



NSW Health System Performance Indicators

August 2003

NSW DEPARTMENT OF HEALTH

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Abstract

Achieving results is a key endeavour of a wide range of people. Those involved in funding, managing, providing or receiving health care seem to agree that using performance measures is important for accountability and service improvement. This report provides a brief overview of developments in health system performance indicators and outlines a framework demonstrating linkages between local and state indicators and strategic objectives of the NSW health system. A health dashboard set of indicators is proposed for use by NSW central agencies of government; the NSW Department of Health; health service boards; chief executive officers; health clinicians and support staff.

Comments on the discussion paper leading to this report have been provided to the Independent Pricing and Regulatory Review Tribunal (IPART) for consideration as part of its Health Review. The final report will be provided to IPART, the NSW Department of Health and subsequently government for consideration. It is expected that an agreed dashboard indicator set will form the basis of future performance agreements between NSW Treasury, NSW Department of Health and Health Services and inform other NSW state and national health related agreements.

The NSW Health System Performance Indicator Committee

Reporting to the NSW Health Corporate Governance Steering Committee, the Health System Performance Indicator Committee was established to:

- review existing state, national and international resource material on health service performance indicators
- develop a conceptual framework and draft a minimum set of health service performance indicators that:
 - can be used at both state and local level taking into account national requirements
 - require minimal or no additional data collection
- act as the technical working group for the Independent Pricing and Regulatory Tribunal (IPART) Health Review
- provide a report including recommendations for implementation.

With over 6,000 health data items collected and up to 1,000 health indicators being reported it is not surprising that there have been repeated calls for a simpler more meaningful indicator set for health system performance (NSW Independent Pricing and Regulatory Tribunal 1998; NSW Health Council 2003).

Consumers, clinicians and managers at local and state levels are equally enthusiastic about agreeing on a small set of indicators for strategic management and reporting. Broad themes across these groups include the need for:

- better alignment of performance measures to strategic goals
- more explicit whole of government approaches through formal agreements
- improved recognition of rural and metropolitan specific issues
- more involvement of consumers in decision making
- improved sharing of data between state and commonwealth governments
- increased relevance and ease of use of indicators for clinicians and other staff.

During 2003, the NSW Health System Performance Indicator Committee was established to develop a minimum set of indicators that would be relevant at all levels within health. National and international developments were reviewed and a discussion paper recommending a number of indicators was circulated for comment. The final indicator set suggested in this paper reflects the goals and priorities of the NSW health system – Healthier People, Fairer Access, Quality Health Care and Better Value. This has created a health dashboard that allows monitoring of strategic directions while providing an early warning system for any necessary remedial action.

The dashboard contains 20 high-level indicators and is designed to provide better accountability for government; better information for strategic management at Departmental, Board/Health Service level and better alignment of effort at the clinical/operational level.

Most countries now develop their own national indicator sets with an increasing emphasis on public disclosure. At a national level Australian Health Ministers have supported a National Health Performance Framework that includes 40 high-level indicators. Individual states report against varying numbers of indicators in their annual reports and all states collect and provide performance data for national data sets on priority areas such as Aboriginal health, women's health, cancer screening, mental health, public health and the drug strategy.

Achieving the right number of indicators and the best output/outcome mix means new ways of looking at old indicators and expanding development of measures in areas that have traditionally been seen as too 'difficult'. This is particularly the case when assessing success in terms of access to community based health services or staff and consumer involvement in decision-making.

Health services are highly complex operations that require multi-dimensional collections of indicators to manage performance across such areas as clinical quality, support services, human resources and occupational health and safety. It was considered important that expectation of data collection, analysis and reporting did not place any undue burden on service provision and for that reason the majority of those indicators finally selected do not require any additional data collection by clinicians.

The health dashboard indicators are not designed to replace all indicators or measures currently reported in the health system. While indicators could justifiably be measured for each and every disease or condition, not all of these should appear on the dashboard as most are best measured, reported and used for decisions at the local level.

The absence of any particular indicator on the dashboard does not mean it is unimportant or that it will not be measured or acted upon. Dashboard indicators were chosen because they met the agreed criteria and were considered more representative than other indicators. Information at state, health service/hospital and clinical unit level can be generated for the majority of the suggested dashboard indicators.

A number of indicators require more collective agreement on technical details. For example *Dashboard #8: Access to targeted treatments* requires agreement on target populations and benchmarks for specific target treatments such as major joint replacement. Recommendations have been made in the report to bring relevant clinicians, consumers and managers together to agree on these issues.

Relevant, comprehensive and transparent information on performance is vital to enable clinicians and managers to drive up standards and it is equally important for patients and the public to have access to the same robust information. The report recommends establishment of a working party to progress the dashboard as a public accountability mechanism with the suggestion that some data may be meaningful for immediate publication.

With current national and international trends moving away from direct hierarchical control to indirect agreed accountability systems, the level of information reviewed should match both the level of accountability and the potential for the reviewer to instigate and complete innovative or remedial action.

It is suggested that central agencies of government would find dashboard results at a state level sufficient for accountability. Similarly, a dashboard based strategic report is useful for state level monitoring and planning by the Department of Health with individual Area Health Service results analysed where necessary.

While also reviewing state level results for comparisons, Health Service Boards and Chief Executive Officers may be more concerned with the next level of information, ie individual health services. Local management may wish to work with clinicians in reviewing information on a clinical unit basis and compare their hospital/service with others through internal and external benchmarking.

No comment has been made in the paper on the overall performance management system, related targets or performance incentives for health. Targets and incentives for agreed indicators would need to be decided through a separate consultative process with central agencies, health services, clinical and consumer groups.

The dashboard indicators should be used as the basis to report on the performance of the NSW Health System to external agencies and the general public. This approach, coupled with the overall performance management system, will allow greater clarity and consistency in accountability and reporting and provide greater opportunity for improving care.

The health dashboard

- 1 That the recommended health dashboard:
 - provide strategic information for the NSW health system and government
 - form part of the performance management system for health
 - be progressed as a public accountability mechanism.
- 2 That the Health System Performance Branch of the NSW Department of Health be responsible for coordinating implementation, monitoring and ongoing review of the health dashboard.
- 3 That the clinical reference group, convened to assist development of the NSW health dashboard indicators, continue in an advisory capacity over the next 12 months.

Development of performance agreements

- 4 That the Interagency Performance Framework being progressed by the Human Services CEO Forum include work on shared outcomes for the whole of government on the following indicators:
 - *Dashboard #1: Potentially avoidable deaths*
 - *Dashboard #2: Chronic disease risk index*
 - *Dashboard #4: Child and adult immunisation*
 - *Dashboard #5: Falls in older people*
 - *Dashboard #6: Self reported mental health.*
- 5 That the health dashboard be used as the Service and Resource Allocation Agreement between NSW Treasury and the NSW Department of Health.

- 6 That the health dashboard be used as the performance agreement between the NSW Department of Health and Area Health Services (*Area Health Services may also choose to include an additional limited number of indicators for locally identified priorities*).
- 7 That the health dashboard be modified as necessary for development of performance agreements between the NSW Department of Health and Corrections Health Service, the Ambulance Service of NSW and The Children's Hospital at Westmead to better reflect the unique nature of these services.
- 8 That the NSW Health Non Government Organisation (NGO) Advisory Committee review and revise the current Funding and Performance Agreement template in light of the dashboard indicators and distribute to Area Health Services for progressive implementation.

Analysis across the dashboard

- 9 That two priority care process indicators be included under the Quality Health Care goal. It is expected that agreement on those priorities to be included will change over time. For 2003/04 it is recommended that care processes for people suffering stroke and cancer be analysed across the health dashboard with the Indicator Clinical Reference Group providing advice on which dashboard indicators should be used in this analysis.

A stroke group and a prevalent cancer group are identified and analysed. This analysis starts at healthier people looking at death rates from avoidable causes (eg smoking, chronic disease risk factors) moving through access to emergency and hospital services (urgent surgery, radiotherapy), safety aspects of care and then into assessment of effective resource use for these groups of patients.

- 10 That all dashboard indicators be analysed to identify differences for rural and metropolitan area with cross border issues recognised in performance review of relevant Area Health Services.
- 11 To ensure the health system maintains a focus on provision of services and the health of Aboriginal people it is recommended that a workshop comprising relevant representatives be held to agree on those dashboard indicators most appropriately analysed by indigenous status.
- 12 That a combination of the Socioeconomic Index for Areas (SEIFA) and Vinson Unequal in Life indicators be analysed across the dashboard on an annual basis to demonstrate improvement in addressing the needs of disadvantaged groups at a State and Area Health Service level.

Refinement of dashboard indicators

- 13 That the Health System Performance Branch of the NSW Department of Health convene four separate workshops to progress the following matters:
 - *Dashboard #8: Access to targeted treatments*
Agreement on target population and accepted benchmark rates for access to coronary revascularisation, major joint replacements and radiotherapy treatment
 - *Dashboard #11: Safety*
Technical development of the safety index
 - *Dashboard #16: Patient and consumer experience*
Technical development of the consumer experience survey tool based on the patient satisfaction survey
 - *Dashboard #19: Effective resource use*
Technical development of the effective resource use index.

Workshops should involve consumers, non-government health care providers, clinicians (including general practitioners), regulatory bodies, professional groups, managers and technical staff relevant to the matter under discussion. Outcomes should be finalised by December 2003.

- 14 That dedicated resources be allocated for a working group to further develop *Dashboard #12 Skilled and valued workforce* by December 2003. The recommended dashboard indicator should represent optimal attraction, development and retention of the workforce in addition to staff involvement in decision making. *The working group should include consumers, clinicians, health support staff, learning and development staff, together with representatives from NSW Premiers Department and the NSW Department of Health. Regulatory bodies, professional and industrial associations should also be consulted as part of the development process.*
- 15 That the Emergency Department Clinical Implementation Group review current indicators for triage performance to identify a single, nationally agreed indicator for emergency triage response.

Priority areas for policy development

- 16 That the NSW Department of Health give priority to development of policy and subsequent high level indicators in the areas of:
 - early childhood intervention (to supplement *Dashboard #3: Antenatal visits before 20 weeks*)
 - performance of operating suites (as an element of *Dashboard #19: Effective resource use*)
 - variation in clinical procedure rates
 - appropriate use of community health services by specific target groups (as an element of *Dashboard #8: Access to targeted treatments*)
 - clinical and corporate governance.
- 17 That the NSW Department of Health expand implementation of Emergency Department information systems to busier rural sites as a priority.

The dashboard as a public accountability mechanism

- 18 That dedicated resources be allocated for a working group to progress the dashboard indicators as a public accountability mechanism:
- in state and local health service annual reports
 - as part of state and local health service websites specifically designed to meet the needs of general consumers, people from culturally and linguistically diverse communities and those with visual impairment
 - through other methods as determined by the working group.

The working group should include representatives/nominees from the NSW Health Participation Council, NSW Department of Health, Health Care Complaints Commission, clinicians and managers from Area Health Services and non-government health care providers.

- 19 That on the advice of the working group established by recommendation 18, any dashboard indicators suitable for immediate publication be included in 2003/04 annual reports and on relevant websites. Results on the remaining dashboard indicators should be made available to the public on websites by July 2004.

Sharing information for better accountability and results

- 20 That the NSW Department of Health, with the assistance of groups such as the NSW General Practice Advisory Committee, engage relevant Commonwealth agencies as partners to improve sharing of information between Commonwealth and State funded health providers. This engagement should result in more meaningful analysis of dashboard information and provide for better public accountability.
- 21 That the NSW Department of Health raise awareness of the development of NSW dashboard indicators with relevant National groups to allow for meaningful comparisons with other States/Territories. Groups include the National Health Performance Committee, the Steering Committee for Commonwealth and State Service Provision and the Australian Hospital Statistics Advisory Committee.
- 22 That the NSW Department of Health dedicate resources to monitoring and review of national and international comparative performance data with information used for ongoing evaluation of the health dashboard.

Evaluation and review

- 23 That implementation of the health dashboard be reviewed in May 2004 by an advisory committee comprising NSW Treasury and Department of Health officers, Area Health Service managers, clinicians, non government health providers and consumers.
- 24 That the health dashboard be reviewed annually for effectiveness and usefulness at all levels of the health system.

