Health Information Strategy Action Committee

Action Zone 9 – National Non-Admitted Patients Collection

Preliminary Scope and Approach

This document has been developed in consultation with the sector and portrays the scope, principles, key enablers and implementation approach for this Action Zone at a point in time. It should be used as a reference to inform and guide business and technical decision making for initiatives related to this Action Zone.

If you have any questions or require assistance please communicate with HISAC through enquiries@HISAC.govt.nz or write to:

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Vision

Make outpatient information available for the purposes of clinical governance, service planning and resource allocation.

Strategy

Establish data standards for outpatient information, provide a user-friendly, cost effective method of capturing the data within existing operational processes, and provide the information to authorised organisations.

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0.3 Draft	29.11.06	S Hunter		Update with NNPAC/ACC feedback
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About this Document

Action Zone document structure

The 2005 Health Information Strategy for New Zealand (HIS-NZ) identified 12 Action Zones as areas where effort should be focused over the next three to five years.

A '**Preliminary Scope and Approach**' (PS&A) document has been prepared for each Action Zone. The PS&A documents build the case for change, including benefits the Sector can expect to achieve and suggest an approach to implement the change.

Each individual PS&A document should be read in conjunction with the "HIS-NZ Implementation Approach" (a PowerPoint presentation). It describes common themes that have emerged from the PS&A work, the key enablers that are necessary to support a common approach to information management and the priority areas where HISAC and the Sector can assist with implementing the Action Zones.

Action Zone 09: National Non-Admitted Patient Collection

Secondary health care in New Zealand is increasingly taking place in outpatient or community settings, with many more patient interactions occurring in those settings than in traditional inpatient settings. While much is known regarding what inpatient care is happening throughout the country, very little is known about outpatient activity.

Action Zone 9 of HIS-NZ seeks to provide nationally consistent clinical and administrative data on outpatient activity. This will significantly enhance the data available for planning, provide greater evidence of changes to health outcomes, enable better targeting of funding, and inform decisions regarding clinical service delivery.

Constraints

Prior to producing this document, the HIS-NZ project team has consulted with stakeholders across the sector in order to better understand their business problems and potential solutions.

During 2006, the Ministry of Health implemented the first phase of the NNPAC (National Non-Admitted Patient Collection), which accumulates emergency, medical and surgical outpatient clinic activity from DHBs.

The terms "non-admitted patient" and "outpatient" are used interchangeably through this document.

Acknowledgements

The contents of this document were influenced by:

- The contributions of the health professionals listed in Appendix A; and
- Previous papers relating to the subject (referenced in Appendix B).

Context

This document contains	This document does not contain
An overview of the current state of the sector with respect to a national collection of outpatient data.	Detailed definition of current-state processes.
High level definition of an ideal future state for the NNPAC.	Detailed system, policy or process design.
Identification of top-level requirements for the NNPAC.	Detailed definition of user requirements.
A recommended approach for progressively implementing the NNPAC.	Detailed implementation plan, business case or cost/benefit analysis.
Qualitative definition of the benefits	Quantitative definition of benefits. Detailed evaluation criteria or

expected from the NNPAC.	options.

Next steps

HISAC will lead the implementation of the Action Zones and is conscious of the need to represent the voice of the Sector. Significant engagement has taken place through the evolution of HIS-NZ and this PS&A document.

It is important that consultation continues and that input from the wider sector is obtained and incorporated into the approach. Appendix A includes an initial list of people and organisations that could be included in further engagement.

Executive Summary

Current Situation

Introduction

The non-admitted patient component of Sector costs amounts to approximately $1 billion per annum, yet there is limited information available to account for this expenditure.

DHBs provide inpatient data to the National Minimum Dataset (NMDS) and this has been a valuable source of information regarding inpatient activity, however, there is no equivalent information source for outpatient data.

In 2003, population-based funding was introduced and tools and processes were established to estimate inter-district flows (IDF). National non-admitted patient event data has been collected only to support this annual process.

Significant manual intervention has been required within DHBs and the Ministry of Health to standardise and ‘clean’ the supplied data. While IDF calculations can have significant implications for DHBs, confidence in the resulting IDF estimates has not been optimal.

The ‘counting’ data collected for IDF purposes has not been used to support other Sector requirements such as service planning or population health analysis, as it is not considered to be sufficiently robust.

DHBs, primary care practitioners and other Sector stakeholders have had no access to collated data.

Definition

For the purposes of this Action Zone, a ‘non-admitted patient service’ is defined as a:

- Publicly funded service that is provided by a registered health practitioner;
- Service based on acceptance of a referral (generally by a health practitioner) or provided in an Emergency Department or other self-referring department; and a
- Service provided by, on behalf of, or contracted by, the service arm of a DHB, where information about that service is collected at a per-individual level.

Services excluded from the definition for this Action Zone include primary care, private hospital outpatients, private specialists, rest homes, long-term residential care, mental health and inpatient services (the last as defined by and for the National Minimum Dataset).

The terms “non-admitted patient” and “outpatient” are used interchangeably through this document.

A step forward in July 2006

In 2004, the DHB Funding and Performance Directorate within the Ministry of Health initiated a project to assess the feasibility of establishing a national collection of outpatient data. As a result of that study, the ‘NNPAC Phase 1A’ project was established. The primary objective of that project was to better support IDF estimation by increasing the robustness and timeliness of the process. Representatives from a number of Sector organisations sat on the project Steering Committee, or were included in engagement.

The NNPAC Phase 1A solution was deployed in July 2006. It delivered:

- A base technical infrastructure and data standards for purchase unit ‘counting’ elements;
- Simplified and enhanced processes for capturing counting data for emergency department, medical and surgical non-admitted patient events; and
- Access for DHBs to the collected data for analytical and statistical

reporting.

Achieving the Action Zone 9 Strategy

Introduction

HISAC's vision for Outpatient Information/NNPAC is that it will make outpatient information available for the purposes of clinical governance, service planning and resource allocation.

The results of a survey of Sector organisations align well with the HISAC vision, indicating that in the future the Outpatient Information/NNPAC Action Zone should:

- Provide information that will enable the health of the population to be understood more effectively, enabling effective decision making;
- Increase the sector's ability to plan, deliver and improve health services;
- Provide quality information to inform sector funding allocation decisions;
- Reduce administrative overheads by improving data quality and reducing duplication of collection and reporting; and
- Inform the provision of evidence-based policy advice.

An important distinction that needs to be made is that once 'NNPAC Phase 1b' is completed, the DHB Funding and Performance Directorate within the Ministry of Health will have achieved its primary objectives. Addressing future requirements, as defined throughout this document, will not be the responsibility of the Directorate. This is discussed further under the topic of Governance.

Service planning is better informed by access to quality information

For Sector organisations, policy makers, funding agencies and researchers, Outpatient Information/NNPAC will increase the availability and quality of outpatient event summary data, simply analysis, and provide greater evidence to support:

- Care planning;
- Benchmarking;
- Managing and measuring sector productivity and efficiency; and
- Targeting resources and initiatives to areas of greatest need.

Better information is available for monitoring health outcomes

For Sector organisations, policy makers and researchers, NNPAC will improve the completeness and accuracy of data used to:

- Assess population heath indicators;
- Assess how initiatives in other areas (e.g. in primary care, or admitted patient activity) impact on outpatient services;
- Measure the achievement of other outcomes; and
- Inform policy development.

Financial management is more effective

For Sector organisations and funding agencies, Outpatient Information/NNPAC will support financial and resource management by improving the completeness and accuracy of data that enables:

- More accurate forecasting of service volumes and thus resourcing requirements;
- More robust pricing and definition of purchase units; and
- The collation and delivery of more accurate and timely inter-district flow data.

Moving Outpatient Information/NNPAC forward

Funding and performance data

DHB IDF payments total $150 million per annum. Outpatient Information/NNPAC will deliver a solution that ensures that IDF data relating to outpatient activity is:

- Simpler, faster and more cost effective to collate and return; and
- More accurate and complete, and thus more reliable.

Vote Health, and in turn DHB funding, increases each year in terms of costs, technology change and volume growth. Volume growth is funded through the demographic adjuster. The calculation uses current average costs per age group and gender. However, the component for personal health non-primary care is currently based solely on inpatient care information. Outpatient Information/NNPAC will make it possible to incorporate calculations based on non-admitted care information.

ACC funds the Crown for ACC acute services. Currently, ACC pays $50 million per annum for non-admitted patient services. However, confidence is not high that the calculation basis is accurate. Outpatient Information/NNPAC will enable more accurate calculation of funding amounts.

The Rural Adjuster allocates $77 million per annum, plus a further $38 million for travel and accommodation costs. Outpatient Information/NNPAC will improve the reliability of various elements of Rural Adjuster calculations.

