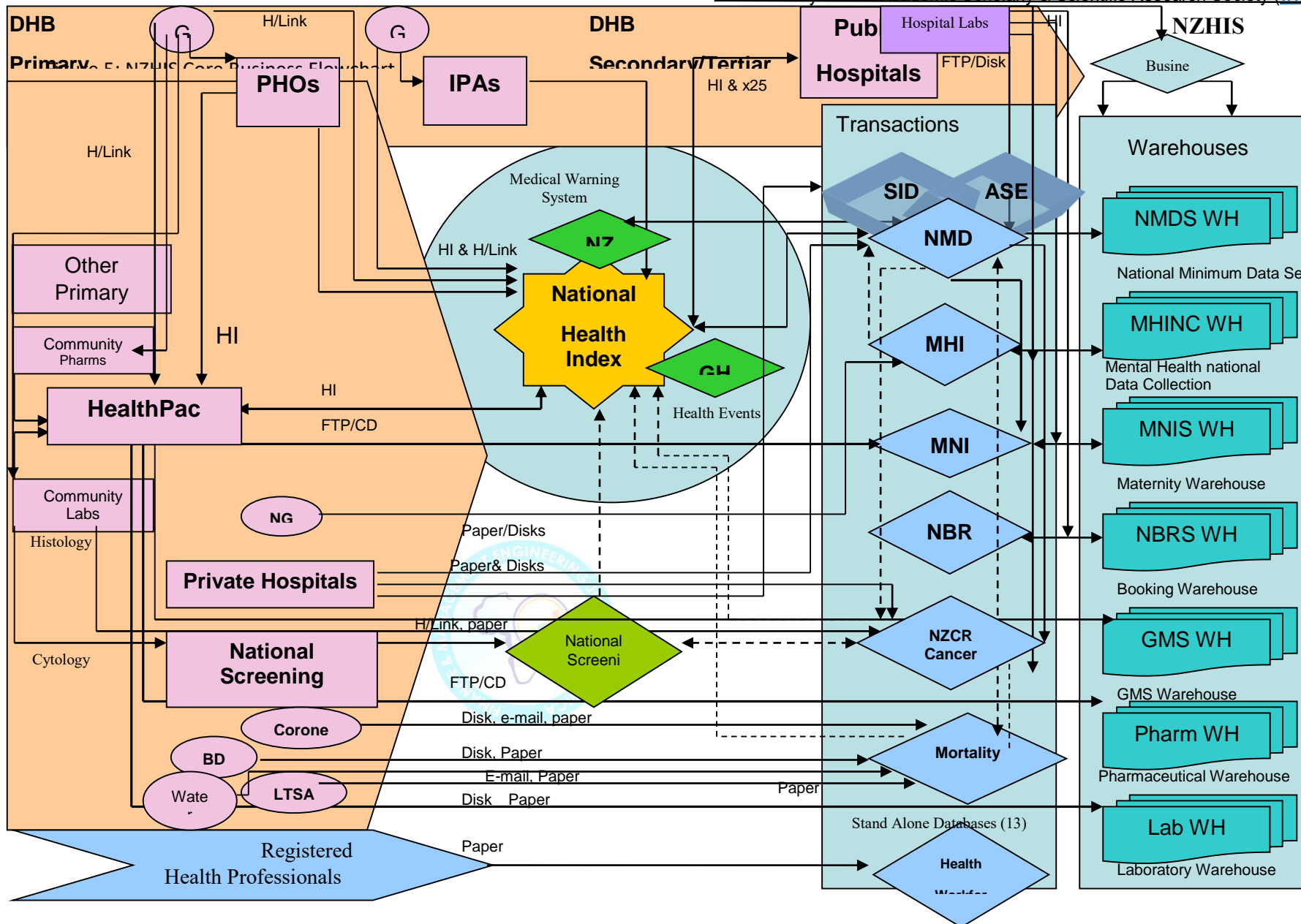
Figure 4: Linkage Between Health Strategies and Information Strategies (Ministry of Health, 2005)

<sup>2</sup> <http://www.hiso.govt.nz/>

### 3.0 DATA QUALITY AT NZHIS

The manager of the Clinical Analysis Team at NZHIS (responsible for data quality) reports directly to the group manager, as do managers from the Business Intelligence Unit, the Clinical Coding Team, the Operations Team and the Chief Advisor, Health Information Strategy and Policy. Each of these teams within NZHIS has considerable impact on the quality of data management for the health sector, and these teams work closely together. However, all require expert advice if the organisation and the sector are to make significant and effective improvements in data quality levels. Figure 5 is a diagram of the data flows within NZHIS, highlighting the complexity of data management processes. The NZHIS Clinical Analysis Team has nine staff working on Data Quality, two work specifically on the Mental Health Information Collection (MHINC). According to management 'as many as 15 people work on data quality within NZHIS, but they are working on the wrong things'. A detailed analysis of data quality in the New Zealand health sector is provided in Chapter Six.





### 3.1 The National Health Index

The National Health Index (NHI) is a central data set, the function of which is to uniquely record every individual who is either eligible for health and disability services or has received care and treatment in the New Zealand health system. The NHI is a single point of identification of individual-level data on health service delivery and as such it forms a critical backbone of any health information system. Unfortunately, while the concept is sound in principle, in reality the quality of data in the NHI is often poor such that:

- Data are duplicated;
- Address and geo-coding information is incorrect, missing or inadequate;
- Ethnicity information is missing or incorrect.

NZHS is currently involved in a programme to remedy the above problems and upgrade the NHI such that:

- Access to the NHI, especially for primary health care, is improved;
- Public understanding and knowledge of the NHI is increased;
- Everyone using health services in New Zealand has an NHI number.

### 4.0 CONCLUSION

An extract from the Health Information Strategy for New Zealand (Ministry of Health, 2005) highlights the importance of good data quality on the NHI: As the sector needs to rely more on the NHI and the associated national clinical data collections, it is important that programmes to improve NHI data continue.

The NHI can be more effective as a unique identifier for tracking service delivery across a continuum of care, but requires additional work to resolve duplicates and improve access by key parts of the sector who either do not have access to the NHI or are currently not able to register and update clients on the NHI.

As the NHI was not originally designed to be used as an identifier for population-based health boundaries (e.g., for enrolment of patients in Primary Health Organisations or for particular disease groups or risk groups), some remedial work needs to be carried out. (Pg 23)

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