Summary of health dashboard indicators

3

Strategic directions	Suggested indicator	Desired outcome	Freq
Healthier people			
Staying healthy	1. Potentially avoidable deaths	– Increased life expectancy through health promotion, screening and early intervention.	Annual
	2. Chronic disease risk index	– Reduced chronic disease through target programs, eg decreasing tobacco use.	Annual
	3. Ante natal visits before 20 weeks	– Higher birth weight babies reducing the risk of ill health in later life.	Annual
Better quality of life	4. Child and adult Immunisation	– Reduced illness/death from vaccine preventable diseases in children and older people.	Annual
	5. Falls in older people	– Reduced illness and death from fall related injuries in older people.	Annual
Improved social environment	6. Self reported mental health	– Improved mental health and wellbeing of the community.	Quarterly
Fairer access			
Treatment when you need it	7. Access to emergency services	– More timely emergency treatment to improve survival, quality of life and satisfaction.	Monthly
	8. Access to targeted treatments	– Improved quality/length of life for target groups through access to specific treatment.	Monthly
	9. Access to hospital treatment	– Reduced waiting time for booked/emergency procedures and improved quality of life.	Monthly
Having a fair share	10. Fairer distribution of funding	– More equitable access to distributed health funding.	Annual
<i>Levels of health are equal</i>	<i>All dashboard indicators will be analysed by indigenous status and rural/metropolitan areas. Annual analysis will also be undertaken across the dashboard of improvement trends for disadvantaged groups.</i>		
Quality health care			
The right care	11. Safety	– Safer health care with a reduction in adverse events.	Annual
	12. Skilled and valued workforce	– More services and better quality care.	Quarterly
Well coordinated care	13. Potentially avoidable hospitalisation	– Greater independence and health for people who can be kept well at home.	Annual
	14. Priority care process – stroke	– Improved care and health outcomes for people suffering stroke.	Bi-annual
	15. Priority care process – cancer	– Improved care and health outcomes for people suffering cancer.	Bi-annual
Shared decision making	16. Patient and experience	– Greater satisfaction with services and stronger sense of involvement.	Bi-annual
Better value			
Using money wisely	17. Staying on budget	– Continued sound financial management of health services.	Monthly
Services are efficient	18. Maximising service output	– Maximising activity in the health system.	Quarterly
	19. Effective resource use	– Making the best use of the health dollar.	Quarterly
Assets are well managed	20. Asset utilisation	– Taking better care of health assets.	Annual

In 1998, the NSW Department of Health implemented internal reporting on key performance indicators recommended by the Independent Pricing and Regulatory Tribunal (IPART). Subsequently the Report of the NSW Health Council in 2000 recommended a consolidated simple set of performance indicators be developed for use at all levels within the health system.

There is keen interest in performance management systems that include high level performance indicators across national and international health systems. This interest derives from a wide range of motivations including:

- stronger governance
- better accountability
- improved community understanding of health systems
- enhanced consumer influence within health systems
- promotion of competition between providers and services
- service quality improvement.

In 2003, a Health System Performance Indicator Committee was established with representation from NSW Area Health Services, NSW Treasury, IPART (ex officio) and the NSW Department of Health. The committee was to review existing state, national and international information on performance indicators and develop a minimum set of indicators that could be used at state and local levels.

International developments

International and national developments have led to several indicator frameworks and a vast proliferation of indicators. Many countries are developing national performance indicator sets that typically reflect particular issues for their local systems. These sets are developed as publicly available information to complement other performance information used and published internally. A summary of indicator sets reviewed for Australia, United States, United Kingdom and Canada are provided in appendix A.

Broad themes that can be discerned in the various initiatives internationally include:

- a focus on coordination and alignment of indicator sets across national systems
- increasing emphasis on public disclosure of indicators for sub national organisational units (US, Canada, UK). While there is only limited evidence public access to data impacts on consumer choice, there is evidence providers respond to public disclosure (Thompson et al 2003)
- recognition of the need for a balanced set of indicators rather than focussing on one aspect of performance over others eg financial
- moves to systematically review the evidence base for indicators.

National developments

Australian Health Ministers have agreed on a National Health Performance Framework. This Framework is a three-tier system incorporating 40 health indicators, of which around 25 relate to the third tier titled Health System Performance (table two). The Australian Institute of Health and Welfare has also adopted the Framework, which shows close alignment with the NSW Quality Framework and is consistent with the approach adopted by the Productivity Commission in its *Review of Government Services Report*.

In addition there are national frameworks that include performance indicators for public health, Aboriginal and Torres Strait Islander health and mental health. These have all been considered during development of the NSW health dashboard.

State developments

All States and Territories are active in developing and reporting performance indicators. In addition there are a wide range of clinical and non-clinical indicators and output measures used by each state and territory to monitor performance. Table 3 outlines some of the major published indicator sets in four States/Territories.

In a number of states there are moves to get closer alignment between indicators and corporate goals. Indicator areas are mainly centred on quality, safety and efficiency with up to 60 indicators regularly reviewed by regional boards in Victoria. Queensland Health is currently developing a balanced scorecard integrating strategy and performance and up to 40 indicators are being considered.

Table 2. Australian national health performance framework

National health performance framework	Dimensions
Tier 1 – Health	health conditions, outcomes human function, life expectancy, wellbeing and deaths
Tier 2 – Determinants	environmental factors, of health socio-economic factors, community capacity, health behaviours and person-related factors
Tier 3 – Health system performance	effective, appropriate, efficient, responsive, accessible, safe continuous, capable and sustainable

Table 3. Major indicator sets in states and territories

State	Indicator sets	Number of indicators
Northern Territory	Annual Report	68 indicators/output measures
Queensland	Annual Report	<ul style="list-style-type: none"> ● 58 indicators/output measures ● Quality in patient study across 60 hospitals ● Balanced scorecard (under development)
Victoria	Hospital Services Report (Quarterly) Annual Report Budget Papers Quality Framework	<ul style="list-style-type: none"> ● 15 Indicators ● 117 Non Financial/Health Indicators ● 117 Non Financial/Health Indicators ● 36 Performance Indicators (Services receive feedback quarterly)
Western Australia	Annual Report	58 Indicators: <ul style="list-style-type: none"> – 13 Health Status and Determinants of Health – 30 Effectiveness – 15 Efficiency

NSW state frameworks

The current measuring and reporting mechanisms across the health system are diverse, with a range of indicators used at Departmental, Area Health Service and facility/service levels. While many are useful to management and clinicians, the direct relationship of these indicators to achievement of goals for the NSW health system can be unclear.

In addition to the national frameworks, there are also a number of state frameworks to consider in the health arena. The Service and Resource Allocation Agreements (SRAA) between Treasury and Health, the NSW Health Quality Framework and Strategic Directions for Health 2000–2005 need to be consistently applied.

NSW Treasury develops SRA Agreements with other public sector agencies to document the deliverable that each agency will provide for any allocated resources. The 2002/03 SRAA contained approximately 125 indicators, ranging from broad program expenditure (actual and estimated) to indicators showing application of specific growth funding by Area Health Service. In 2002, the NSW Treasury reviewed the SRAA to better demonstrate the links between resources allocated and what would be achieved in terms of short and long-term outcomes.

Similar to the Commonwealth Department of Treasury agreements, the revised NSW SRAA applies program or intervention logic for each outcome. This means that each agency is required to demonstrate why use of particular strategies will lead to the desired outcome. Table 4 is an example

of the link between a local health strategy and the agreed desired outcome of reducing the percentage of low birth weight babies.

The *Framework for Managing Quality of Health Services in NSW* is based on six dimensions of quality that have been selected to encompass aspects of care relevant to patients and providers. The six dimensions of quality (safety, effectiveness, appropriateness, consumer participation, efficiency and access) are also incorporated within tier three of the National Health Performance Framework and are consistent with the recommended health dashboard.

Strategic Directions for Health 2000–2005 sets out four goals that direct NSW health services toward their common purpose.

- 1 Healthier People – staying healthy, better quality of life, improved social environment.
- 2 Fairer Access – treatment when you need it, having a fair share, levels of health are equal.
- 3 Quality Health Care – the right care, well-coordinated care, shared decision-making.
- 4 Better Value – using money wisely, services are efficient, assets are well managed.

Consistent with the approach adopted by state and national agencies, the four goals of the NSW health system were used as the framework to develop the dashboard set of performance indicators.

Table 4. Example of the link between strategy and dashboard

Strategic objective	Desired outcome	Dashboard indicator	Intermediate impact	Local strategies
Healthier People <i>Better Quality of Life</i>	Decrease in % low birth weight babies, reduced risk of ill health in later life	% Confinements where first visit was before 20 weeks gestation	Increased % of pregnant women where first antenatal visit < 20 weeks	Eg mobile antenatal clinics

Key performance indicators should reflect the priorities and strategic direction of the system effectively creating a management dashboard for health. Using the term dashboard to describe a high-level set of indicators was supported as a dashboard provides an overview of performance and acts as an early warning sign on areas where performance needs to be improved or policy requires review or development.

The table on page 7, provides a summary of the recommended dashboard indicators against the relevant NSW Health goals and priorities. A full description of each dashboard indicator, outlining the rationale for inclusion, is provided under each goal (pp 17-43).

The potential number of indicators is limitless, with at least 30 indicators that could be measured for any particular disease or condition. Not all indicators could or should appear on the dashboard as most are best measured, reported and used for decisions at the local level. To create the health dashboard, a target was set for no more than 10 indicators. A workshop was held to agree on criteria for inclusion of indicators and the national criteria adapted for this purpose (appendix B). Following application of the agreed criteria and robust discussion, committee members consulted locally and developed explicit links between particular indicators and desired outcomes. Submissions were also received following a number of presentations to key groups and these submissions were considered using the same methodology (consultation summary at appendix D).

A discussion paper on health system performance indicators was developed between January and May and circulated in June 2003 for comment to Area Health Services; central agencies of government; clinical and consumer related groups. Fifty written responses were received with 30 organisations providing a completed submission. In these submissions, respondents scored

individual indicators across a ranking scale from 0-3 where 3 = definitely include and 0 = definitely not include in the dashboard indicators.

During the consultation period, individual committee members facilitated local discussion with a number of formal presentations to interested groups. A clinical reference group was established (appendix E) with agreement from these clinicians to continue throughout the implementation phase in an advisory capacity.

Typical general comments on the discussion paper included:

'The draft indicators have two good features: they are linked to the Strategic Directions framework and are relatively small in number with several indicators that are performance drivers.'
Hunter Area Health Service

'Development of proposed indicators most welcome. Application to all public health services and NGOs promises effective measurement of performance of the health system. Need to dedicate specific resources to development of methods for meaningful reporting to the public.'
Health Care Complaints Commission

'Indicators need to be simplified, they are currently too complex for the community to understand.'
Surgeon

'The balance of acute and community indicators needs to be addressed eg access to primary and community-based services.'
Primary and Community Care Branch DoH

'Emergency Department measurements reflect only access rather than quality of care provided.'
Emergency Physician

'The concept of a pre-specified, stable and system-wide suite of KPIs cascading to AHSs will reduce micromanagement and is endorsed.'
Health Services Association

'Needs to be accompanied by rationalisation of all data collections.'
The Children's Hospital at Westmead

The committee sought to critique each indicator not only in its own right using agreed criteria and accepted frameworks for indicators but also in the context of the best possible ‘mix’ of indicators. Each of the submissions received were reviewed with many suggestions incorporated into the final dashboard set. The absence of any particular indicator on the dashboard does not infer it is an inadequate indicator, that it was considered unimportant or that its optimal management is not a priority. Where an indicator was not included on the dashboard, it was because:

- alternative indicators were considered more representative
- indicators were more usefully collected, collated, considered and enacted at the unit level through quality improvement, eg variations in certain procedure rates
- indicators were based on estimates of numerators without denominators, eg identifying the expenditure between clinical and non-clinical services is problematic
- indicators were supported but systems were not in place to collect data reliably and efficiently. For example, collecting waiting times from an Aged Care Assessment Team’s final recommendation for receipt of services (ie residential and non-residential care services) and the time these services commenced. This indicator relies on data from the Commonwealth, which is currently not available to the states.

Frequency of review

A major consideration in the use of the indicators is the frequency with which information on each indicator is collected, reported, and acted upon. It is important to note that, while it may be possible to update some information frequently, eg monthly, there may be little point in reporting or acting on it over such a short time frame. Indicators that are reported annually typically reflect long-term strategic objectives of the health system to promote, maintain and protect health. Indicators that are reported quarterly or monthly tend to reflect aspects of service delivery necessary to be managed and fine-tuned on a very short-term basis.

Other indicators are sentinel indicators that flag areas for closer inspection but in and of themselves provide inadequate information about the dimensions of performance that need better management. These indicators would need further investigation of any positive or negative trend or disparity.

A recommendation on optimal frequency for review has been included in discussion on each indicator (pp 17-43) and has been based on:

- the frequency with which the information is available
- any data system lags between events occurring and the information becoming available
- the responsiveness of the indicator, ie the rate of change that it is capable of showing.

Relevance

Fundamental to improving performance and affecting change is that the desired performance is clearly articulated and understood throughout the organisation. The health dashboard is aligned to the current strategic directions of the health system and needs to be seen as relevant by all levels within that system.

For example one of the suggested dashboard indicators, safety, is designed to provide clinicians and managers with useful trend information on potential adverse events. This disaggregated annual data is useful to both local and state-based

managers and clinicians in agreeing target areas for system improvement and should complement the regular data collected and reviewed locally through real-time adverse event reports.

Consistency

The health dashboard is consistent with the four goals of the NSW health system and has indicators common to reporting sets of the National Public Health Partnership, National Health Performance Committee, National Aboriginal and Torres Strait Islander (New Ways of Doing Business), Australian Council on Health Care Standards and the NSW Quality Framework.

Table 4 looks at the relationship between the health dashboard and indicators used by the Australian National Health Performance Committee, the English NHS and the Canadian Health system. This table outlines areas that are common (shaded) or where the same indicators are used (bold). Consistency is necessarily low in areas that are specific to NSW local circumstance such as the application of the resource distribution formula. While further work is needed to determine consistency in exact definitions, it is suggested that future benchmarking with these systems may be usefully undertaken on the recommended health dashboard indicators.