Summary clinical data

Outpatient Information/NNPAC will implement data collection at patient (NHI) level that includes summary clinical data, to support outcomes measuring and assessment of different service models. The summary clinical data elements that Outpatient Information/NNPAC will target are diagnosis and procedure codes. The emphasis on ‘summary’ clinical data is important. The intention is not that the Outpatient Information/NNPAC will become a national clinical service delivery system, e.g. a patient management system.

The reasons for including diagnosis and procedure codes include:

- Improving the accuracy of the calculation for ACC payments related to acute services;
- Providing further detail to support productivity and financial analyses;
- Allowing population health analyses to be undertaken (including by PHOs and NGOs), ranging from local, to regional, to national levels;
- Allowing service planners and managers within DHBs and other Sector organisations to compare activities against regional and national benchmarks. In effect, the Outpatient Information/NNPAC will be a comparative reference source filling an existing gap; and
- Supporting service organisations undertaking resource planning.

Any decision to include standardised summary diagnostic and procedure codes or any other clinical coding needs to take into account serious concerns within the Sector regarding the cost and volumes of work that could be generated. The primary reason for this is the volume of non-admitted patient events. There are many times more non-admitted than admitted patient events to record. If coding standards are used to code non-admitted patient events, then Sector stakeholders would question whether enough benefit will be realised to justify the cost.

Related to the cost implications are capability issues. It is unlikely that enough appropriately skilled clinical coders could be found. Currently, personnel are required to travel to Australia to access training.

The NNPAC project is investigating a range of strategies to access clinical information without the need to capture this in the Outpatient Information/NNPAC Action. This may be through linkages such as the NHI and other methods of identification, e.g. enrolled patients for specific health

conditions such as diabetes or cancer. HISAC will promote the development of a 'coding strategy', i.e. what the business need is, what level of specificity is required, what the feasibility is (e.g. DHB capacity) and what approach will be taken to implement any coding standard.

Analysis and reporting

As a result of capturing administrative and summary clinical data on outpatient activity, Outpatient Information/NNPAC will be able to meet the information requirements of health practitioners, Sector organisations, planners, funding agencies and researchers.

For DHBs, Outpatient Information/NNPAC is expected to:

- Inform service planning in/for provider arms, including transitions between channels (e.g. inpatient vs. outpatient); and
- For planning and funding functions, inform decisions regarding contracting with service sectors, by providing comparisons across DHBs by service.

For other Sector organisations such as PHOs and NGOs, Outpatient Information/NNPAC is expected to inform service planning by improving the view on outpatient activity relating to location and service types.

DHBs, PHOs and NGOs expect that by making better and timelier local and regional population health information available, Outpatient Information/NNPAC will better support the targeting of training and prevention initiatives.

For the Ministry of Health, Outpatient Information/NNPAC is expected to deliver better information regarding:

- Population health trends; and
- National pricing implications relating to procedures (this also benefits DHBs through informing IDF calculations).

For ACC, Outpatient Information/NNPAC is expected to provide more complete and accurate information regarding:

- Purchasing information; and
- Accident rates.

In addition to providing Sector stakeholders with access to data so that they may undertake their own analyses, the Outpatient Information/NNPAC Action Zone will also establish analysis and reporting services.

In many cases the information needs of stakeholders are the same (though often differing by geographic area). Outpatient Information/NNPAC will create a library of standard reports, to reduce duplication of work and the risk of misinterpreting data. It will be possible to generate reports on an ad-hoc basis, or to an appropriate schedule (e.g. monthly, quarterly or annually).

Governance

Outpatient Information/NNPAC requires a governance structure that ensures it continues to meet the needs of Sector stakeholders over time.

The NNPAC Phase 1A project established an initial operating governance structure. As that project focused wholly on delivering IDF-related functionality, the DHB Funding and Performance Directorate within the Ministry of Health performed the stewardship role, with continuing support from the NNPAC project Steering Committee. The Ministry, through NZHIS, also acted as NNPAC custodian.

As the NNPAC evolves to deliver more than IDF-related functionality, stewardship needs will also evolve. Decisions relating to the governance of Outpatient Information/NNPAC will need to be resolved.

It is expected that HISAC's National Collections Sub-committee will have a role to play in the stewardship of Action Zone 9.

Accessibility	Outpatient Information/NNPAC needs to be accessible to DHBs, primary care and community care organisations, as well as to national agencies such as the Ministry of Health and ACC. Outpatient Information/NNPAC will ensure that Sector stakeholders are made aware of the existence and purpose of the collection, in order that they are able to identify how it can be of use to them. Outpatient Information/NNPAC will also establish processes and supporting technologies to ensure that Sector stakeholders are provided with appropriate (i.e. authorised) access to Outpatient Information/NNPAC data on a timely basis.
Standards	In order to successfully deliver value to the sector, Outpatient Information/NNPAC will be dependent on the development and implementation of a number of shared standards and technology components. A number of relevant initiatives are being coordinated by the Health Information Standards Organisation (HISO) sub-committee of HISAC. It is expected that HISO will continue to lead the development of relevant standards. NHI and HPI numbers will be included in order to support longitudinal analyses and to link Outpatient Information/NNPAC to other datasets, including relevant clinical information that has been collected elsewhere.
Privacy and security	In all aspects and at all stages of Outpatient Information/NNPAC initiatives, privacy and security requirements will be considered and given effect, including: • Appropriate management of access to personal information, whether it is in identifiable or in anonymised form; • Securing physical and electronic access to Outpatient Information/NNPAC applications, and to data in storage or in transit; • Requirements to record and audit access; and • Complying with legislation, regulation and relevant government standards.

Stakeholder Benefits

Clinical service delivery	Health practitioners, health users, Sector organisations and policy makers will benefit as clinical evidence and practice improve. Outpatient Information/NNPAC will enable this by making data available that can be used to: • Inform clinical guidelines, care pathways and clinical profiling; • Support policy development; and • Potentially, provide a foundation step towards managing ‘episodes of care’ rather than individual care events.
Outcome quality	Health practitioners, health users, Sector organisations, researchers and policy makers will benefit as improvements in the management of outcome quality are realised. Outpatient Information/NNPAC will enable this through: • Delivering more complete patient-level data to support improvements in service quality; and • The ability to benchmark and make comparisons, including allowing DHBs to compare their own data against benchmarks and averages.

Sector productivity	Improved management of Sector productivity will be possible through access to data that enables: • Better resource allocation by targeting services and resources to areas of highest need; • Better trend analysis and estimation processes due to the availability of more, better quality data; and • More complete cost-benefit analysis of treatment programmes. This will benefit Sector organisations, funding agencies, policy makers and researchers. Additionally, some benefits will accrue to DHBs and the Ministry of Health as the automation of the IDF process will mean that more time can be spent on more value-oriented analysis work.
Financial management	Sector organisations, funding agencies and researchers will benefit as Outpatient Information/NNPAC supports improved financial management by providing access to data that allows: • More accurate forecasting of treatment costs; • Measurement of actual costs of treatment for non-admitted patient events; • More robust pricing and definition of purchase units; • Better profiling of non-admitted patients; and • More accurate and timely information on IDFs, leading to payments to DHBs being based on actual services provided, rather than on estimates based on annual “wash-ups”.

1 What Happens Today

1.1 Current Situation

Introduction

Outpatients are patients who are not admitted to hospital, but are typically seen or treated in a hospital specialist clinic, and therefore are classified as 'non-admitted patients'.

Each day in New Zealand 4000 outpatients visit hospitals for care[1]. Nearly 2000 people are seen in Emergency Departments. The non-admitted patient component of the Health and Disability Sector costs approximately $1 billion per annum[2], yet there is limited information available to account for this expenditure.

DHBs provide inpatient data to the National Minimum Dataset (NMDS)[3] and this has been a valuable source of information regarding inpatient activity, however there is no equivalent information source for outpatient data.

Definition

The terms "non-admitted patient" and "outpatient" are used interchangeably through this document.

For the purposes of this Action Zone, Outpatient Information/NNPAC defines a 'non-admitted patient service' as a:

- Publicly funded[4] service that is provided by a registered health practitioner[5];
- Service based on acceptance of a referral (generally by a health practitioner) or provided in an Emergency Department or other self-referring department; and a
- Service provided by, on behalf of, or contracted by, the service arm of a DHB where information about that service is collected at a per-individual level.

Services excluded from the definition for this Action Zone include primary care, private hospital outpatients, private specialists, rest homes, long-term residential care, mental health and inpatient services (the last as defined by and for the National Minimum Dataset).

[1] "From Strategy to Reality: The WAVE Project", WAVE Advisory Board, ISBN 0-477-01957-9, October 2001. Thus these figures are somewhat out of date.

[2] For the 2004/05 year, an estimated $954 million was spent on non-admitted patient personal health services, excluding maternity, tertiary and rural adjusters. This equates to 35% of the total provider arm personal health spend (again excluding maternity, tertiary and rural adjusters).