Table 4. Consistency of NSW Department of Health Dashboard indicators with Australian National Framework and published indicators Canada and English NHS

NSW Health dashboard	Australian National framework*	Canadian published indicators	English National Health Service published indicators
1. Potentially avoidable deaths	Potentially avoidable deaths	Life expectancy	Life expectancy
2. Chronic disease risk index	Multiple indicators	Multiple indicators	Multiple indicators
3. Antenatal visits < 20 weeks	Antenatal visits < 20 weeks	% low birth weight babies	Infant mortality rate
4. Child and adult immunisation	Child and adult immunisation	Child and adult immunisation	Child and adult immunisation
5. Falls in older people	Deaths from injury (all causes)	Potential YLL due to unintentional injury	Deaths from accidents
6. Self reported mental health	Self reported mental health	Self reported health	Suicide rates Prescribing rates for some drugs
7. Ambulance response Triage response	% patients seen within triage category times	No published indicator	No published indicator
8. Coronary revascularisation Major joint replacement Radiotherapy rates	Coronary revascularisation Major joint replacement	Major joint replacement Waiting time for radiotherapy – breast and prostate cancer	Coronary revascularisation Major joint replacement
9. U1/U2 admitted to hospital < 30 days All ready for care list patients waiting < 12 months Access block	Median waiting time – all on waiting list – coronary revascularisation – hip replacement	Median waiting time – surgery – cardiac procedures – hip and knee replacement – diagnostic services – specialist visits	% waiting < 6 months for inpatient admission % seen < 13 weeks of GP referral for first OPD appt % seen < 2 weeks of urgent GP referral to OPD specialist for cancer % admitted through ED not in ward bed within 4 hours of decision to admit
10. Av distance from RDF target	No draft indicator	No published indicator	No published indicator

NSW Health dashboard	Australian National framework*	Canadian published indicators	English National Health Service published indicators
11. Length of stay>outlier Unplanned readmission < 28days Unplanned readmission ICU < 72hrs Unplanned return to OR	Hospital separations for a reported adverse event (not supported for state reporting)	Unplanned readmission for – Acute myocardial infarction – pneumonia	Length of stay >outlier Unplanned readmissions < 28 days
12. Staff separation rate	% of workforce aged > 50yrs Graduates as a % of workforce	No published indicator	Junior doctor hours Vacancy rates – allied health, nurses, consultants Sick leave Number of GPs
13. Potential avoidable hospitalisation	Potential avoidable hospitalisation	Potential avoidable hospitalisation	No published indicator
14. Priority care process – stroke	Mortality following stroke	Mortality rate for stroke 30 day survival rate following stroke Potential YLL from stroke	Returning home < 56 days following hospital treatment for stroke > 50 yrs Emergency readmission to hospital < 28 days following stroke Death < 30 days of admission for stroke
15. Priority care process – cancer	Five-year cancer survival rate	For selected cancer types – five-year survival rate – Potential YLL	Mortality rate all cancer types Five-year survival rate
16. Patient satisfaction <i>Overall, inpatient, emergency, community health, early childhood centre, public dental clinic</i> Consumer experience	No draft indicator	Patient satisfaction <i>Overall, hospital, family doctor, community services</i>	% written complaints resolved locally within 4 weeks
17. Net cost of service general fund (general)	No draft indicator	No published indicator	No published indicator
18. Weighted output measure	Cost per case mix adjusted separation	No published indicator	Index of actual cost of activity using national averages
19. Effective resource index	Relative stay index by medical/surgical and other DRGs	No published indicator	Ratio of observed to expected day case rate for a basket of 25 case mix adjusted procedures
20. Asset utilisation	No draft indicator	No published indicator	No published indicator

* Indicators selected for reporting in the draft National Report on Health Sector Performance Indicators 2003

Goal One. Healthier people

The structure of NSW Health Strategic Directions, particularly as it relates to health outcomes has been the subject of much discussion throughout the development process. The Healthier People goal is highly consistent with tier one in the National Framework – Health Status and Outcomes.

Consultation summary

Dashboard 1 <i>Potentially avoidable deaths</i>	A number of respondents suggested that the terminology for this indicator was misleading as it refers to deaths from preventable causes rather than preventable deaths. It was agreed that as the indicator was widely accepted in the public health arena, both nationally and internationally, it should remain as stated. It is expected that consumer advice on presentation will be facilitated through the group responsible for progressing the dashboard as a public accountability mechanism (refer recommendation 18).
Dashboard 2 <i>Chronic disease risk index</i>	This indicator was strongly supported for inclusion with the suggestion that it be an area for shared accountability across the whole of government. (refer recommendation 4).
Dashboard 3 <i>Antenatal visits before 20 weeks</i>	Respondents supported this indicator for inclusion as strategies to reduce the number of low birth weight and premature babies was recognised nationally and internationally as influencing later health behaviours of mothers and babies. It was also supported as it reflected efforts to engage mothers through community-based activities and initiatives such as the current whole of government NSW Families First initiative.
Dashboard 4 <i>Child and adult immunisation</i>	Immunisation was widely supported for addition to the dashboard. It was agreed that both childhood immunisation and influenza/pneumococcal immunisation for the elderly be included.
Dashboard 5 <i>Falls in older people</i>	Similar to immunisation, there was significant support for addition of this indicator to the dashboard.
Dashboard 6 <i>Self reported mental health</i>	Another well supported indicator, this measure has now been adopted in the next phase of the National Health Performance Indicator Committee reporting set.

Dashboard 1. Potentially avoidable deaths

Desired outcome	Increased life expectancy through health promotion, screening and early intervention.
Rationale	<p>Potentially avoidable deaths are those attributed to conditions that are considered preventable or otherwise avoidable through earlier intervention. The categorisation of individual causes of death into ‘avoidable’ and ‘unavoidable’ groups provides a summary measure that can be used to assess the overall effectiveness of health services and programs.</p> <p>The causes of avoidable deaths can be further divided into those that may be prevented through:</p> <ul style="list-style-type: none"> ● Primary level interventions – those that can prevent the condition developing, such as promotions of lifestyle modification and preventive medicine. ● Secondary level interventions – those that detect or respond to the condition early in its progression, such as cancer screening and chronic disease management. ● Tertiary level interventions – those that treat the condition, to prevent death from occurring prematurely, such as cardiac revascularisation procedures (eg coronary artery bypass grafting). <p>Differentiating premature deaths (before age 75 years) from all deaths, and then, avoidable premature deaths from all premature deaths, provides an outcome measure that is more sensitive to the direct impacts of health system interventions. At the same time this measure still places a focus on the causes of the greatest burden of premature death in the population.</p> <p>This indicator is based on work published by Tobias M, Jackson G. <i>Avoidable mortality in New Zealand, 1981-97</i>. Aust NZ J Public Health 2001; 25: 12-20 and in NSW in <i>Health of the People of New South Wales, Report of the Chief Health Officer, 2002</i>. NSW Department of Health, October 2002. It has been included in the National Health Performance Committee reporting set.</p>
Definition	<p>Age-adjusted rates of primary, secondary and tertiary avoidable mortality.</p> <p>Numerator: Codes and weights for primary, secondary and tertiary avoidable mortality published in Tobias M, Jackson G. <i>Avoidable mortality in New Zealand, 1981-97</i>. Aust NZ J Public Health 2001; 25: 12-20 and <i>Health of the People of New South Wales, Report of the Chief Health Officer, 2002</i>. NSW Department of Health, October 2002.</p> <p>Denominator: NSW Estimated Residential Populations and Australian Standard Population.</p>
Presentation and interpretation	<p>20-year trend lines for avoidable mortality associated with primary, secondary and tertiary health interventions. Improvement is indicated by downward trends. Analysis will be presented by rural/metropolitan area. Information will be updated on the Dashboard annually.</p>
Data	<p>ABS mortality data (HOIST).</p> <p>ABS population data (HOIST).</p>
Development	Indigenous data are not yet available for five-year trend analysis.

Dashboard 2. Chronic disease risk index

Desired outcome	Reduced chronic disease through target programs.
Rationale	<p>The chronic disease risk factor index is a high-level indicator for monitoring the implementation of a whole-of-system approach to prevention and management strategies. Successful implementation impacts on environmental, psychosocial and behavioural determinants of health. Six priorities for action are identified in <i>Chronic Disease Prevention Strategy 2003-2007</i>. These priority areas focus on the integration of existing programs and activities within statewide portfolios for tobacco, nutrition, alcohol, physical activity and mental health promotion while addressing inequities in the burden of chronic disease.</p> <p>The cluster of diseases and conditions encompassed by the <i>Chronic Disease Prevention Strategy 2003-2007</i> are: cardiovascular diseases; cancers; chronic lung disease; non-insulin dependent diabetes; obesity; injuries from falls and poor emotional and psychological well-being. The components of this index which are currently collected through the NSW Health Survey are:</p> <ul style="list-style-type: none"> ● smoking – current tobacco smoker ● sedentary – inadequate physical activity ● obesity – overweight or obese ● alcohol – at least one risk drinking behaviour ● nutrition – consuming insufficient quantities of fruit and vegetables for health benefit ● mental health – psychological distress. <p>The individual indicators underlying the index are all used at the state and national level and have been included in both the National Public Health Partnership and National Health Performance Committee reporting set. The underlying indicators are also included in the biennial report <i>Health of the People of NSW, Report of the Chief Health Officer</i>, NSW Department of Health. The underlying indicators are currently used for inter area comparisons.</p>
Definition	<p>Percentage of the population with three or more chronic disease risk factors in NSW, by sex and age.</p> <p>Numerator and denominator: To be developed from data in the NSW Health Survey Program.</p>
Presentation and interpretation	<p>Trend from 1997 to previous calendar year for the chronic disease index.</p> <p>Improvement is indicated by a downward trend. Analysis will be presented by both rural and metropolitan areas. Information will be updated on the dashboard annually.</p>
Data	NSW Health Survey Program (HOIST).
Development	<p>Data on indicators are currently available and development into an index is being undertaken. Reporting by indigenous status requires further validation. The weighting of each of the individual risk factors in the index according to the proportion of total disease burden attributable to each of these factors needs consideration. These latter data are expected to be available from the NSW Burden of Disease Study by December 2003.</p> <p>A component for illicit and other drug use is to be developed.</p>

Dashboard 3. Antenatal visits before 20 weeks

Desired outcome	Higher birth weight babies reducing the risk of ill health in later life.
Rationale	<p>The purpose of antenatal visits is to monitor the health of both the mother and baby; provide advice to promote the health of both the mother and baby and to identify antenatal complications to provide appropriate intervention at the earliest time. NSW Health provides antenatal services to pregnant women through public hospitals, or shared care with general practitioners.</p> <p>A special program to improve antenatal care for Aboriginal and Torres Strait Islander mothers is currently being implemented. The indicator of first antenatal visit before 20 weeks gestation is aimed at early monitoring and intervention to prevent problems developing in both the mother and baby.</p> <p>This indicator is used at the state level, and can be used for inter-area comparisons.</p> <p>Results are published annually in the <i>NSW Mothers and Babies Report</i>. It has also been included in the National Health Performance Committee, National Public Health Partnership and Aboriginal and Torres Strait Islander reporting sets (New Ways of Doing Business), and is included in the biennial report <i>Health of the People of NSW, Report of the Chief Health Officer</i>. NSW Department of Health. This indicator is relevant to implementation of the Families First Initiative – Universal Home Visiting Program.</p>
Definition	<p>Percentage of confinements where first antenatal visit was before 20 weeks gestation, for indigenous and non-indigenous mothers.</p> <p><i>Note: The question collected in the NSW Midwives Data Collection for this indicator is: Antenatal care – the duration of pregnancy at first visit (weeks).</i></p> <p><i>Note: This applies regardless of where the first antenatal visit was made (eg specialist, GP or hospital).</i></p> <p>Numerator: Number of relevant confinements.</p> <p>Denominator: Total number of confinements in the population group.</p>
Presentation and interpretation	<p>Trend from 1994 to previous calendar year for percentage of confinements with antenatal visit before 20 weeks, by indigenous status. Improvement is indicated by an upward trend. Analysis will be presented by rural/metropolitan areas. Information will be updated on the Dashboard annually.</p>
Data	NSW Midwives Data Collection (HOIST).
Development	Recommended policy development and high level indicator for early childhood interventions to supplement this indicator.

Dashboard 4. Child and adult immunisation

Desired outcome	Reduced illness/death from vaccine preventable diseases in children and older people.
Rationale	<p>While not directly carrying out vaccinations, NSW Health plays a major role in both childhood and adult immunisation. This role includes policy development, promotion of immunisation, conduct of surveys, purchasing vaccines, and coordination of vaccine delivery at the local level. Both indicators are included in the National Health Performance Committee Reporting Set.</p> <p>Childhood immunisation – Despite substantial progress in reducing the incidence of vaccine-preventable diseases in NSW, increases in immunisation levels in children are needed to further reduce and finally eliminate these causes of illness and death. Safe and effective vaccines are now freely available. The childhood immunisation rate is a key strategic indicator for the NSW health system. It is used by the National Public Health Partnership; it is tied to Commonwealth funding via the Public Health Outcomes Funding Agreements and it is reported to NSW Treasury for the Report on Government Services. It has been identified as a key indicator for the next 15 years for Cabinet Office (Office of Children and Young People) for the evaluation of the Families First Program. It is included in the biennial report <i>Health of the People of NSW, Report of the Chief Health Officer</i>, NSW Department of Health. The indicator is used for inter-area comparisons.</p> <p>According to the national childhood immunisation schedule, by the age of 12 to <15 months, all infants are fully age-appropriately (by dose) immunised against the following: diphtheria, tetanus, pertussis (DTP, 3 doses); haemophilus influenzae type b (3 doses); hepatitis B (3 doses) and polio (3 doses).</p> <p>Adult immunisation – Vaccination against influenza and pneumococcal disease is recommended for people aged over 65 years, Aboriginal people aged over 50 years and those with chronic respiratory conditions.</p> <p>The adult immunisation program makes important contributions to Aboriginal Health and the NSW Health Winter Strategy.</p>
Definition	<p>Proportion of infants fully immunised at 12 to 15 months.</p> <p>Numerator: Number of infants fully immunised</p> <p>Denominator: Total number of infants in the population.</p> <p>Proportion of people aged 65 years and over immunised against influenza and pneumococcal disease.</p> <p>Numerator: Number of respondents (weighted) to NSW Health Survey aged 65 years reporting that they have been immunised.</p> <p>Denominator: Total number of respondents in the 65 year age group.</p>
Presentation and interpretation	<p>Trend from 1997 to previous calendar year for the percentage immunised. Improvement is indicated by an upward trend. Analysis will be presented by rural/metropolitan area and indigenous status (latter for childhood immunisation only). Information will be updated on the dashboard annually.</p>
Data	Australian Childhood Immunisation Register. NSW Health Survey Program. (HOIST).
Development	Reporting of adult influenza and pneumococcal vaccination rates by indigenous status requires a further validation study. Meningococcal vaccine to be included in childhood component in 12 months.

Dashboard 5. Falls in older people

Desired outcome	Reduced illness and death from fall related injuries in older people.
Rationale	<p>In the 10 years to the year 2000, falls were the leading cause of NSW hospitalisation due to injury (about 30% of all injury hospitalisation). More than half of those hospitalised following a fall (53%) were aged 65 years or more. The hospitalisation rate for fall-related injuries among females aged 65 years or more was almost one-and-a-half times that for males of the same age.</p> <p>Fall-related injury costs the NSW health system more than any single cause of injury, including road trauma. Admissions to hospital for fall-related injury are currently estimated to cost \$324.2 million each year. By the year 2050, the expected ageing of the population could see this reach \$644.7 million. This cost is similar to the cost of four 200-bed hospitals and 1,200 new nursing home places (<i>NSW Chief Health Officer's Report 2002</i>, p231).</p> <p>An indicator of hospitalisations for fall-related injuries provides an estimate of the incidence of serious falls in older people in NSW and changes in this indicator will show the effectiveness of interventions aimed at reducing falls in the community. The NSW Department of Health is currently developing policy for a long-term coordinated approach to falls prevention for older people. A Rural Falls Injury Prevention Program and a metropolitan-based falls prevention program 'Make a Move', have already been established in NSW. These programs have a primary focus on increasing the access of older people to fall-safe activities designed to improve muscle strength, flexibility, balance, and fitness.</p> <p>This indicator is used at the state and national level. This indicator is included in the biennial report <i>Health of the People of NSW, Report of the Chief Health Officer</i>, NSW Department of Health. It can be used for inter-area comparisons.</p>
Definition	<p>Age-standardised hospitalisation rates for fall injuries in people aged 65 years and over in NSW by sex.</p> <p>Numerator: Hospital separations for injury from a fall, excluding day-only stays, hospital transfers and statistical discharges.</p> <p>Denominator: NSW Estimated Residential Populations and Australian Standard Population.</p>
Presentation and interpretation	Ten-year trend lines for hospitalisations for falls in persons aged 65 years and over by sex. Improvement is indicated by a downward trend. Analysis will be presented by rural/metropolitan area and indigenous status. Information will be updated on the dashboard annually.
Data	NSW Inpatients Statistics Collection (HOIST). ABS population data (HOIST).
Development	No further development required.

Dashboard 6. Self reported mental health

Desired outcome	Improved mental health and well-being of the community.
Rationale	<p>The mental health status of the population is measured through a set of standardised questions in the NSW Health Survey.</p> <p>Although the questions reflect broad social and economic factors, they also indicate the effectiveness of mental health prevention, promotion and care programs. Potential demand for mental health services is indicated.</p> <p>People scoring 'High' or 'Very High' on the Adult Psychological Distress K10 scale are of concern as they may require mental health service intervention. The scale is internationally recognised and was used in the Australian National Health Survey 2000.</p> <p>For children, the Strength and Difficulties Questionnaire (SDQ) indicates the proportion 'Substantially at Risk of Clinically Significant Problems', from survey interviews of parents.</p> <p>The SDQ is also recognised internationally and was used in, for example, the 1999 UK national survey. It is also being used in the Longitudinal Survey of Australian Children 2003-2009, coordinated by the Australian Institute of Family Studies. As a result of work on the NSW dashboard, this indicator is now included in the National Health Performance Committee reporting set.</p> <p>Because clinical staff also use the instruments used in the NSW Health Survey (K10 and SDQ), for assessment of mental health clients, the profile of service clientele can be related to that of the general population.</p>
Definition	<ul style="list-style-type: none"> ● % of adult (16 years +) respondents in the NSW Health Survey scoring 'High' or 'Very High' on the K10 Adult Psychological Distress scale. ● % of children (5-15) identified as being 'Substantially at Risk of Clinically Significant Problems' (5-15) on the Strengths and Difficulties Questionnaire.
Presentation and interpretation	<p>Time trend lines. Improvement is indicated by downward trends.</p> <p>Information would be updated on the dashboard quarterly for statewide data, with a breakdown by rural/metropolitan area. Published or other external reports will require copyright acknowledgment.</p>
Data	NSW Health Survey Program.
Development	<ul style="list-style-type: none"> ● An expert group will examine how to overcome problems of small sample size in surveying self-reported mental health in the indigenous population by December 2003. ● Trend data is not currently available for SDQ as surveying commenced in 2003. ● No further development is required for the Adult K10 measure.

Goal Two. Fairer access

Probably one of the more contentious areas under discussion, the Fairer Access Goal provided an opportunity to review traditional ways of looking at performance in this area.

Consultation summary

Dashboard 7 <i>Access to emergency service</i>	<p>Emergency access to inpatient care (access block) was well supported for inclusion in the dashboard but was considered a performance measure of hospital rather than emergency care. It was agreed that access block should be part of <i>Dashboard indicator #9 access to hospital treatment</i> and be coupled with waiting times for booked surgery to truly reflect access to inpatient care.</p> <p>Review of all five categories of triage is undertaken by the Emergency Department Clinical Implementation Group as well as at Area Health Service and Emergency Department levels. Data for all five categories remains on the health dashboard with a recommendation for development of policy on a single nationally accepted dashboard indicator (refer recommendation 15).</p> <p>While current systems provide information across 70% of Emergency Department activity, it was considered a priority that Emergency Department information systems be expanded to busier rural sites in NSW (refer recommendation 17).</p>
Dashboard 8 <i>Access to targeted treatments</i>	<p>Both nationally and internationally it has been agreed that certain treatments can have a significant impact on premature death and disability particularly among target population groups. There was strong support from respondents for inclusion of the rates for coronary revascularisation and major joint replacement on the dashboard. It was agreed that expert groups needed to undertake some additional development work to complete this indicator (refer recommendation 13).</p>
Dashboard 9 <i>Access to hospital treatment</i>	<p>Considered an established and well-recognised indicator of access, there was strong support for inclusion of waiting time data on the dashboard. Many respondents felt it was important to reflect both ends of the spectrum and the recommended indicator now includes both urgent and non-urgent medical and surgical booked patients. As previously mentioned, access block was added to this indicator to ensure all types of access to hospital care were being examined together.</p>
Dashboard 10 <i>Fair distribution of funding</i>	<p>While there were many suggestions on ways to improve the Resource Distribution Formula (RDF), use of this indicator was well supported. The RDF is reviewed on an ongoing basis and these suggestions will be incorporated into future reviews. To demonstrate true equity in allocation within Area Health Services, an annual review to determine trends for disadvantaged groups has been proposed as part of the dashboard (refer recommendation 12).</p>

Dashboard 7. Access to emergency services

Desired outcome	More timely emergency treatment to improve survival, quality of life and satisfaction.
Rationale	<p>Timeliness of treatment is a critical dimension of emergency care. Better patient response and better coordination between ambulance services and Emergency Departments will result in increased proportions of patients receiving treatment within appropriate clinical benchmark times.</p> <p>The ambulance response time measure is a standard benchmark of the Convention of Ambulance Authorities of Australia. The ambulance hospital handover (off-stretcher time) is an indicator developed by the NSW Ambulance Service and supported by the NSW Emergency Department Clinical Implementation Group. The definition is the time elapsed between 'arrive hospital/destination and delayed available' indicating the amount of time to transfer the patient at the destination.</p> <p>Emergency Department triage categories are Australasian College of Emergency Medicine (ACEM) indicators and have been adopted by the National Health Performance Committee, the Review of Government Services and the Australian Council on Health Care Standards (ACHS). A recent analysis for ACHS concluded that improvement in this indicator represented one of the top 10 opportunities to improve the quality of care in Australian hospitals. Emergency Department Information System (EDIS) data is collected from 52 sites where throughput represents over 70% of Emergency Department activity in NSW.</p>
Definition	<p>Cases treated within benchmark times as a % of all cases for:</p> <ul style="list-style-type: none"> ● Ambulance <ul style="list-style-type: none"> – response within 10 minutes to priority one emergencies – hospital handover within 20 minutes (Sydney area). ● EDIS site Emergency Departments <ul style="list-style-type: none"> – triage 1 – triage 2 – triage 3 – triage 4 – triage 5.
Presentation and interpretation	<p>Five-year trend lines. Improvement is indicated by upward trends (taking account of seasonal variations). Information would be updated on the dashboard monthly.</p> <p>A technical working group will determine the feasibility and validity of reporting data by indigenous/non-indigenous status.</p>
Data	<p>Ambulance Service of NSW CAD System Emergency Department Data Collection</p> <p><i>Note: ambulance response data for priority one emergencies will be available from December 2003. Data relating to 'All 000 Calls' is currently available.</i></p>
Development	<p>Ambulance:</p> <ul style="list-style-type: none"> ● Priority one emergencies – upgrade as described above. ● Hospital handover – refine benchmark times and extend measure statewide by December 2003. <p>Emergency Departments:</p> <ul style="list-style-type: none"> ● Expand information systems to busier rural hospitals not currently included. ● Policy development on an agreed single higher order triage indicator.

Dashboard 8. Access to targeted treatments

Desired outcome	Improved quality/length of life for target groups through access to specific treatment.
Rationale	<p>Based on current evidence, selected treatments for appropriate target groups contribute significantly to quality of life. Increased access to these specified services can be measured through treatment rates.</p> <p>Coronary revascularisation (angioplasty including stents, and coronary artery bypass graft (CABG)) improves life expectancy and quality of life for some groups of people with coronary heart disease (Yusuf et al 1994; Davies et al 1997, Hill et al 2003). Coronary heart disease is the most significant contributor to burden of disease across the community. Coronary heart disease is also an important factor explaining the gap between the health of indigenous people and the rest of the community.</p> <p>Major joint replacements – Increasing the rate of major joint replacements, particularly in the elderly, results in greater individual mobility, reduced pain and quality of life (Faulkner 1998; Callahan et al 1994).</p> <p>Measures for these treatments are included as National Health Performance Committee reporting set.</p> <p>Radiotherapy – For many years NSW Health has used a utilisation rate target of 50% for cancer patients who would benefit from radiotherapy for curative or palliative purposes. This target is supported by international and national evidence (World Cancer Report; WHO 2003; A Vision for Radiotherapy Baume Inquiry Report, Aust, 2002). The appropriateness of the 50% target will be kept under evidence-based review. Planning and delivery of services has been based on achieving utilisation rates closer to this target. It is considered that better outcomes will result from higher rates of treatment than at present. In 1999, AHSs achieved an average utilisation rate of approximately 40%.</p>
Definition	<p>Utilisation rates for:</p> <ul style="list-style-type: none"> ● coronary revascularisation (angioplasty including stents, and CABG) ● major joint replacements ● radiotherapy (target of 50% of cancer patients receiving radiotherapy in conjunction with surgery and/or chemotherapy).
Presentation and interpretation	<p>Five-year trend lines, with rural/metropolitan breakdown. Improvement is indicated by upward trends (taking account of seasonal variations).</p> <p>Information will be updated on the dashboard monthly for revascularisation and joint replacement and annually for radiotherapy.</p>
Data	<p>Inpatient Statistics Collection (HOIST).</p> <p>Radiotherapy Management Information System.</p>
Development	<p>Agreement on target populations and benchmarks for specified target treatments. Analysis by indigenous/non-indigenous and socio-economic groups is expected in addition to analysis of access by local resident populations.</p>

Dashboard 9. Access to hospital treatment

Desired outcome	Reduced waiting time for booked/emergency procedures and improved quality of life.
Rationale	<p>Better management of waiting lists for urgent and non-urgent medical and surgical patients will result in a lower proportion of patients experiencing an excessive wait for treatment. This is particularly desirable for patients classified in the urgent category, where waiting times can have potentially detrimental effects on clinical outcomes.</p> <p>For non-urgent patients a reduction in waiting times can mean an improvement in any quality of life lost through disease or injury. In some cases this may also lead to better outcomes. Waiting times affect community satisfaction and confidence in the health system.</p> <p>Any reduction in the waiting time for emergency admission to a hospital bed from the Emergency Department (reduced access block) will result in better patient comfort and more effective use of Emergency Department services.</p> <p>The indicators chosen are well established and internationally recognised. They are included in Australian national reports. Access block is an Australian College of Emergency Medicine and Australian Council on Healthcare Standards indicator, although specific benchmarks vary between states.</p>
Definition	<p>% of:</p> <ul style="list-style-type: none"> ● urgent medical and surgical (urgency categories U1 and U2) admitted patients who waited less than 30 days ● booked medical and surgical 'ready for care' list patients waiting less than 12 months ● emergency access to inpatient care (access block). <p><i>Note: Ready for care patients are those who are prepared to accept admission for the awaited procedure should it be offered in the near future and who, in the opinion of the treating clinician, are ready to be admitted to hospital or to begin the process leading directly to admission.</i></p>
Presentation and interpretation	Five-year trend lines. Improvement is indicated by upward trends (taking account of seasonal variations). Information will be updated on the dashboard monthly.
Data	Waiting Times Data Collection. Emergency Department Data Collection.
Development	Reporting by indigenous status to be further developed.