[3] Similar inpatient and daypatient data from private hospitals is held in the Private Hospital Reporting System collection.

[4] 'Publicly funded' is defined as being paid for from Vote Health, or under the Injury, Prevention, Rehabilitation and Compensation Act 2001.

[5] 'Health practitioner' is as defined by the Health Practitioners Competence Assurance Act 2003, and includes allied health professionals.

Historical situation

In 2003, population-based funding was introduced, and tools and processes were established to estimate inter-district flows (IDF). National non-admitted patient event data has only been collected to support this annual process.

Significant manual intervention has been required within DHBs and the Ministry of Health to standardise and 'clean' the supplied data. While IDF calculations can have significant implications for DHBs[6], confidence in the resulting IDF estimates has not been optimal.

The 'counting' data collected for IDF purposes has not been used to support other Sector requirements such as service planning or population health analysis, as it is not considered to be sufficiently robust.

No clinical data has been collected.

DHBs, primary care practitioners and other Sector stakeholders have had no access to collated data.

A step forward in July 2006

In 2004, the DHB Funding and Performance Directorate within the Ministry of Health initiated a project to assess the feasibility of establishing a national collection of outpatient data. As a result of that study, the 'NNPAC Phase 1A' project was established. The primary objective of that project was to better support IDF estimation, by increasing the robustness and timeliness of the process.

Representatives from a number of Sector organisations were on the project Steering Committee, or were included in the engagement process.

The NNPAC Phase 1A solution was deployed in July 2006. It delivered:

- A base technical infrastructure and data standards for purchase unit 'counting' elements;
- Simplified and enhanced processes for capturing counting data for emergency department, medical and surgical non-admitted patient events; and
- Access for DHBs to the collected data for analytical and statistical reporting.

NNPAC Phase 1A focused on collecting data that was already commonly captured by all DHBs, which included the emergency department, medical and surgical elements, noted above. Neither community nor domiciliary data elements were included.

As at the end of July 2006, 17 DHBs were providing non-admitted patient data via the new solution. It was expected that by December 2006 all 21 DHBs would be using the new solution and that data provided would be complete back to July 1st 2006.

1.2 Projects in Progress

NNPAC project phases

The Ministry-led NNPAC project remains active and is currently researching requirements to extend the collection. HISAC expects to guide the future development of the collection via this Action Zone.

An important distinction that needs to be made is that once 'NNPAC Phase 1b' is completed, the DHB Funding and Performance Directorate within the Ministry of Health will have achieved its primary objectives. Addressing future requirements for NNPAC will not be the responsibility of the DHB Funding

[6] For example, the combined IDF inflow and outflow totals for Hutt Valley DHB comprise approximately 20% of total annual turnover.

and Performance Directorate. This is discussed further under the topic of Governance.

National Systems Development Programme

The Ministry of Health has recently initiated the National Systems Development Programme (NSDP). The NSDP includes a 'National Collections' workstream that aims to improve the value of the information held within, and made available by, national collections, as well as reducing ownership costs. The NSDP expects to achieve these goals through standardising and formalising processes, governance and technology platforms.

Other NSDP work that is expected to be relevant includes improving analysis and reporting tools.

1.3 Areas for Improvement

Introduction

This section summarises the key challenges identified through the engagement process. These are the issues that this Action Zone will address.

In order to be complete, the challenge discussion includes issues that have been addressed through the NNPAC Phase 1A project.

IDF calculations

The challenge is IDF calculations being based on data and inefficient processes that are not broad or robust enough to be wholly accurate or to support other Sector requirements, e.g. to support clinical service delivery.

This affects DHBs and the Ministry of Health.

The impact is that DHBs cannot be confident that the process results in correct inter-district payments being made. Also, DHBs and the Ministry of Health must expend unnecessary time and effort in collating, returning and analysing the data.

- *This problem has been substantially, but not completely, addressed by the NNPAC Phase 1A project.*

Informing care planning and resourcing decisions

The challenge is a lack of access to reliable and timely data to inform service and workforce planning.

This affects DHBs, primary care and community care organisations, and researchers.

The impact is that incomplete and/or out-of-date data[7] is used for planning purposes, which may result in sub-optimal targeting of initiatives and allocation of resources. In some cases (e.g. primary or NGO care providers) care planners have no direct access to aggregated outpatient data.

Informing planning and funding decisions

The challenge is one of a lack of quality data being available to inform analysis of non-admitted patient activity and outcomes.

This affects policy makers, funding agencies and researchers.

The impact is that Sector effectiveness and productivity cannot be measured accurately, meaning that decision making (including regarding funding allocations) and policy are not as well informed as they could be.

[7] For example there are cases where data for the 2004/05 year has been used to inform 2007/08 DHB planning. It would be more desirable to at least have access to full-year data for 2005/06.

	Improving the data collation process and standardisation of content can be expected to increase data quality, make data available in a more timely fashion and reduce costs. ➢ *This issue has been at least partially addressed by the NNPAC Phase 1A project.*
Sustainability of current-state	**The challenge is** a heavy dependency on the tacit knowledge of one staff member within the Ministry of Health who has supported the manual collation of IDF data. While the process is documented, much of the knowledge is non-codifiable. **This affects** the sustainability of the manual IDF calculation process, presenting risks to the Ministry of Health and DHBs in particular. **The impact is that** if that key staff member left the Ministry, there would be a significant risk that IDF calculations and subsequent funding transfers would take longer and be less accurate and equitable for DHBs. *This risk has been substantially mitigated by the NNPAC Phase 1A project.*
Insufficient information	The **challenge** is there is insufficient information to help us better understand a patient's experience of care and how this needs to be improved.
Information in silos	The **challenge** is information is held in silos that do not allow easy integration and continuity of health care delivery as patients move between services or organisations.

1.4 Scoping Issues - Questions Raised

A number of important scope issues around Action Zone 9 are still being considered by HISAC. These include:

- Should Action Zone 9 cover all non-admitted patients treated in hospital? (An 'admitted' patient is sometimes called an inpatient or daypatient).
- Should DHB health delivery services provided outside of hospitals be included and if so, where is the boundary with Action Zone 10, Primary Care Information?
- Should Action Zone 9 include clinical diagnosis and treatment coding and if so, to what extent?
- Are there other information gaps, from a patient's perspective, that should be included?

1.5 NNPAC/Outpatient Information answering queries

Informing productivity and policy analysis, and service planning	Outpatient Information/NNPAC will provide Sector stakeholders with the information to answer a broad range of queries. Illustrative examples include: • What outpatient services are currently provided? • Where are outpatient services being delivered? • What are the volumes of outpatient services? • How long does it take to deliver outpatient services? • What is the likely future demand on outpatient services? • What are the trends relating to specialties and purchase units?

- How do workloads and projections compare across DHBs, including for tertiary services?
- What are the rates of progression between outpatient and inpatient services?
- Who is paying for outpatient activity?
- Are referrals to outpatient services appropriate in all cases?
- Can we track people using outpatient services back to the DHB of domicile?
- How safe are our services?
- What changes in practice are occurring in the sector? What is the impact of those changes on outcomes?
- How clinically effective is outpatient treatment?
- What conditions and presenting problems are outpatient services provided for?
- What is the profile of populations that receive outpatient services?
- What are the criteria that determine whether people are treated in an outpatient or an inpatient setting? How does this vary between DHBs?
- What is the risk profile of a population that could be heading for a hospital event?
- How does access to, and outcomes from, outpatient services vary across DHBs?
- Are there places where it would be more effective to intervene to slow or reverse a progression through a disease process?
- Are volumes increasing in line with increased funding?
- Do outpatient services address the needs of different ethnicities?
- How long is it taking for people to move through to more advanced disease states?
- Where should funding be allocated or prioritised?
- Are there changes in costs per group (e.g. by age) as life expectancy increases?
- Are costs linked to proximity to death rather than to age?

2 Achieving the Outpatient Information Strategy

2.1 Introduction and Key Features

Introduction

HISAC's vision is that Action Zone 9 will make outpatient information available for the purposes of clinical governance, service planning and resource allocation.

HISAC's strategy for this Action Zone is to establish data standards for outpatient information, provide a user-friendly, cost effective method of capturing the data within existing operational processes, and provide the information to authorised organisations.

The purpose of the Outpatient Information Action Zone will be to provide nationally consistent clinical and administrative data on outpatient activity. This will significantly enhance the information available for service planning, provide greater evidence of changes to health outcomes, enable better targeting of funding, and inform decisions regarding clinical service delivery.

HISAC recognises that considerable activity occurs outside of the publicly funded hospital services covered by Outpatient Information/NNPAC. To provide a complete view of patient interventions and outcomes, the scope of Outpatient Information/NNPAC will need to be extended.