Dashboard 10. Fairer distribution of funding

Desired outcome	More equitable access to distributed health funding.
Rationale	<p>The current policy setting is to ensure that allocations to all Area Health Services are not less than 2% of their Resource Distribution Formula (RDF) target. The RDF currently includes factors to adjust for the additional relative needs of rural and remote communities as well as those communities with a low socio-economic composition.</p> <p>The NSW RDF Committee supports inclusion of this indicator.</p>
Definition	Unweighted average distance of the absolute distance from RDF target for the 17 Area Health Services.
Presentation and interpretation	<p>Chart showing trends of unweighted average distance over time. Trends will also be shown separately for rural and metropolitan Area Health Services. Downward trend indicates improvement. Information will be updated on the dashboard annually.</p>
Data	<p>Department of Health RDF calculations.</p> <p>Department of Health Area financial allocations.</p>
Development	<p>The RDF is refined annually, and this should continue to ensure that it adequately captures relative resource needs.</p> <p>Meeting RDF targets does not necessarily mean that funds are allocated equitably within Area Health Services. As part of the ongoing review of the RDF, there should be development of a component that demonstrates the degree to which Area Health Services allocate dollars equitably.</p> <p>Some evidence of the effectiveness of this internal allocation could be shown through the proposed annual analysis by SEIFA and Vinson (refer recommendation 12).</p>

Goal Three. Quality health care

Considerable work has been commissioned looking into performance measures for quality in health care. In a number of significant areas, certain measures have preceded policy development and were therefore not yet suitable for inclusion in the dashboard. An example is *variation in procedure rates*. While there is an array of data that displays variation by clinician, by hospital and in some cases by state, there is currently no policy framework outlining agreed rates (or acceptable variation in rates) for particular procedures.

Consultation summary

Dashboard 11 <i>Safety</i>	Inclusion of this indicator was well supported. The single component for intensive care is consistent with the suite of measures proposed by the Intensive Care Implementation Group. While there was limited support for using actual adverse events or proportion of root cause analyses conducted, it was agreed that reviewing outcomes of possible adverse events was more useful than documenting numbers of events or process measures.
Dashboard 12 <i>Skilled and valued workforce</i>	A recommendation has been included that a special working group develop a meaningful workforce indicator within the next six months (refer recommendation 14). It was agreed that in the interim, the staff separation rate currently being reported to NSW Premier's Department be included in the dashboard.
Dashboard 13 <i>Potentially avoidable hospitalisation</i>	The inclusion of this indicator was well supported as it was considered a proxy measure for both chronic and complex care and care for the aged.
Dashboard 14 <i>Priority care process – stroke</i>	Maintaining a focus on a priority care process allows a more coordinated view of health system performance from a patient perspective. A number of health prevention and treatment programs impact on the prevalence of stroke in the community and timely intervention can significantly reduce premature death and disability from this condition.
Dashboard 15 <i>Priority care process – cancer</i>	Maintaining a focus on a priority care process allows a more coordinated view of health system performance from a patient perspective. A number of health prevention and treatment programs impact on the prevalence of cancer in the community and timely intervention can significantly reduce premature death and disability from this condition.
Dashboard 16 <i>Patient and consumer experience</i>	There was reasonable support for an indicator that could show effectiveness of service from the perspective of patients/community. While the limitations of patient satisfaction as an indicator are acknowledged, it was agreed that this data should continue to be collected with expansion of the current surveys to include community perception of involvement in decision making.

Dashboard 11. Safety

Desired outcome	Safer health care with a reduction in adverse events.
Rationale	<p>Adverse events occurring in the acute hospital sector can lead to a decreased quality of life and/or premature death. These events are identified, reported and actioned through safety improvement programs. This indicator tracks occasions where patients stay in hospital longer than expected; have an unplanned readmission to hospital or to an intensive care unit or need to return to operating theatre for unplanned surgery.</p> <p>Because the indicator focuses on the consequences of adverse events rather than the actual event, it is not subject to the same reporting biases associated with measures or rates of the incidence of reported adverse events.</p> <p>The indicator components are supported by the following groups:</p> <ul style="list-style-type: none"> ● Australian Council on Health Care Standards (ACHS) with statistical methods having been developed by the Health Services Research Group at the University of Newcastle. (HSRG) ● Australian Council for Safety and Quality in Healthcare ● National Health Performance Committee ● Australian Institute of Health and Welfare. <p>The Intensive Care Unit (ICU) component is consistent with the indicators used by the NSW ICU Clinical Implementation Group.</p>
Definitions	<p>Incidence rate of acute separations where there is either:</p> <ul style="list-style-type: none"> ● a length of stay greater than the outlier trim point ● an unplanned readmission to hospital within 28 days ● an unplanned readmission to ICU within 72 hours of discharge from ICU ● an unplanned return to the operating room. <p>Numerator: Number of acute separations meeting at least one of the above criteria.</p> <p>Denominator: Number of acute separations from acute hospitals relevant to the particular indicator.</p>
Presentation and interpretation	<p>Five-year trend against target. Improvement is indicated by low rates.</p> <p>Information available annually.</p>
Data	NSW Inpatient Statistics Collection (HIE).
Development	<p>This indicator is to be developed into an index of safety. It is anticipated that this could be completed within three months in consultation with relevant clinical and expert groups. The development process should consider whether the measures should be adjusted for case complexity (which takes account of age/sex factors).</p>

Dashboard 12. Skilled and valued workforce

Desired outcome	More services and better quality care.
Rationale	<p>NSW Health employs approximately 100,000 staff who provide the key element of service delivery. Attracting, developing and retaining these important people is essential in continuing to meet the health needs of the population. The diversity of roles, areas of super-specialisation, changing nature of the workforce and challenges associated with professional shortages highlight the unique issues associated with meeting this goal.</p> <p>An expert working group will be established to develop the indicator. Representatives on the working group will include NSW Premier's Department, NSW Department of Health, and Area Health Services. The working party should seek the advice of human resources, information systems, learning and development, risk management, staff and consumer representatives. Industrial associations should also be consulted during the process.</p> <p>Critical issues include the ability of health services to attract and retain staff, maintain skill levels and provide a safe, secure and violence-free working environment. To address such issues, a review of the NSW Department of Health Recruitment and Selection Policy has begun, and the Nursing Workforce Strategies Committee has been established to examine nursing recruitment and retention strategies. A number of other relevant policies are being finalised including the NSW Department of Health <i>Zero Tolerance Response to Violence Policy and Framework Guidelines</i> and the NSW Department of Health training program <i>A Safer Place to Work: Preventing and Managing Violent Behaviour in the Health Workplace</i> is currently being rolled out to Health trainers.</p> <p>The potential to upgrade the current human resources/payroll is under investigation by the State HRIS team. The team is scoping the cost, time and resource investment required to implement such a solution for NSW Department of Health and determine the feasibility of the project. In the meantime, a proposed interim indicator is the staff separation rate. This indicator is reported annually by all public sector agencies as part of the NSW Premier's Department Workforce Profile survey.</p>
Definition	The staff separation rate is defined as the number of permanent staff separating from an agency as a proportion of the average number of people employed by the agency over the time period (12 months).
Presentation and interpretation	The indicator is a rate where 0% means that no permanent staff have separated from the agency during the quarter. Comparisons are available for rural and metropolitan areas.
Data	<p>Data in relation to the interim indicator is available from the Health Information Exchange. Other potential workforce data sources of information include:</p> <ul style="list-style-type: none"> ● Department of Health Reporting System ● Workforce/Human Resource Information System ● Registrar (learning and development) ● Nurses Registration Board ● RISKMATE ● WorkCover NSW (OHS/workers compensation) ● GIO – Treasury Managed Fund (OHS/workers compensation)
Development	The Working Group, as identified above, will develop the final dashboard indicator.

Dashboard 13. Potentially avoidable hospitalisation

Desired outcome	Greater independence and health for people who can be kept well at home.
Rationale	<p>Potentially avoidable hospitalisations are those attributed to conditions that can be prevented through early disease management usually delivered in an ambulatory setting. The measurement of such hospitalisations assesses the overall effectiveness of the public health system to strengthen primary and community care services, including implementing programs for people with chronic and complex conditions and strategies to work with private practitioners.</p> <p>Potentially avoidable hospitalisations will be reported for the following groups:</p> <ul style="list-style-type: none"> ● vaccine preventable conditions (including measles, pertussis and influenza) ● acute conditions (including dental conditions, ear, nose and throat (ENT) and kidney infections) ● chronic conditions (including angina, diabetes complications and chronic obstructive airways disease). <p>The indicator is supported by the National Health Performance Committee and the Australian Hospital Advisory Committee. The Victorian Department of Human Services has done extensive work on the development of the indicator in Australia. The indicator was also reported in the last <i>NSW Chief Health Officer's Report</i>.</p> <p>It is also a key indicator of the NSW Department of Health's Chronic and Complex Care Clinical Implementation Group.</p>
Definition	<p>Age-adjusted rates (and associated bed days) of potentially avoidable hospital admissions by rural/urban.</p> <p>Numerator: The number of hospital admissions (weighted) identified as potentially avoidable. These are based on selected International Classification of Diseases (ICD) codes used by the Victorian Department of Human Services and adapted by the Centre for Epidemiology and Research, NSW Department of Health.</p> <p>Denominator: The total population by five-year age and sex groups.</p>
Presentation and interpretation	Ten-year trend lines for avoidable hospitalisations for the three categories of conditions. Improvement is indicated by downward trends. Analysis will be presented by rural/metropolitan. Information would be updated on the dashboard annually.
Data	NSW Inpatient Statistics Collection (HOIST).
Development	Public Health Division has established a reference group to progress the work on this measure. Better identification of indigenous inpatient data is required.

Dashboard 14. Priority care process – stroke

Desired outcome	Improved care and health outcomes for people suffering stroke.
Rationale	Maintaining a focus on a priority care process allows a more coordinated view of health system performance from a patient perspective. A number of health prevention and treatment programs impact on the prevalence of stroke in the community and timely intervention can significantly reduce premature death and disability from this condition.
Definition	<p>Analysis across dashboard where relevant, ie associated with stroke:</p> <ul style="list-style-type: none"> ● age adjusted rates of primary, secondary and tertiary avoidable mortality ● % of population with chronic disease risk factors ● people treated within triage benchmark times ● utilisation rate for coronary revascularisation ● % people admitted within 30 days for urgent medical and surgical procedures ● % people transferred to a ward bed within 8 hours of emergency admission ● length of stay > the outlier ● unplanned readmission to hospital within 28 days ● unplanned readmission to ICU within 72 hrs following discharge from ICU ● unplanned return to operating theatre ● staff service availability for stroke management ● age adjusted rates of potentially avoidable hospital admissions for stroke patients ● patient satisfaction ● health service output measure for people suffering stroke.
Presentation and interpretation	Biannual analysis presented for each indicator against state averages.
Data	As for each indicator.
Development	Indicator clinical reference group to advise on appropriate indicators for analysis.

Dashboard 15. Priority care process – cancer

Desired outcome	Improved care and health outcomes for people suffering cancer.
Rationale	Maintaining a focus on a priority care process allows a more coordinated view of health system performance from a patient perspective. A number of health prevention and treatment programs impact on the prevalence of cancer in the community and timely intervention can significantly reduce premature death and disability from this condition.
Definition	<p>Analysis across dashboard where relevant, ie associated with a prevalent cancer:</p> <ul style="list-style-type: none"> ● age adjusted rates of primary, secondary and tertiary avoidable mortality ● % of population with chronic disease risk factors ● people treated within triage benchmark times ● utilisation rate for course of radiotherapy involving surgery or chemotherapy ● % people admitted within 30 days for urgent medical and surgical procedures ● % people transferred to a ward bed within 8 hours of emergency admission ● length of stay > the outlier ● unplanned readmission to hospital within 28 days ● unplanned readmission to ICU within 72 hrs following discharge from ICU ● unplanned return to operating theatre ● staff service availability for cancer management ● age adjusted rates of potentially avoidable hospital admissions for cancer patients ● patient satisfaction ● health service output measure for people suffering cancer.
Presentation and interpretation	Biannual analysis presented for each indicator against state averages.
Data	As for each indicator.
Development	Indicator clinical reference group to advise on appropriate indicators for analysis.

Dashboard 16. Patient and consumer experience

Desired outcome	Greater satisfaction with services and stronger sense of involvement.
Rationale	<p>An understanding of consumer experience of health services is necessary in delivering a customer focussed service. Consumer Satisfaction Survey data highlights services for which consumers are most satisfied. The use of complaints data as an indicator was not widely supported. Data has been reported in the 1997 and 1998 NSW Health Survey Report and in the 2002 NSW Health Survey Report. It is being collected on an ongoing basis as part of the NSW Health Survey Program. It has also been reported in the annual Commonwealth Government Report on Government Services.</p> <p>A limitation of using broad measurements of patient satisfaction is that it is difficult to link these measures to actions to improve the level of satisfaction. There is support for further development of the NSW Health Survey to capture data on satisfaction of consumers with involvement in decision-making at individual, community and state levels. Establishing and measuring working partnerships would ensure consumers and clinicians are more aware of each other's perspectives on changes in service delivery, resolving issues, sharing problems and finding lateral solutions, and about developing good communication and respect. This would result in services and interventions being more acceptable to consumers.</p>
Definition	<p>% of the population rating their healthcare as 'excellent', 'very good' or 'good' for:</p> <ul style="list-style-type: none"> ● hospital inpatient (1997, 1998 and 2002 data available) ● Emergency Department (1997, 1998 and 2002 data available) ● community health center (2002 data only) ● early childhood center (2002 data only) ● public dental clinic (2002 data only). <p>Numerator: Number of respondents (weighted) to NSW Health Survey rating their healthcare as 'excellent', 'very good' or 'good'.</p> <p>Denominator: Total number of respondents (weighted) in each healthcare category.</p> <p>This will be supplemented with a revised questionnaire covering general experience (other than as a patient).</p>
Presentation and interpretation	<p>Time trend bar charts would be used where data is available – upward trend would reflect improvement. NSW state total, and rural/metropolitan comparisons would be presented. Comparisons by indigenous status are not currently published or routinely reported due to small sample size.</p> <p>Information would be updated on the dashboard each six months.</p>
Data	NSW Health Survey Program (HOIST).
Development	The indicator has the potential to identify benchmarks providing the opportunities for inter-area comparison. The development of indicators on involvement in decision-making would need dedicated resources and the involvement of consumers including the Health Participation Council.

Goal Four. Better value

Financial management has traditionally been the focus of performance reporting for health care and is an area where significant data collection already occurs. In undertaking this exercise it has become apparent that development work is still needed to ensure that a balanced approach is taken to the Better Value goal.

The indicator *Effective Use of Fresh Blood Products* was originally proposed for inclusion but did not receive support through the consultation phase. It was generally agreed that while it was a valuable measure for local review it should not be included on the dashboard.

Consultation summary

Dashboard 17 <i>Staying on budget</i>	The Net Cost of Service – General Fund (general) is a well-accepted measure of financial performance and was strongly supported for inclusion in the dashboard. While there was only limited support for inclusion of business units in this data, it was agreed that end of year budget variance reported in Annual Reports would be more meaningful to report publicly.
Dashboard 18 <i>Maximising services</i>	While supported for inclusion in the dashboard, it was acknowledged that this weighted output measure would not address community-based care. As the Community Health Information Management Exchange or other data sources become available it is expected that these would be included in the measure.
Dashboard 19 <i>Effective resources use</i>	This indicator was strongly supported for inclusion in the dashboard with clinicians interested in being involved in development of a meaningful index of where services reach benchmark levels of performance.
Dashboard 20 <i>Asset utilisation</i>	There was support for identifying a single indicator of performance in terms of health assets. Greater support was evident for a measure of asset utilisation than for asset maintenance.

Dashboard 17. Staying on budget

Desired outcome	Sound financial performance.
Rationale	<p>This is the key measure of financial performance reflecting whether the NSW health system is using money wisely.</p> <p>Compliance with budget in the NSW health system is measured, indicating how well health services are managed within the budget set by Government.</p> <p>The measure is tracked as variance against projected budget outcome, and closely reflects the results of actions over time.</p> <p>There are currently three such measures used at the state level through the Monthly Finance and Performance Report:</p> <ul style="list-style-type: none"> ● net cost of service (NCOS) General Fund (General) ● NCOS Treasury ● NCOS General Fund. <p>However, NCOS General Fund (General) is considered the most suitable measure as an overall dashboard indicator.</p> <p>This is a well-established indicator recognised throughout the NSW health system – it is well understood and accepted by the people who need to act on it.</p>
Definition	<p>NCOS – Projected/actual variance against budget:</p> <ul style="list-style-type: none"> ● NCOS General Fund (General)
Presentation and interpretation	<p>Five-year trend line. Improvement is indicated by reduced variation.</p> <p>Dashboard information will be updated monthly.</p>
Data	Department of Health Reporting System.
Development	No further development is planned at this stage.

Dashboard 18. Maximising service output

Desired outcome	Maximising activity in the health system.
Rationale	<p>A key role of the NSW Health system is to provide health services. The system also needs to be accountable for the use of funds provided by government. This indicator will show how much work is being done by the NSW health system, measured through the quantity of outputs.</p> <p>Systems are currently available to adjust for the relative cost and complexity of the various outputs for acute inpatient, Emergency Department, outpatient and selected rehabilitation and extended care services.</p> <p>This measure can be shown as a whole for each Area Health Service (by converting the outputs of inpatient and outpatient and acute, sub-acute and non-acute services to the same base), and also separately for each output type. The latter will identify the performance in inpatient versus outpatient services and acute versus sub-acute and non-acute services.</p> <p>It is also possible for each facility to be compared to the average performance for its peer group. This will account for the potential obstacles faced by some hospital groups in producing outputs (eg the differences between metropolitan and rural facilities).</p> <p>Therefore, while the dashboard indicator tracks overall system output, it is also possible at other levels of management to measure resource shifts between component sectors, eg from emergency and acute inpatient to non-inpatient to outpatient and selected rehabilitation and extended care services, and to benchmark individual services.</p> <p>This measure does not identify the provision of desirable versus undesirable services – there are other indicators for this purpose, such as effective resource use. Although the complexity adjustments for non-admitted services generally, and for admitted sub- and non-acute services are not as robust as those for acute inpatients, there are strategies in place to improve the quality of these data in the near future.</p>
Definition	Health service output measure, weighted for various outputs (see above).
Presentation and interpretation	Trend line of output system-wide separated for rural and metropolitan Areas. Information will be updated on the dashboard quarterly.
Data	<ul style="list-style-type: none"> ● NSW Inpatient Statistics Collection (HIE). ● Emergency Department Data Collection (HIE). ● DOHRS for hospital outpatient services. ● Other sources as appropriate.
Development	Finalisation of the weighted service output index is planned for late 2003. Further long-term development is dependent on improvements in the information available on outpatient and community services.

Dashboard 19. Effective resource use

Desired outcome	Better use of the health dollar.
Rationale	<p>There is a variation in length of stay between hospitals for patients with similar conditions receiving similar treatment. This indicator provides a relative measure of the extent to which bed days within acute public hospitals reflect:</p> <ul style="list-style-type: none"> ● Admissions for elective surgery that do not occur on the day surgery is performed. ● Overnight admissions for procedures that can be performed on a same-day basis. ● A patient waiting in a hospital bed for a diagnostic procedure that is not immediately available. ● Inappropriately long lengths of stay related to other factors, such as patients waiting for beds in nursing homes. <p>The index is not an absolute measure. There will always be a level of use of hospital bed days that are due to patients waiting for elective surgery after admission, patients staying overnight for same day procedures, etc. The index will be used to identify services that achieve a benchmark level of performance.</p> <p>Diagnosis Related Group (DRG) level analyses will be used where possible, eliminating the need for adjustments for age or co-morbidity, as these are already accounted for in the classifications.</p>
Definition	Effective Resource Use Index – comparison against agreed benchmarks, which are age-standardised where possible and based on rates already achieved by at least 20% of service providers. Benchmarks should be recalculated every two years.
Presentation and interpretation	<p>Performance against benchmark and trends over time with breakdown by rural/metropolitan area.</p> <p>Movement towards benchmark indicates improvement.</p> <p>Information will be updated on the dashboard quarterly.</p>
Data	NSW Inpatient Statistics Collection (HIE).
Development	The quality of data on patients waiting for diagnostic procedures needs to be assessed by an expert group, and could be undertaken by December 2003.

Dashboard 20. Asset utilisation

Desired outcome	Better care of health assets.
Rationale	<p>This indicator is a measure of asset usage through relating an output measure of service and depreciated asset value. It is expressed as Asset Depreciated Value/ Weighted Output Measure of Service. It gives an indication of the level at which the asset portfolio is supporting the delivery of health services in terms of asset utilisation at an Area and facility level.</p> <p>For a performance measure to appropriately reflect the effectiveness of asset management in terms of service delivery it is appropriate for it to contain a measure of service. The 'Weighted Output Measure of Service' is seen as an appropriate service measure. The measure takes a holistic view of the delivery of health services and includes both inpatient and non-inpatient activities. Asset Depreciated Value gives an indication of general asset condition.</p> <p>This indicator has been selected as one in a suite of approximately 15 indicators for reporting in the Health System's Portfolio Management Information System (staged implementation from August 2003). Underlying the implementation of the system is that it will provide feedback to stakeholders and will subsequently drive improved asset management and maintenance practice.</p> <p>It is intended that this asset utilisation performance measure will show, over time, improvement in asset performance. The performance measure will be used to demonstrate how the Health asset base is supporting the delivery of services.</p>
Definition	<p>Asset utilisation ratio.</p> <p>Numerator: Asset depreciated value (\$).</p> <p>Denominator: Weighted output measure of service (under development – see below).</p>
Presentation and interpretation	<p>Statewide information will be presented in bar graph form (\$/output measure). Analysis would be by rural/metropolitan areas. Data will be available monthly however annual comparison is recommended as a more meaningful comparison.</p> <p>A lower ratio will indicate a higher utilisation of assets by a particular Area in the delivery of services.</p>
Data	<ul style="list-style-type: none"> ● Asset Depreciated Value available from Capital Charge Modelling Database (Maintained by Asset and Procurement Management Directorate). ● Weighted Output Measure of Service will be available from the Health Information Exchange.
Development	No further development required other than the finalisation of the Weighted Output Measure (expected in late 2003).

Development of performance agreements

6

A key part of any performance management system is making it happen. Once strategic objectives and desired outcomes are agreed, there is a need to clearly articulate who is doing what and by when.

Where initiatives cover the whole of government, managers, clinicians and consumers agree on the need for a greater degree of accountability and transparency between government agencies. Chief executive officers of health services have also indicated that where a number of agencies are involved in delivering on desired outcomes, each agency's contribution needs to be made explicit through an agreement process.

A whole of government approach

The NSW Human Services CEO Forum has led the way in harnessing the collective expertise of multiple government agencies and concentrating effort on achieving a number of shared outcomes. This forum comprises:

- chief executive officers from NSW Premier's Department
- the Cabinet Office
- NSW Department of Health
- Community Services
- Ageing Disability and Home Care
- Education and Training
- Department of Women
- NSW Department of Housing
- Department of Juvenile Justice
- Department of Aboriginal Affairs
- the Commission for Children and Young People
- the Community Relations Commission
- the Attorney-General's Department (representing the legal cluster).

An example of this collaborative work is the work being done under the new Aboriginal Affairs Policy *Partnerships: A New Way of Doing Business with Aboriginal People*. The Human Services CEO Forum has identified a lead agency to coordinate agreement between agencies and monitor and report on compliance with key indicators that cross between them.

An Interagency Performance Framework has been progressed by the forum and as part of that framework it is recommended that shared outcomes for the whole of government be developed on the following indicators:

Dashboard #1: Potentially avoidable deaths

Dashboard #2: Chronic disease risk index

Dashboard #4: Child and adult immunisation

Dashboard #5: Falls in older people

Dashboard #6: Self reported mental health.

NSW Treasury Agreement

The NSW Treasury develops Service and Resource Allocation Agreements (SRAA) with other public sector agencies to document the deliverable that each agency will provide for any allocated resources. NSW Treasury's SRAA with NSW Department of Health for 2002/03 contained approximately 125 indicators, ranging from broad program expenditure (actual and estimated) to indicators showing application of specific growth funding by Area Health Services. The suggested health dashboard clearly demonstrates the necessary linkages between strategic goals, desired outcomes and local strategies and should now form the SRAA between NSW Treasury and NSW Department of Health.

NSW Health Service Agreements

Formal performance agreements are in place between the NSW Department of Health Director-General and health services, represented by their Boards. These agreements cover 17 Area Health Services, Corrections Health Service, The Children's Hospital at Westmead and the Ambulance Service of NSW.

An integral component of the performance management system, the agreements incorporate performance indicators, targets and outcomes aligned with the four goals of the NSW health system. They are designed to increase transparency in delivery of services; clarify roles and responsibilities; strengthen existing partnerships and maintain accountability within the health system. The current agreements cover a two-year period, are annually updated and are reviewed by the NSW Director-General for Health.

Desired outcomes have not always been obvious in previous versions of these agreements and health services have increasingly found them less relevant to local circumstance and less useful for managerial action. The recommended dashboard is able to be translated at varying levels within the health system and has support from health services to be used as their performance agreement with the Director-General.

Where an indicator is a composite measure, health services will report on both the aggregated and disaggregated components that make up the indicator.