Patient interventions occurring 'earlier' in the Sector

In setting the scope for this Action Zone, it is appropriate to consider movements in the points at which health care services are delivered. Increasingly, events are shifting from occurring in inpatient and daypatient settings to outpatient settings[8], and from outpatient to primary care settings. There are also shifts from primary care to non-admitted settings such as with the management of long term health conditions and the use of emergency departments for after-hours primary care. Refer to the diagram below.

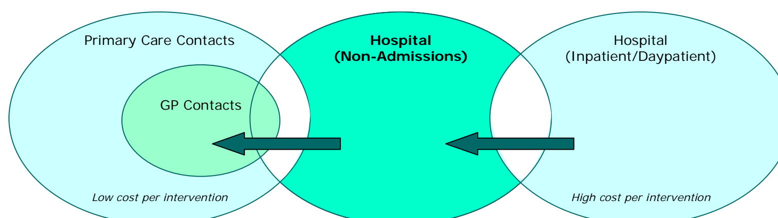

Figure 1: Movement in points of health care service delivery

The reasons for some of these shifts are compelling. Increased emphasis on prevention and early treatment results in better quality of life for the users of health care services. Also, where interventions occur 'earlier' in the service chain, costs are typically significantly lower.

This transition raises issues that the Outpatient Information/NNPAC Action Zone should address. As previously noted, comprehensive information regarding inpatient and daypatient activity is recorded and made available via the NMDS. As interventions move from an inpatient/daypatient setting to an outpatient setting, the absence of a non-admitted patient event collection means that events that were previously recorded are no longer captured.

[8] Many examples could be cited. An illustrative one is knee arthroscopy, which now routinely occurs as an outpatient procedure.

The implications are that:

- The ability of service planners (in primary and NGO care[9] settings as well as DHBs) and policy makers to measure, compare and plan decreases;
- Incomplete measurement of these migrated activities leaves the sector unable to defend itself against claims of inefficiency; and
- Funding models become less robust and transparent

Aligning with the HISAC vision for distributed health information and interoperability

HIS-NZ envisions[10] that in the future electronic health records (EHR) will be distributed at local, regional and national levels, with the richest and most detailed information about a health care user being retained locally, and subsets of information flowing to central (national) collection points. In each case those flows will require justification. For example, for Outpatient Information/NNPAC, data is required centrally in order to calculate IDFs, to allow cross-regional analyses of population health, or to allow comparisons against regional and national benchmarks.

Outpatient Information/NNPAC is not expected to become a front-line clinical service delivery support system. It is expected to be a tool to support service planning, policy development and IDF processes, and it may become a useful indexing component of a distributed EHR solution. As such, summary clinical data will be held in the Outpatient Information/NNPAC, but it is not expected to store detailed clinical records.

Consultation with Sector stakeholders confirms support for these views.

Sector stakeholders have a range of requirements for more complete and timely information to support the delivery of care. Extensive engagement has shown that there are more appropriate channels for delivering such information, e.g. a combined ‘eRSD’ (electronic referral, status update and discharge) solution[11].

Privacy and security

In all aspects and at all stages of Outpatient Information/NNPAC initiatives, privacy and security requirements will be considered and given effect, including:

- Appropriate management of access to personal information, whether it is in identifiable or in anonymised form;
- Securing physical and electronic access to NNPAC applications, and to data in storage or in transit;
- Requirements to record and audit access; and
- Complying with legislation, regulation and relevant government standards.

It is expected that, as an essentially equivalent system, the NMDS will be a useful benchmark when considering privacy and security.

[9] An example of where DHB forecasting information would assist NGOs is where hospices are involved with DHBs in coordinating the delivery of palliative care (e.g. palliative radiotherapy or chemotherapy).

[10] HIS-NZ section 3.3, pages 11-13.

[11] Refer to the PS&A documents for Action Zone 6 (eDischarges) and Action Zone 8 (eReferrals) for more information in this area. Additionally, Action Zone 12 (Anchoring Framework) addresses the options for, and the benefits of, a future distributed EHR model. One of the Key Features of Action Zone 12 is interoperability. For further detail, refer to the PS&A document for Action Zone 12.

Key Features	HISAC envisages that Outpatient Information will include the following Key Features: • Appropriate data elements and standards (including classification and clinical coding standards) to support both the clinical and the administrative information needs of Sector stakeholders; • Appropriate standards and mechanisms for collecting validated, consistently formatted data in a timely fashion; • Processes and supporting technologies that ensure practitioners and other stakeholders are provided with appropriate access to the data; • Governance (ownership, stewardship, custodianship) of the Outpatient Information is clear and allows the information (and governance of it) to evolve over time; • Appropriate reporting and data analysis functions; • Inclusion of NHI and HPI identifiers.
Service planning is better informed by access to quality information	For Sector organisations, policy makers, funding agencies and researchers, Outpatient Information/NNPAC will increase the availability and quality of outpatient event summary data, simply analysis, and provide greater evidence to support: • Care planning; • Benchmarking, including between provider organisations; • Managing and measuring sector productivity and efficiency; and • Targeting resources and initiatives to areas of greatest need. The productivity and effectiveness of secondary care service delivery cannot be judged by tracking inpatient measures (via NMDS) alone. Significantly more interactions occur as outpatient services than as inpatient and daypatient services. Visibility of outpatient services will allow service planners (and policy developers) to evaluate service strategies more effectively, through examining patterns of care. Clinical data on disease progression, combined with outpatient utilisation data from Outpatient Information/NNPAC will support the development of better guidelines and referral protocols to improve health and disability outcomes for health care users. Primary care practitioners are currently unable to easily access outpatient data that is often highly relevant to the management of patients in the general practice and NGO sectors. The Outpatient Information/NNPAC will improve the accessibility of summary data.
Better information is available for monitoring health outcomes	For Sector organisations, policy makers and researchers, Outpatient Information/NNPAC will improve the completeness and accuracy of data used to: • Assess population heath indicators; • Assess how initiatives in other areas (e.g. in primary care, or admitted patient activity) impact on outpatient services; • Measure the achievement of other outcomes; and • Inform policy development.
Financial management is more effective	For Sector organisations and funding agencies, Outpatient Information/NNPAC will support financial and resource management by improving the completeness and accuracy of data that enables: • More accurate forecasting of service volumes and thus resourcing

requirements;

- More robust pricing and definition of purchase units; and
- The collation and delivery of more accurate and timely inter-district flow data.

The current manually intensive process of collating data involves a significant amount of standardisation as part of 'cleansing' activity, which is inefficient and can potentially result in inaccurate translation. Outpatient Information/NNPAC will improve the collation process, which will:

- Increase data quality;
- Make data available in a more timely fashion; and
- Reduce costs to DHBs and the Ministry of Health.

2.2 Conceptual Design

Funding & Performance Data

Inter-District Flows

DHB IDF payments total $150 million per annum. Outpatient Information/NNPAC will deliver a solution that ensures that IDF data relating to outpatient activity is:

- Simpler, faster and more cost effective to collate and return; and
- More accurate and complete, and thus more reliable.

Detailed requirements and design work will be undertaken within individual sector implementation initiatives. Key data elements required to meet the objectives are fairly clear. These include:

- Patient (NHI), practitioner, facility and provider organisation (HPI) identifiers;
- Date and time of service;
- Counting elements covering specialty codes, purchase unit codes and service types (e.g. first specialist appointment, follow-up appointments); and
- ACC number where appropriate.

Purchase units that will be recorded include:

- Emergency department;
- Medical;
- Surgical;
- Community; and
- Domiciliary[12].

Funding Vote Health

Vote Health, and in turn DHB funding, grows each year in terms of costs, technology change and volume growth. Volume growth is funded through the demographic adjuster. The calculation uses current average costs per age group and gender. The component for personal health non-primary care is based solely on inpatient care information. Outpatient Information/NNPAC will make it possible to incorporate calculations based on non-admitted care information.

[12] It is expected that the addition of community and domiciliary data will pose significant challenges relating to workload.

Vote Health funding from ACC

ACC funds the Crown for ACC acute services. Currently ACC pays $50 million per annum for non-admitted patient services. However, confidence is not high that the calculation basis is accurate. Outpatient Information/NNPAC will enable more accurate calculation of funding amounts. Increases in data quality will also be supported, for instance by checking the ACC45 number format.

Funding by DHB

DHB funding is based on the population-based funding formula. Currently personal health and Health of Older People non-admitted patient services data is not used. Instead, inpatient data is used as a proxy. The non-admitted proportion of the formula allocates approximately $1 billion annually, and greater precision is desired. Outpatient Information/NNPAC will allow more appropriate and accurate information to be used.

Rural Adjuster

The Rural Adjuster allocates $77 million per annum, plus a further $38 million for travel and accommodation costs. NNPAC will improve the reliability of calculations relating to:

- Access to services;
- Travel times;
- Address;
- Facility purchase unit output measures by facility; and
- Identification of non-admitted visits eligible for travel and accommodation.

2.2.1 Summary Clinical Data

Introduction

NNPAC will implement data collection at patient (NHI) level that includes summary clinical data. The emphasis on 'summary' clinical data is important. The intention is not that the Outpatient Information/NNPAC will become a national clinical service delivery system, e.g. a patient administration system. Other Action Zones focus on the sharing of clinical data between Sector organisations. These include Action Zone 12 (Anchoring Framework) and Action Zones 6 (eDischarges) and 8 (eReferrals).

Uses of clinical data elements

Clinical data can inform uses such as:

Population health analyses

Uses will range from local (including by PHOs and NGOs), to regional, to national analyses. Examples of anticipated use include the following:

- Combining a diagnosis code with service type data will allow more accurate costing of events[13]. Amongst other things, this would allow ACC and the Ministry of Health to more accurately calculate how much ACC should contribute to Vote Health funding;
- Service organisations will be better able to target initiatives at patient 'audiences' and to understand the impacts initiatives are having on outcomes, as NNPAC will more effectively illustrate patterns of service delivery;
- NNPAC is expected to allow insights into population health to be gained more quickly. This speed will be valuable in time-sensitive situations, for

[13] For example, where service type relates to burn injuries there are significant differences in cost to treat a 1st degree burn and 3rd degree burns.

example where a trend in influenza-related outpatient events is identified early enough that PHOs can be informed in time to more effectively contain the outbreak than was possible in the past[14].

Benchmarking

- By making data available summarising non-admitted patient events, DHBs and other Sector organisations will be able to compare activities with regional and national benchmarks (e.g. averages). In this way, the Outpatient Information/NNPAC becomes a comparative reference source. It would allow a practitioner to answer the question, “am I treating condition X in the same way that my colleagues are?”

Resource and workforce planning

- By providing a more wide-ranging picture of service utilisation, planners will be more supported in forecasting resource needs, and thus in planning services.

Note that a combination of reference (e.g. NHI and HPI), administrative, financial and clinical data will often be required to meet these needs. More detail regarding analysis and reporting needs is in section 2.2.2.

Clinical data elements

The highest value summary clinical data elements that Outpatient Information/NNPAC will capture are expected to come from recording diagnosis and procedure elements. However, significant challenges (see below) must be overcome in implementing any clinical capture for Outpatient Information/NNPAC.

Challenges arising from collecting clinical data

While there is desire within the Sector for Outpatient Information/NNPAC to include standardised summary diagnostic and procedure codes, there are equally strong concerns regarding the cost and volume of work that could potentially be generated, particularly on an ongoing basis. The addition of any data elements that are not already recorded as a natural result of day-to-day service delivery must be well justified. The practicalities of coding information need to be considered.

The primary reason for this is the volume of non-admitted patient events. There are many times more non-admitted than admitted patient events to record. If coding standards such as ICD10 (for diagnosis) or SNOMED (for procedures) are used to code non-admitted patient events, then Sector stakeholders would question whether enough benefit will be realised to justify the cost.

One DHB has estimated that if existing approaches are duplicated to code clinical elements for Outpatient Information/NNPAC, it would need to spend an additional $1 million per annum on coding activity. Another DHB, which has approximately 500,000 non-admitted patient events annually, estimated that if 5 minutes is spent coding each event using ICD10, then an additional 26 full-time equivalent coding staff would be required.

Related to the cost implications are capability issues. It is unlikely that enough appropriately skilled clinical coders could be found. Currently, personnel are required to travel to Australia to access training.

Ideally, practitioners will code the event at the point of care, but the indication is that in order to avoid disrupting service delivery, coding will need to be as easy and as fast (e.g. less than 1 minute, ideally no more than 15-20 seconds) as possible.

[14] In the late 1990s it was possible for the first time to identify a local (by suburb) influenza outbreak early enough to contain it to the North Island. It is anticipated that the NNPAC would support earlier identification and thus more effective containment.

In conclusion:

- Including diagnosis and procedure codes in Outpatient Information will deliver a range of benefits; but
- The use of 'heavy' coding standards are not seen as feasible for reasons of cost and capacity, at least for the near future.

The NNPAC project is investigating a range of strategies to access clinical information without the need to capture this in Outpatient Information/NNPAC. This may be through linkages such as the NHI and other methods of identification, e.g. enrolled patients for specific health conditions such as diabetes or cancer.

HISAC will promote the development of a 'coding strategy':

- What is the business need,
- What level of specificity is required,
- What is the feasibility (e.g. DHB capacity), and
- What approach will be taken to implement any coding standard, e.g.:
  - Prototype approach:
  - One area such as cancer;
  - Across many areas;
  - Full or partial adoption of a code set.

2.2.2 Analysis and Reporting

Introduction

As a result of capturing administrative and summary clinical data on outpatient activity, Outpatient Information/NNPAC will be able to meet analysis and reporting requirements for health practitioners, Sector organisations, planners, funding agencies and researchers.

For DHBs, Outpatient Information/NNPAC is expected to:

- Inform service planning in/for provider arms, including transitions between channels (e.g. inpatient vs. outpatient); and
- For planning and funding functions, inform decisions regarding contracting with service sectors, by providing comparisons across DHBs by service.

For the Ministry of Health, Outpatient Information/NNPAC is expected to deliver better information regarding:

- Population health trends; and
- National pricing implications relating to procedures (this also benefits DHBs through informing IDF calculations).

For ACC, Outpatient Information/NNPAC is expected to provide more complete and accurate information regarding:

- Purchasing information; and
- Accident rates.

For other Sector organisations such as PHOs and NGOs, Outpatient Information/NNPAC is expected to inform service planning by improving the view on outpatient activity relating to location and service types.

Supporting prevention initiatives

DHBs, PHOs and NGOs expect that by making better and timelier local and regional population health information available, Outpatient Information/NNPAC will better support the targeting of training and prevention initiatives. Example scenarios include:

- An increase in the number of children under the age of five being injured by vehicles in driveways is detected. Plunket nurses focus on increasing

awareness amongst the community;

- Detection of a spike in the number of ankle injuries in an area results in hospital orthopaedic specialists visiting PHOs/GPs to provide ‘refresher’ education; and
- The number of gastroscopy procedures in an area increases to the point where waiting lists are long. Analysis indicates that in many cases the procedure was unnecessary, so a local PHO undertakes an education programme for its GPs, sharing best-practice guidelines and information on alternate first treatment options. As a result, many patients are able to avoid an often unpleasant procedure and waiting times for gastroscopy are significantly reduced[15].

Analysis and reporting services

In addition to providing Sector stakeholders with access to data so that they may undertake their own analyses, the Outpatient Information/NNPAC Action Zone will establish analysis and reporting services.

In many cases the information needs of stakeholders are the same (though often differing by geographic area). Outpatient Information/NNPAC will create a library of standard reports, to reduce duplication of work and the risk of misinterpreting data. It will be possible to generate reports ad-hoc, or to an appropriate schedule (e.g. monthly, quarterly or annually).

2.2.3 Governance

Introduction

The Outpatient Information/NNPAC Action Zone requires a governance structure that ensures it continues to meet the needs of Sector stakeholders over time.

In line with NZ e-Government Interoperability Framework (e-GIF) data management policies[16], governance roles will be categorised in terms of the following:

- **Ownership**, though it is expected that ownership of Outpatient Information/NNPAC is invested with the Crown;
- **Stewardship**, overseeing and guiding the management and evolution of Outpatient Information/NNPAC, ensuring that its purpose and principles are adhered to; and
- **Custodianship**, maintaining Outpatient Information/NNPAC on a day-to-day basis (operational management).

Existing governance

The NNPAC Phase 1A project established an operating governance structure. As that project focused wholly on delivering IDF-related functionality, the DHB Funding and Performance Directorate within the Ministry of Health performed the stewardship role, with continuing support from the NNPAC project Steering Committee.

The Ministry also acted as NNPAC custodian.

[15] In fact this scenario did take place. While the outcomes were achieved without NNPAC in place, a PHO representative indicated that NNPAC could have allowed the situation to be recognised before waiting lists became too long. A wider national view of which patients are being referred for procedures and for what reasons, would have been helpful. It may also have identified other causal factors.

[16] http://www.e.govt.nz/standards/e-gif/data-management-policies/

Future governance

As the Outpatient Information/NNPAC Action Zone evolves to deliver more than IDF-related functionality, stewardship needs will also evolve. Decisions relating to the governance of the Zone will need to be informed by related governance framework development within Action Zone 12 (Anchoring Framework).

It is expected that HISAC's National Collections Sub-committee will have a role to play in the stewardship of Outpatient Information.