For example, analysis of the Safety Index would show the four nominated components reported as an index and separately, eg:

- safety index
- length of stay greater than expected (> outlier trim point)

- unplanned readmission to hospital within 28 days
- unplanned readmission to intensive care unit (ICU) within 72 hours of discharge from an ICU
- unplanned return to operating room.

Where a health service identifies limited additional indicators that have clearly defined outcomes and are seen to have significant local relevance, these can be included on the local dashboard and intra Area comparison facilitated.

Agreements for the Ambulance Service of NSW, Corrections Health Service and The Children's Hospital at Westmead

There are a number of unique health services where there is a need to modify performance indicators to reflect the direction and scope of the service while ensuring alignment with broader system indicators.

For example, dashboard indicators reflecting health promotion, screening and early intervention are applicable for local strategy development by The Children's Hospital at Westmead and Corrections Health Service. Similarly dashboard indicators relating to patient satisfaction and budget performance also apply to these services as well as to the Ambulance Service of NSW. For areas such as access, dashboard indicators can be modified to be more meaningful for each particular service. For example, Corrections Health Service has suggested that a more locally meaningful indicator may be % of new receptions receiving reception triage within 24 hours.

The NSW Department of Health will work with these services to develop performance agreements that include locally relevant outcomes within each dashboard area.

Agreements with non-government organisations

Non-government organisations (NGOs) play a significant role in provision of health services across the state. In NSW around 450 grants ranging from \$1,000 to \$6,000,000 are provided to 270 non-government organisations annually. Performance agreements govern the allocation of these grants and, similar to those governing public health services, these agreements need to reflect alignment with strategic objectives and desired outcomes.

Chaired by the Director Primary Health and Community Care, the NSW NGO Advisory Committee comprises representatives from the NSW Department of Health, Area Health Services and the following Peak Organisations:

- Aboriginal Health and Medical Research Council
- AIDS Council of NSW
- Council of Social Services of NSW
- Mental Health Coordinating Council
- Network of Alcohol and Drug Agencies
- NSW Association for Adolescent Health
- Women's Health NSW.

This committee is well placed to review and revise the current Funding and Performance Agreement template in light of the dashboard indicators and distribute this to Area Health Services for progressive implementation.

Metropolitan and rural communities

There are well-documented differences between rural and metropolitan communities when assessing effective performance of the health system. To ensure these can be monitored and actions taken to improve services, it is recommended that all indicators be analysed by rural and metropolitan area. As part of the consultation phase, two approaches were suggested.

- 1 **Accessibility/Remote Index of Australia (ARIA)** – This index measures remoteness in terms of access along the road network to four categories of service centres. ARIA defines five categories of remoteness and is available for a variety of geographical units including localities, census collection districts, statistical local areas and postcodes. The biennial report *Health of the People of NSW, Report of the Chief Health Officer*, NSW Department of Health contains analysis on a number of indicators by ARIA classification.
- 2 **Area Health Service boundaries** – The use of the existing Area Health boundaries is consistent with initiatives developed in rural and metropolitan health plans designed to address inequity of rural and remote community access to services.

There was agreement that while ARIA was a more faithful picture of specific communities, the Area Health Service boundaries were more appropriate for routine comparison. The committee supported this approach given that use of Area boundaries will ensure data are available and meaningful for the organisation that needs to act.

Another key issue for certain rural Area Health Services is the effect on performance data of cross border flows. These flows could distort Area data (eg rate of major joint replacement etc) and this should be considered in assessing overall performance.

Indigenous communities

Indigenous people continue to suffer a greater burden of ill health than other Australians. It is well documented that Aboriginal people have a life expectancy at birth 15–20 years less than non-indigenous Australians. Their life expectancy is lower than that for residents of most countries of the world and Aboriginal people are two to three times more likely to be hospitalised.

Many of the dashboard indicators are consistent with those included in National Aboriginal and Torres Strait Islander reporting sets. There was widespread support for analysing all dashboard indicators by indigenous status though there needs to be further development before this approach can be fully implemented.

Health services are currently implementing programs to improve identification of indigenous status and this strategy should help to improve the quality of the data. The potential for a perverse incentive with this approach was noted by some Area Health Services where concern was expressed that poor recorders of indigenous status would show a smaller (but misleading) gap in health outcomes.

Data by indigenous status are currently available for a small number of dashboard indicators. The development work required for other indicators reflects expected small numbers needing validation and difficulties in identification of status. To ensure the system maintains a focus on provision of services and the health of Aboriginal people it is recommended that a workshop be held to address these developmental issues and agree on those dashboard indicators most appropriately analysed by indigenous status (refer recommendation 11).

Equity in health outcomes

While many respondents suggested that movement toward reaching targets under the Resource Distribution Formula may demonstrate equity in funding across Area Health Services, there was no measure demonstrating equity of funding *within* Area Health Services or the effect on equity of those internal allocations. The committee reviewed the potential to analyse indicator results by socio-economic status. After considerable deliberation it was agreed to allow the data to ‘speak for itself’ so that obvious impediments to improvement would not simply be explained away.

On the advice of the Council of Social Services (NSW) it has been recommended that a combination of the Socioeconomic Index for Areas (SEIFA) and Vinson Unequal in Life indicators be analysed across the dashboard. (Details on each of these components are provided at appendix C). The majority of dashboard indicators should be analysed on an annual basis in this way with results acting as a proxy measure of equity for both health system performance and health outcomes at an Area Health Service and State level.

Details on development work required for each indicator has been included in the report (pp 15-38). While most development is currently progressing, four dashboard indicators contain new concepts in terms of target procedures, population groups, aggregation or analysis. Ensuring the best approach to these indicators requires collective agreement among relevant clinicians, consumers and providers. Separate one-off workshops are recommended to address the following areas:

- **Dashboard #8: Access to targeted treatments** – Development of target population and accepted benchmark rates for access to coronary revascularisation, major joint replacements and radiotherapy treatment.
- **Dashboard #11: Safety** – Technical development of the safety index.
- **Dashboard #16: Patient and consumer experience** – Technical development of the consumer experience survey tool based on the patient satisfaction survey.
- **Dashboard #19: Effective resource use** – Technical development of the effective resource use index.

While it is expected that the Health System Performance Branch of the NSW Department of Health will coordinate these workshops it is recommended that each indicator be allocated to a separate Area Health Service to lead the workshop and work with the Department in finalising the indicator.

Workforce

Health is a labour intensive service and the health workforce is critical to sustainability and quality of the service as well as achieving desired outcomes. While workforce could be seen as input rather than outcome, there was strong support for inclusion of this category of indicator on the dashboard from managers, clinicians and consumers. Suggestions included:

- indicators for retention (turnover)
- survival rates
- skilled teams
- staff satisfaction
- leadership
- staff distribution.

These and other innovative ideas are to be further progressed by a special working group to better identify what the desired outcome should be for the health workforce and to influence future data collections and reporting requirements.

Suggested terms of reference for the Workforce Working Group are:

- 1 To review current data collections and external reporting requirements.
- 2 To identify the various categories of workforce that need to be considered.
- 3 To set target areas in terms of attracting, developing and retaining staff.
- 4 To agree on a standard workforce indicator set for external reporting.
- 5 To agree on a workforce indicator to be included in the health dashboard.

The workforce group should include consumers, clinicians, health support staff, learning and development staff, together with representatives from NSW Premier's Department and the NSW Department of Health. Regulatory bodies, professional and industrial associations should also be consulted as part of the development process.

Until this work is completed, the recommended dashboard indicator is *staff separation rate* as this indicator is already collected and reported externally and it provides an indication of general staff turnover.

Many useful suggestions for indicators were put forward during the process of developing this paper. One of the key criterion for inclusion of an indicator is that it is relevant to policy and practice either statewide or health specific (refer appendix B). The following suggested indicators did not have an agreed statewide policy foundation but were supported for further development.

Early childhood intervention

Dashboard #3: Antenatal visits before 20 weeks is strongly supported not only in its own right but as an indicator to show flow-on benefits of early engagement with child health services. The introduction of the universal postnatal home visit and other strategies under the Families First initiative are also important elements to be considered. As policy and desired outcomes are developed in this area, consideration should be given to an early childhood intervention indicator to supplement Dashboard #3.

Performance of operating suites

It has been suggested that there is great advantage in a minimum data set for operating suites. **Dashboard indicator #11: Safety** includes unplanned return to operating theatre under the quality health care goal. Performance of operating theatres has a significant impact on access to target treatments and waiting times for booked surgical procedures. An agreed state policy and high-level indicators with associated desired outcomes for performance of operating suites is supported.

Variation in clinical procedure rates

There is some system support for an indicator showing variations in clinical procedure rates. A suggestion was also submitted that certain clinical pathways should be mandated and an indicator on compliance included in the dashboard. State policy has not been agreed in either of these areas, ie there is no agreement on what are acceptable rather than average rates/length of stay, etc for certain procedures and clinical pathways have not been mandated for use across the state. It is recommended that this area be a priority for further policy development.

Appropriate use of community health services by specific target groups

There is considerable support for a high level indicator in the area of community based health services. **Dashboard #13: Potentially avoidable hospitalisation** and a number of other indicators provide proxy measures for outcomes of well functioning community based care. It was agreed that policy and subsequent development of a dashboard indicator was a priority for this area.

Clinical and corporate governance

It could be argued that success in each of the dashboard indicators would show effective clinical and corporate governance. There was very little support for inclusion of a process indicator (eg % services accredited) and no additional suggestions were made during the consultation phase. It was agreed that policy and development of high level indicators for these critical focus areas was a priority.

Promoting public accountability 10

Relevant, comprehensive and transparent information on performance is vital to enable clinicians and managers to drive up standards and it is equally important for patients and the public to have access to the same robust information.

Performance measurement and reporting are intrinsic to the whole process of public management including planning, monitoring, evaluation and public accountability.

Performance results included in agency annual reports provide an important record of an agency's progress toward meeting objectives and their publication makes it possible to exert pressure for improvement (National Audit Office: UK: 2000).

Research on effective reporting about health services to consumers has already been undertaken by national organisations such as the Health Insurance Commission and the National Consumer Focus Collaboration. Recent international research has also identified the positive impact that public reporting can have on performance.

Thompson et al (2003) examined women's quality of care indicators for 490 employer health plans in the United States. Plan specific, regional and national performance was analysed for eight Health Plan Employer Data and Information Set (HEDIS) indicators. The indicators included mammography screening; prenatal care in the first 20 weeks; access to preventive or ambulatory services and caesarian section rates.

Results for women's quality of care showed:

- a high association between public release of employer health plan information and actual performance of the plan
- those plans that restricted public access to quality of care information had poorer performance than those that did not

- the current voluntary nature of reporting and the ability of health plans to restrict public access allowed poorer performing health plans to escape public scrutiny

....public reporting was the single largest determinant of variation in performance on quality of care indicators when compared to other health plan characteristics

(Thompson et al, 2003).

In addition to empirical research, there is growing community expectation for better public accountability in health. Increasingly key performance indicator data are being developed for public scrutiny on websites and in annual reports. Examples include the UK National Health Service star rating system located on the NHS website, Western Australian Annual Reports that incorporate an Audit Office report on performance and Queensland Health's recently released study on hospital performance.

While there will be differing lower level indicator requirements for performance that are pertinent for consumers, clinicians and providers, desired outcomes need to be consistent if collective effort is to succeed. Creation of a separate dashboard for public accountability is therefore not supported.

It is recommended that specific resources be allocated for a working group of consumers, clinicians, and providers to progress the dashboard as a public accountability mechanism. This group should examine ways to make the dashboard meaningful to diverse communities through a variety of electronic and other media. Where the group considers a dashboard indicator is suitable for immediate publication, this information should be included in Annual Reports and on relevant websites with remaining indicators published no later than July 2004.

Sharing information to improve performance



Various authors have demonstrated the positive impact of publishing and benchmarking performance information (Thompson et al 2003, FACT 1999, Audit Commission 2000). There are a number of comparable indicators at an international level for OECD countries with regular publishing by the Australian Institute of Health and Welfare, the World Health Organisation and other groups such as The Commonwealth Fund of New York.

At the Commonwealth/State level there is joint responsibility to report and share information and contribute to the development of national performance indicators. NSW currently reports on selected high-level performance indicators as part of the Australian Health Care Agreement, (AHCA) which provides funding annually for hospital services.

Better sharing of information between general practitioners (funded by the Commonwealth) and hospital and community health services (funded by the State) could result in more meaningful analysis of local information with better local cooperative action. Groups such as the NSW General Practice Advisory Committee should be consulted to determine the best method of engaging Commonwealth agencies as partners to improve sharing of relevant information.

To ensure consistency of approach, NSW Departmental officers should also be encouraged to raise awareness of the health dashboard with national groups working on performance.

In developing the health dashboard it was noted that limited information was available to compare NSW with international health systems. While there are national comparisons available through the AIHW, and a number of international organisations, these were not seen to be as meaningful for local action.

Accordingly it has been recommended that the NSW Department of Health dedicate resources to enable ongoing review of national and international comparative performance data with information used as part of evaluation of the health dashboard.

The health dashboard is designed to enhance engagement, reflection and action by those who fund, manage, provide or receive care. While a dashboard should be in place for the longer term, it is suggested that it be evaluated for relevance, utility and engagement with informed refinement over time.

As a first step, an advisory committee comprising NSW Treasury and Department of Health officers, Area Health Service managers, clinicians, non-government health providers and consumers should review dashboard implementation by May 2004.