It is expected that the Action Zone 9 governance framework will include:

- A set of principles and processes which will guide Outpatient Information/NNPAC development and management;
- Policies to ensure that Outpatient Information/NNPAC has a clearly defined purpose, and that it continues to support that purpose over time; and
- Guidelines for assessing the ongoing performance of Outpatient Information/NNPAC, i.e. how well it is meeting its purpose and is aligning with the appropriate principles and processes.

2.2.4 Accessibility

Gaining access

Outpatient Information/NNPAC needs to be accessible to DHBs, primary care and community care organisations, as well as national agencies such as the Ministry of Health and ACC. Outpatient Information/NNPAC will ensure that Sector stakeholders are made aware of the existence and purpose of the collection, in order that they are able to identify how it can be of use to them.

Processes will be established to ensure that new users of Outpatient Information/NNPAC are provisioned with access in a timely manner, and that they are provided with appropriate advice and support.

It may be hoped that the increased visibility of non-admitted patient information and its uses will encourage accurate coding.

Types of access

Outpatient Information/NNPAC will establish processes and supporting technologies to ensure that sector stakeholders are provided with appropriate (i.e. authorised) access to Outpatient Information/NNPAC data.

Access will include the ability to extract 'raw' unanalysed data, ideally enabled through simple parameter-based queries. It may be decided that access to uninterpreted data should be limited to certain audience groups.

Outpatient Information/NNPAC will also provide access to analysed data. Refer to section 2.2.2 (page 25).

Outpatient Information/NNPAC data will be presented in an intelligible form, with appropriate explanatory/contextual information provided.

2.2.5 Standards & Platform

Introduction

In order to successfully deliver value to the Sector, Outpatient Information/NNPAC will be dependent on the development and implementation of a number of shared standards and technology components.

A number of standards-related initiatives are being coordinated by the Health Information Standards Organisation (HISO) sub-committee of HISAC. It is expected that HISO will continue to lead the development of relevant standards.

The NNPAC Phase 1A project established a number of standards (e.g. common definitions for 'counting' elements) that will require re-examination

	as the scope of the collection grows. The development of all coding standards must consider the needs of all audience groups.
Technology platform	The Outpatient Information/NNPAC Action Zone will require a technology platform that will deliver appropriate availability, performance and security for its users. Appropriate standards (and supporting processes and agreements) will be required to ensure the smooth and effective operation of the collection, including for: • Data validation and error correction; and • Data representation and messaging (e.g. HL7). Validation and delivery mechanisms must be robust, as DHBs will not have the capacity to manage large volumes of rejected data.
Coding standards	Section 2.2.1 identified that the use of 'heavy' standards such as these are not considered feasible, at least in the short to medium term. The Outpatient Information/NNPAC Action Zone will promote the development of a 'coding strategy', i.e. identify the business need, the level of specificity required, feasibility issues (e.g. DHB capacity), and what approach will be taken to implement any coding standard (e.g. prototype approach, concentrating on one area such as cancer or across many areas, full or partial adoption of a code set).
Reference datasets	NHI and HPI numbers will be included in order to allow (appropriate) longitudinal analyses and linking Outpatient Information/NNPAC to other datasets. The NNPAC Phase 1A project implemented NHI recording. It also included a number of data fields relevant to HPI (health practitioner type, facility code and agency code). However, the HPI itself is not yet included.
Government standards and legislation	Standards and policies must align with relevant government standards, legislation and regulation, such as: • Privacy Act (1993) • Health Information Privacy Code (1994) • Accident Insurance Act (1998); • Policy Framework for Government-held Information (1997); • e-Government Interoperability Framework; and • Government Locator Service (NZGLS) (for location metadata). The NZSA153 standard specifies the minimum requirements for health event summaries. This standard should also be considered in developing the Outpatient Information/NNPAC, particularly if the collection is to provide summary/index data elements for a future distributed EHR model. The Ministry of Health's mandate to collect health information is set out in legislation, in particular in the Health Act (1956) section 22, Hospitals Act (1957) section 139A, and Cancer Registry Act 1993.

2.3 Links to Other Action Zones

Introduction

The 'jigsaw' diagram below illustrates the relationship between the Action Zones.

The Action Zones can be divided into three categories:

1. The enabling Action Zones (1, 11 and 12), together with Zones 2 and 3, contribute to the technology framework that will eventually be implemented for HIS-NZ;
2. Action Zones 4 through 10 provide functional solutions to improve patient care and operational efficiency;
3. Action Zones 7, 9, 10 deliver care and collect information for national purposes, including analysis and research.

The interrelationship between the Action Zones is a profound part of the overall Outpatient Information/NNPAC strategy and HIS-NZ and must form the foundation for the approach set out in this document.

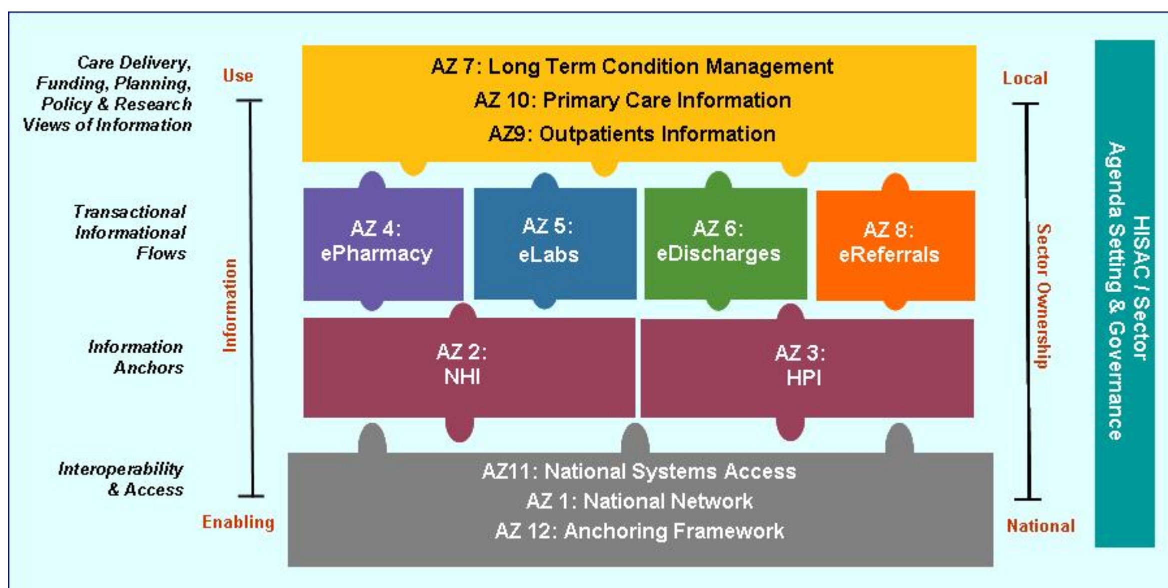

Figure 2: Action Zone 'jigsaw' diagram

eDischarges and eReferrals

Action Zones 6 (eDischarges) and 8 (eReferrals) complement the Outpatient Information/NNPAC Action Zone. While Outpatient Information/NNPAC will provide Sector stakeholders with access to national summary non-admitted patient event data for the purposes of planning and administration, eDischarges and eReferrals will deliver an eRSD solution that will enable better sharing of patient-specific data between health practitioners, thus supporting care delivery.

There are no strong dependencies between Outpatient Information and these other Action Zones.

Management of Long Term Conditions

Outpatient Information/NNPAC is expected to deliver some support for achieving the outcomes of Action Zone 7 (Management of Long Term Conditions), as the NNPAC will support the consistent measurement of avoidable hospitalisation and mortality. These are key quality measures for long term condition management.

Anchoring

In their Initial View for Action Zone 12, HISAC commits the Sector to develop and implement a framework for the identification, prioritisation, coordination

Framework	and governance of key enablers for information sharing and interoperability within the Sector, including (but not limited to) standardised architectural and data models, business processes, information technologies and usage principles and policies. Key Features of Action Zone 12, relating to the flow of health information around the Sector, include: • The Health Information Hierarchy, which is a model for shared distributed health information, including principles and conceptual architectures for information capture and sharing; • Health Event Summaries, related to individuals' and patients' health care events, are the starting point for improved information sharing across the Sector; • The Interoperability Framework defines the standards, policies and information specifications enabling meaningful, secure, consistent, reliable and cost effective capture and sharing of information. Action Zone 12 (Anchoring Framework) is an enabler for Outpatient Information/NNPAC. It will establish governance and interoperability frameworks for national health information which Action Zone 9 will utilise. In return, Action Zone 9 may contribute to Anchoring Framework initiatives to establish a working model for distributed EHR and event summaries. Action Zone 12 is also tasked with ensuring that the NHI and HPI are retrofitted to existing national systems and collections. Action Zones 2 (NHI Promotion) and 3 (HPI Implementation) are also relevant here as the NHI and HPI are key reference and linking datasets, however the stronger link is to Action Zone 12.
National System Access and National Network Strategy	Action Zone 11 (National System Access) is an enabler for Outpatient Information/NNPAC. It will deliver a number of accessibility solutions and standards that will enhance stakeholder access to Outpatient Information/NNPAC. These include accessibility, reporting, and identity management and access control initiatives. Action Zone 1 (National Network Strategy) will ultimately deliver a 'Next Generation Health Network' (NGHN) across which Sector stakeholders will access the Outpatient Information/NNPAC. It is expected that the Ministry of Health's NSDP programme will be the delivery mechanism for the NGHN.

3 Key Actions

Introduction

Implementation of the various key elements identified above will be incremental, as the ability of Sector organisations to progress initiatives will vary at different times, and there are dependencies on activities within other Action Zones.

The following summary diagrams present a proposed order for implementation of Key Actions, but it does not seek to constrain approaches. No schedule is specified at this stage. Explanatory information follows.

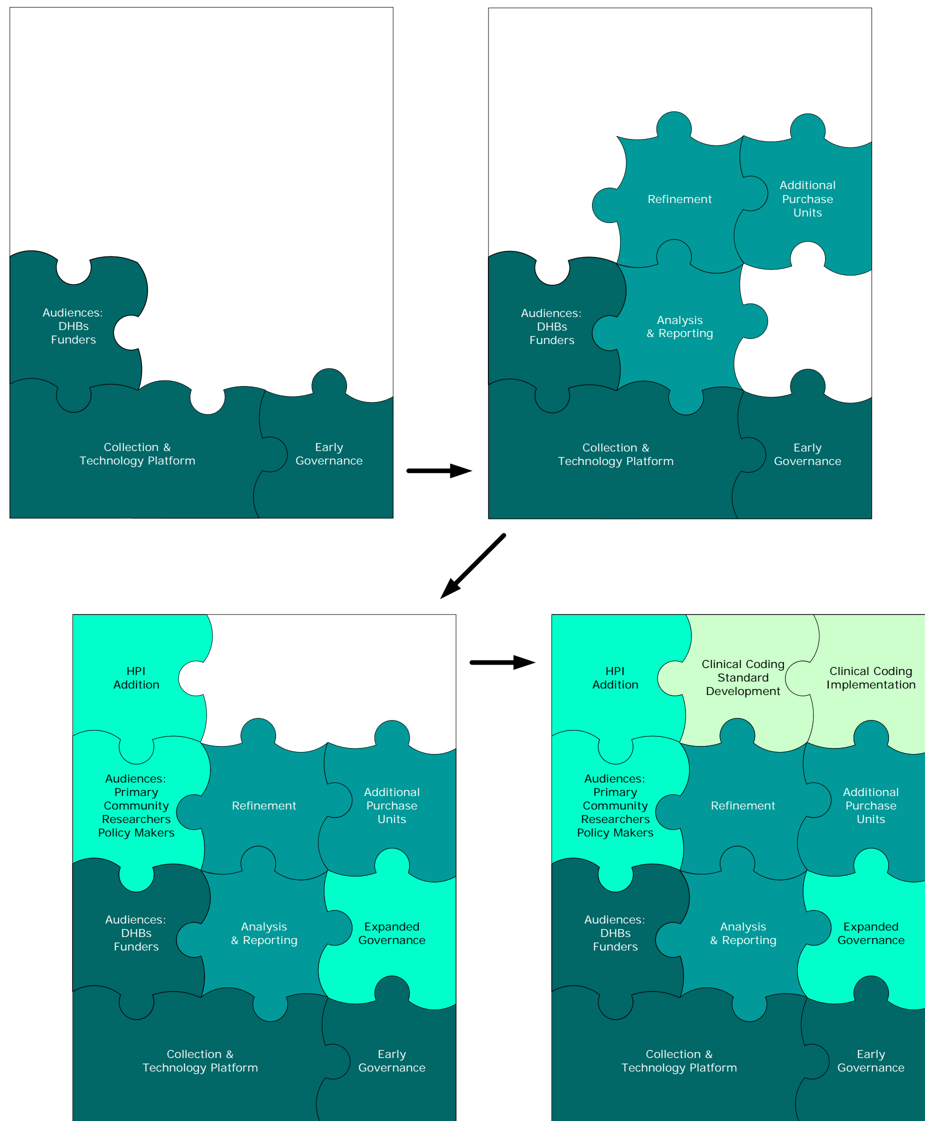

Figure 3: Proposed phases for implementation of Key Actions

Key Actions:

Foundation workstream

The foundation workstream will focus on delivering the governance and operational platforms required to establish and manage the NNPAC. It will include the following activity streams.

1. **Platform**. The first step in establishing the Outpatient Information/NNPAC is to implement the operating platform and initial data capture functionality. This will allow the collection to be used for IDF calculation, and improved calculation of the population-based funding

formula and demographic adjuster. It will also improve support for productivity analysis, output monitoring, and analysis of patient access to services. This work will include the following activities:

- Agree the minimum dataset for the initial collection. Focus on purchase unit areas where data capture by DHBs is ubiquitous: medical, surgical and emergency departments.

  Delivered by NNPAC Phase 1A.
- Establish standards (e.g. data dictionary, messaging formats), processes and agreements to ensure that appropriately validated data that is currently collected annually, is batched and transmitted on a more regular basis.

  Delivered by NNPAC Phase 1A.
- Establish collection platform, including hardware, software, security, etc.

  Delivered by NNPAC Phase 1A.
- Initiate operation of the NNPAC.

  Delivered by NNPAC Phase 1A.
- As the collection grows in scope, the technology platform will be reviewed to ensure it continues to perform appropriately.
- Governance. Governance of the Outpatient Information/NNPAC will be established in two phases:
- The first phase will establish a governance structure appropriate to a collection focused on financial data relating to outpatient services, and providing access to DHBs and national agencies.

  Delivered by NNPAC Phase 1A.
- The second phase will review the governance structure to ensure that responsibility evolves appropriately as the uses of the Outpatient Information/NNPAC expand to meet the needs of wider audience groups.

The challenges here include ensuring that data validation, error correction and transmission are as automated as possible. The target should be a 0% rejection rate of records where data content/syntax errors are the cause.

Key Actions:

Automation workstream

Data currently collected annually is batched and transmitted more regularly

Key Actions:

Access workstream

The access workstream will ensure that appropriate audiences have appropriate access to data held within Outpatient Information/NNPAC. It will include the following activities.

1. **Audience targeting**. As the Outpatient Information/NNPAC evolves, the target audiences will grow. The functionality delivered by the NNPAC Phase 1A project has a core audience of DHBs and funding agencies. As functionality grows, access will need to be provisioned to policy makers, primary care providers, researchers and some community care organisations. Access initiatives will include awareness activities targeted at ensuring that sector stakeholders know that NNPAC exists, the appropriate uses to which it may be put, and how interested parties may request access.

   The NNPAC Phase 1A project has implemented access for DHBs and funding agencies.
2. **Analysis and reporting**. Providing access to Outpatient Information/NNPAC data for analysis and reporting purposes will be the primary driver of accessibility initiatives once the data population

processes are 'bedded down'. Functions to support analysis and reporting will evolve over time as additional data elements are captured and wider audience groups are targeted[17]. Activities will include:

- Ensuring that access to unanalysed data is provisioned in the manner that will best support each stakeholder's requirements, for instance:
  - Via system interfaces such as messaging (e.g. most obviously to allow DHBs to return data - initial implementation delivered by the NNPAC Phase 1A project) or APIs;
  - Via web-based, parameter-driven data extract queries, with data delivered via email (compressed file) or on disk; or
  - For some users, access may actually be most effectively delivered through a manual information request process.
- Enabling the provision of analysed data via:
  - Developing, maintaining and providing access to a library of standard, commonly required reports; and
  - A service to handle the preparation and delivery of ad-hoc reports, potentially on a cost-recovery basis.

Challenges here include:

- Establishing robust authorisation and access control to ensure there is appropriate privacy and security management; and
- Ensuring Sector stakeholders remain informed of the status and accessibility of Outpatient Information/NNPAC.

Enhancement workstream

The enhancement workstream will progressively add value to the Outpatient Information/NNPAC, to meet the information needs of an expanded target audience. It will include the following activity streams.

1. **Refinement**. Lessons learned from the initial deployment of the Outpatient Information/NNPAC will be assessed and actioned, including:
   - Increasing the standardisation of purchase unit definitions and units of measure, giving priority to high-volume purchase units;
   - Increasing the completeness of data, in particular addressing cases where purchase unit information is difficult to collect; and
   - Ensuring the information needs of ACC are met.
2. **HPI implementation**. The HPI has not yet been fully implemented within Outpatient Information/NNPAC. It will be included as the HPI system becomes ready and DHBs are able to support its use.
3. **Adding specialties**. The breadth of the collection will be expanded by adding community and domiciliary purchase unit information. Further assessment of the costs versus the benefits of such expansion will be required, as it may increase the volume of transactions by a factor of 10, and information about those purchase units is typically not held in the same DHB patient management systems as the existing 'core' set.
4. **Clinical coding**. Incrementally implement the clinical data capture within Outpatient Information/NNPAC, directly from source and/or from linkages such as NHI and other methods of identification, e.g. enrolled patients for specific health conditions such as diabetes and

[17] The building of a 'critical mass' of data may also be a factor in deciding when to deploy some types of reports. For instance, some reports may only be useful when enough data is in place to illustrate seasonal variations in outpatient events.

cancer.

The most significant challenge facing this workstream is to ensure that any enhancements are well justified, i.e. that the value each provides outweighs its cost to the Sector.

Key Actions:

Expedition Workstream

Data is available more often, so more up-to-date information is accessible.

4 Stakeholder Benefits

Introduction

This section presents an overview of the benefits this Action Zone is expected to deliver to the various sector stakeholder groups. The stakeholder groups themselves are identified and discussed in the 'PS&A Foundation Document'.

Moving the sector forward

HIS-NZ represented the degree of 'eMaturity' of different areas of the Sector with the following 'thermometer' diagram.

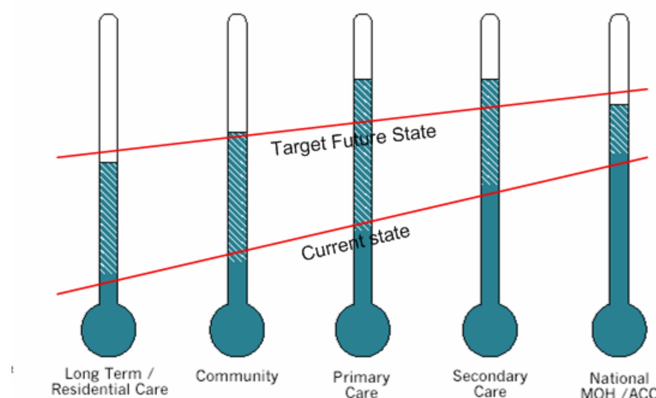

Figure 4: Health Sector information use 'thermometer' diagram

The initial phase of Outpatient Information/NNPAC activity is focused on delivering benefits to the Secondary Care and National areas, through making IDF processes work more efficiently and accurately.

As elements are added to support functions such as population health analysis and benchmarking, most areas of the Sector will benefit, though this will be to a lesser extent for Community and Long Term/Residential Care.

Clinical service delivery

Health practitioners, health users, Sector organisations and policy makers will benefit as clinical evidence and practise improve. Outpatient Information/NNPAC will enable this by making data available that can be used to:

- Inform clinical guidelines, care pathways and clinical profiling;
- Support policy development; and
- Potentially, provide a foundation step towards managing 'episodes of care' rather than individual care events.

Outcome quality

Sector organisations, policy makers, researchers, health practitioners and health users will benefit, as improvements in the management of outcome quality are realised. Outpatient Information/NNPAC will enable this through:

- Delivering more complete patient-level data to support improvements in service delivery;
- The ability to benchmark and make comparisons, including allowing practitioners and organisations to compare their own data against benchmarks and averages.
- The ability to measure and report on performance and outcomes, to enhance the effectiveness of care provided.

Sector productivity

Improved management of Sector productivity will be possible through access to data that enables:

- better resource allocation by targeting services and resources to areas of highest need;
- better trend analysis and estimation processes due to the availability of more, better quality data; and
- more complete cost-benefit analysis of treatment programmes;
- Measurement of total cost of treatment for non-admitted patient and emergency department events.

This will benefit Sector organisations, funding agencies, policy makers and researchers.

Additionally, some benefits will accrue to DHBs and the Ministry of Health as the automation of the IDF process will mean that more time can be spent on more value-oriented analysis work.

Financial management

Sector organisations, funding agencies and researchers will benefit as Outpatient Information NNPAC supports improved financial management by providing access to data that allows:

- More accurate forecasting of treatment costs;
- More robust pricing and definition of purchase units;
- Better risk analysis of non-admitted patients; and
- More accurate and timely information on IDFs
- Payments to DHBs being based on actual services provided, rather than on estimates based on annual “wash-ups”.

Indicators of success

Although it is too early for this Action Zone to have critical success factors and associated measures defined explicitly, it is possible to indicate how the success of Outpatient Information/NNPAC initiatives might be assessed.

With respect to IDF processes, it will be possible to measure time, cost and data quality gains realised by DHBs and the Ministry of Health.

With respect to informing service delivery and planning, Outpatient Information/NNPAC will be considered successful if it allows Sector stakeholders to answer the types of queries presented in the section NNPAC/Outpatient Information answering queries.

Appendix A Stakeholder Engagement

The following stakeholders were among those consulted during the investigations that led to this document. The second table presents a list of stakeholders who may be likely to be involved in further engagement.

HISAC	Tony Cooke
Consumer Groups and NGOs	Mary Schumacher – Chief Executive, Hospice NZ Jenny Prince – General Manager Operations, RNZ Plunket Society Brenda Hynes – National Clinical Advisor (Nursing), RNZ Plunket Society
Primary Care	Richard Medlicott – GP, Island Bay Medical Centre and member, Primary Care Information Management Group Ken Leech – Chief Information Officer, ProCare and member, Primary Care Information Management Group
DHBs	Tony Cooke – Chief Information Officer, Hutt Valley DHB Geoff Robinson – Chief Medical Officer, Capital & Coast DHB Kevin Sharkey – Manager Business Information Office, Capital & Coast DHB Owen Wallace – Chief Information Officer, Bay of Plenty DHB, and Steering Committee member, NNPAC programme Cheyne Chalmers – Director of Nursing, Capital & Coast DHB Chris Dever – Chief Information Officer, Canterbury DHB
Ministry of Health	Lyn Richardson – Senior Project Manager, Project Management and Electives, DHB Funding & Performance Directorate John Hazeldine – Manager Finance, DHB Funding & Performance Directorate Brendan Kelly – Chief Advisor Health Information Strategy & Policy, Corporate & Information Directorate Graeme Vaughan – Senior Analyst, NNPAC Project, DHB Funding & Performance Directorate Sandy Dawson – Chief Clinical Advisor, Long Term Conditions Policy & Strategy, Clinical Services Directorate Angela Pidd – Team Leader, Data Quality National Collections, NZ Health Information Service, Corporate & Information Directorate Frank Zhang – Senior Advisor Business Planning and Programme Coordination, HealthPAC
ACC	Doug Neilson – Manager Information Strategy, Information Management Group, and Steering Committee member, NNPAC programme

Next consultation steps	Time and budget constraints meant that wider consultation prior to developing this version of the document was not possible. It is expected that further consultation after September 2006 will provide additional value. In particular, the following people and organisations have been suggested: • Consumer representation groups: Engaging with consumer representatives will be an important step in widening the scope of

consultation once HISAC have considered the first version of this document

- Primary Care Information Management Group (certain members have been consulted individually)
- Academic researchers, possibly including Professor Murray Tilyard (Otago Medical School), Doctor Inga Hunter (Massey University), Professor Ken Warren (Informatics - Auckland University)
- Elizabeth Harding, Legal Advisor, Auckland DHB
- Julie Harris, Manager Decision Support, Auckland DHB
- Barry Kelleway, Business Applications Manager, Auckland DHB
- Alex Wheatley, Chief Information Officer, Lakes DHB
- Jo-Ann Jacobsen, Hawkes Bay DHB
- Christine Bennett, Information Services, Capital & Coast DHB
- Sandra Williams, Funding & Planning, Capital & Coast DHB
- Calum Lourie, Finance, Capital & Coast DHB
- Allan Peikowitz, GP Advisor, Auckland DHB
- Andrew Holmes, Clinical Services Directorate, Ministry of Health
- Vicki McLaughlin, Clinical Services Directorate, Ministry of Health
- Occupational Safety & Health, Department of Labour
- Statistics New Zealand

Appendix B Bibliography and References

Many papers, documents and other points of reference were used in the preparation of this document but particular reference was made to the following:

- "Health Information Strategy for New Zealand 2005", Health Information Strategy Steering Committee, August 2005.
- "National Non-Admitted Patient Collection - Indicative Scope", version 0.09 DRAFT, HISAC Office, HISAC, 8 May 2006.
- "National Non-Admitted Patient Collection – Programme Discussion Document", version 0.3 DRAFT, NNPAC Programme, 4 July 2006.
- "National Outpatient Collection – Sector Consultation Responses", version 1.0, HealthMAP, DHB Funding & Performance, Ministry of Health, 24 February 2005.