Appendix A.

Indicators sets reviewed



Indicator set	Organisation	Organisation URL	Description
Australia – Indicator sets for national reporting			
NHPC – National Health Performance Committee	National Health Performance Committee	www.health.qld.gov.au	National public reporting on health and health system performance. Three-tiers to framework: <ul style="list-style-type: none"> – Tier 1 Population Health and Outcomes (8 Indicators) – Tier 2 Determinants of Health (12 Indicators) – Tier 3 Health System Performance (19 Indicators) Approx. 40 Indicators.
Review of Government Services Report	Productivity Commission Australia	www.pc.gov.au/gsp/index.html	National public reporting on performance of government programs at state and national level. Health chapters include Acute Hospitals (inc maternity), General Practice and Health Management Issues (Breast Cancer and Mental Health).
NHPA – National Health Priority Indicators	AIHW – Australian Institute of Health and Welfare	www.aihw.gov.au/publications/health/nhpach98/index.html	Irregular public reporting at the national level.
BreastScreen Indicators	AIHW	www.aihw.gov.au	Nationally agreed indicators for the BreastScreen program.
National Cervical Cancer Indicators	AIHW	www.aihw.gov.au	Nationally agreed indicators Cervical Cancer Screening.
Australia – Indicator sets for quality improvement			
ACHS Clinical Indicators	Australian Council on Healthcare Standards	www.achs.org.au	Clinical indicators developed through consultation between the Council and the relevant Medical Colleges.
International – Indicators sets for international reporting			
WHO Health System Performance Indicators	WHO – World Health Organisation	www.who.int/whr/2002/annex/en	National system level performance indicators, first developed in 2000.
OECD Health Data	OECD – Organisation for Economic Co-operation and Development		A large range of indicators is included in the OECD Health Data system. Not all of these are 'performance indicators'.
United States – Public reporting and purchasing			
HEDIS -Health Plan Employer Data and Information Set	NCQA – National Committee for Quality Assurance	www.ncqa.org	A set of indicators used for tracking the quality of services provided through managed care organisations. Indicators have been collected since the mid 1990s, supported by evidence and subject to extensive consultation. The HEDIS set is used extensively in the US. It has been mandated for aspects of the US Medicare and Medicaid programs. There is public reporting on the indicators, but they are also used by employers/purchasers of health insurance. There are 13 main indicators, and a number of other indicators related to consumer experience. Note these are the indicators Kaiser Permanente use for public reporting of the quality of their health care plan.

Indicator set	Organisation	Organisation URL	Description
Healthy People 2020	US Dept of Health and Human Services	www.healthypeople.gov	Publicly reported indicators showing progress against a broad strategy to promote health and prevent illness, disability and premature death. Adopts a similar framework to the Australian NHPC framework but with some other components. Nineteen leading indicators.
United States – Quality improvement			
JCAHO – Core Measures of Performance	JCAHO – Joint Commission on Accreditation of Healthcare Organisations	www.jcaho.org	A set of indicators used for tracking the quality of services provided by hospitals, through the main US accreditation agency. There has been recent agreement on a core set of indicators. There is some limited overlap with HEDIS Indicators. There are 23 main indicators.
AHRQ Preventive Quality Indicators	Agency for Healthcare Research and Quality	www.ahrq.gov	A set of indicators derivable from Inpatient Morbidity Data, that provides an indication of the effectiveness of preventive care services. Supported by an extensive review of evidence and empirical analysis.
AHRQ Preventive Quality Indicators	Agency for Healthcare Research and Quality	www.ahrq.gov	A set of indicators derivable from Inpatient Morbidity Data, that provides an indication of the effectiveness and quality of acute hospital care. Supported by an extensive review of evidence and empirical analysis.
Canada – Public reporting			
Canadian Health System Indicators	CIHI – Canadian Institute for Health Information	www.cihi.ca	A set of indicators agreed by federal and provincial governments for tracking the performance of the Canadian health system.
United Kingdom – Performance management within system and public reporting			
NHS Performance Indicators for Health Authorities and Hospital Trusts	English NHS/UK Department of Health	www.doh.gov.uk/nhsperformanceindicators/2002/	A set of indicators used for tracking performance of NHS Health Authorities, and NHS Hospital Trusts. In place since around 1999, with some revisions.
New Zealand – Public reporting			
NZ Health System Performance Indicators	NZ MOH – New Zealand Ministry of Health	www.moh.govt.nz/phi	A set of indicators used for tracking performance of the NZ Health System.
Primary Care Performance Indicators for New Zealand	NZ MOH – New Zealand Ministry of Health		A set of indicators developed specifically for primary care services in New Zealand. Fifteen indicators.

Appendix B.

Criteria for indicators

B

To test the appropriateness of any suggested indicator, the committee agreed on a set of criterion for inclusion of indicators on the dashboard. This set is based on that used for the National Performance Indicator Framework, with a key criterion that each indicator needed to lead change rather than simply reflect current practice. Clearly indicators were also chosen that would facilitate service improvement at hospital/facility and clinical unit level.

Criteria for individual indicator selection

Indicators selected for program or system monitoring should have all or some of the following characteristics:

1. **Worth measuring** – the indicators represents an important and salient aspect of the public's health or performance of the health system.
2. **Measurable and meaningful for diverse populations** – the indicators are valid and reliable for the general population and diverse populations (ie Indigenous populations, sex, rural/urban, socio-economic etc).
3. **Understood and accepted by people who need to act** – people who need to act on their own behalf or that of others should be able to easily and readily comprehend the indicators and what needs to be done to improve health or the systems performance.

4. **Galvanise action** – the indicators are of such a nature that action can be taken at a state, local or community level by individuals or organised groups.
5. **Relevant to policy and practice either statewide or health specific** – actions can lead to improvements are anticipated and feasible. Actions can alter the course of an indicator when widely applied.
6. **Reflect results of actions over time** – if action is taken, tangible results will be seen indicating improvements in various aspects of the states health.
7. **Feasible to collect and report** – the information required for the indicator can be obtained at reasonable cost in relation to its value and can be collected, analysed and reported on in an appropriate time frame.
8. **Consistent with national directions.**

Criteria for indicator sets

The core set of indicators to monitor the health system are required to reflect the following characteristics:

- cover the spectrum of health issues
- provide a balanced scorecard
- identify and respond to new and emerging issues
- capable of leading change
- provide feedback on where the system is working well, as well as areas for improvement.

Appendix C.

Data source descriptions



Data warehouses

Health Information Exchange (HIE)	A data warehouse operated by the NSW Department of Health holding a number of Health Department collections.
Health Outcomes Information and Statistical Toolkit (HOIST)	A data warehouse operated by the NSW Department of Health. Brings together most of the data collections often used in population health surveillance in NSW and contains all the available historical data for each collection. Provides a common data analysis environment across the public health network in NSW.

Individual data collections

Ambulance Service of NSW Computer Aided Dispatch (CAD) System	A high technology decision support tool that assists call taking and dispatch operations for the provision of emergency and non-emergency services across NSW. CAD data is used for all operational performance and activity reporting and provides timely and comprehensive management information for short, medium and long-term strategic planning.
Australian Bureau of Statistics (ABS) Mortality Collection	From 1999 onwards, causes of death have been classified according to the 10th revision of the International Classification of Diseases (ICD-10, World Health Organisation, 1992). Data is available on HOIST annually at the end of the December quarter for the previous calendar year.
Australian Bureau of Statistics (ABS) Estimated Residential Populations and Standard Australian Population	Population data from most recent Australian Census. Data provided by statistical local areas (SLAs). The populations are projected for each financial year and revised following the census. They are used as denominators for population based indicators and to provide the Area Health Service populations. The 2001 projects are in current use. The Standard Australian Population is revised every 10 years. The current one is as at 30 June 2001.
Australian Childhood Immunisation Register	Register managed by the Health Insurance Commission since 1 January 1996. Provides immunisation status of all children less than seven years of age. A Commonwealth-State cost shared payment is made to service providers for data. ACIR supplies the NSW Department of Health with monthly coverage data that identifies children 'overdue' for immunisation and quarterly coverage data by local government area.
Capital Charge Modelling Database	A set of data on capital assets and their value across the health system.
Department of Health Reporting System (DOHRS)	The primary objective of DOHRS is to collect, edit and analyse a wide range of data for the purpose of planning, resourcing and monitoring the performance of all the Area Health Services and hospitals in NSW. It is essential for compliance with Commonwealth reporting requirements in ambulatory patient service provision. DOHRS is the main, and sometimes only, source for reporting ambulatory services to a number of Commonwealth bodies that provide funding for health services such as the Department of Veterans Affairs and the Department of Health and Aged Care.
Emergency Department Data Collection	Collection of data about patients presenting to Emergency Departments (EDs) in NSW public hospitals and in private hospitals contracted to treat public patients. Not all public hospitals are part of the EDDC, but rather the hospitals with the larger EDs and higher volume of emergency activity. During 1998/99 52 metropolitan and rural hospitals provided monthly data via EDDC on patients treated. Data collected includes demographic information about the patients, triaging details, presentation and treatment times, and other items specific to the ED visit. Collected using the Emergency Department Information System (EDIS).
NSW Health Survey Program	Computer Assisted Telephone Interviewing (CATI) Survey program conducted by the NSW Department of Health in conjunction with 17 Area Health Services on an ongoing basis. In 1997 and 1998 two population surveys were conducted with a focus on six health priority areas. In 1999 an older people's survey was conducted looking at lifestyle, home and social environment and physical functioning. In 2001 a survey was conducted on child health for children aged 0-12.

NSW Inpatient Statistics Collection	Census of all services for admitted patients provided by public hospitals, public psychiatric hospitals, public multi-purpose services, private hospitals and private day procedure centres in NSW. Financial year collection includes patient demographics, source of referral to the service, service referred to on separation, diagnoses, procedures and external causes. Includes data on hospital admissions of NSW residents that occurred in hospitals interstate. From July 1998 the reason for admission has been coded at the time of separation according to the 10th revision of the International Classification of Diseases, Australian Modification (ICD-10-AM)
NSW Midwives Data Collection	Population based collection commenced in 1990 covering all births in NSW public and private hospitals as well as home births. It does not receive notifications of interstate births where the mother is resident in NSW. Covers all livebirths and stillbirths of at least 20 weeks gestation or at least 400 grams birthweight. The collection relies on the attending midwife to complete a notification when a birth occurs and includes demographic, maternal health, pregnancy, labour, delivery and perinatal outcomes.
Radiotherapy Management Information System	Calendar year collection from all radiotherapy centres in NSW. Data includes workforce, equipment, source of referral and primary sites. Treatment of NSW residents by interstate providers is also collected.
Waiting Times Data Collection	<p>The Waiting Times Collection is a unit record data collection of all patients booked on the public hospital waiting list for planned and elective surgery/clinical care.</p> <p>The collection includes all patients whose admission to hospital can be delayed for at least 24 hours from the time of diagnosis, planned obstetric/maternity admission, planned inter-hospital transfers, planned newborn admissions, and regular same-day planned admissions (such as chemotherapy and renal dialysis).</p>
Workforce/Human Resource Information System (HRIS)	Provides integrated data in relation to payroll and conditions of employment.

Sub-group analysis – socioeconomic proxies

SEIFA Index	<p>The most appropriate and commonly used of the SEIFA indices for NSW Health are the Index of Relative Socioeconomic Disadvantage (IRSD) and the Index of Education and Occupation (EDUOCC). The IRSD includes the variables of education, occupation, culturally and linguistically diverse (CALD), Aboriginality and household economic resources. The EDUOCC includes occupational classification, unemployment, early school-leaving and level of educational qualification.</p> <p>Both indices are used for reporting on socioeconomic status by category of Area Health Service in the <i>NSW Chief Health Officer's Report (2002)</i>. The EDUOCC is used in the Need Index of the Resource Distribution Formula (RDF).</p>
Vinson Indicators	<p>A report entitled <i>Unequal in Life Report – The distribution of social disadvantage in Victoria and NSW</i> was prepared in 1999 by the Ignatius Centre, led by Professor Tony Vinson. It utilised a series of indicators to map social disadvantage in both states and to rank postcodes by level of disadvantage. The indicators used were mortality, unemployment, low birthweight, child maltreatment, childhood injuries, education, psychiatric admissions, crime, income, emergency relief.</p> <p>The SEIFA and Vinson indices can be aggregated into quintiles and used to compare differences in an indicator by socioeconomic status. The lowest quintile contains the 20% of Statistical Local Areas (SLA's) with the lowest disadvantage index values and the top quintile contains the 20% of SLAs with the highest disadvantage index values. Expert technical advice would need to be provided on specific methodological issues before implementation.</p>

Appendix D.

Consultation summary



Presentations/meetings/discussions

Adrian, Amanda. Commissioner,
Health Care Complaints Commission

Barraclough, Professor Bruce. Chair,
NSW Institute of Clinical Excellence

Cregan, Dr Patrick. General Surgeon
Wentworth Area Health Service

Fisher, Dr Malcolm. Area Director
Critical Care Services, Northern Sydney Health.
Co Chair ICU IG

Goulston, Professor Kerry. Executive Director,
Greater Metropolitan Transition Taskforce

Hillman, Professor Ken. Director,
Critical Care SWSAHS Co-Chair Models
of Care IG

Hungerford, Dr Phil. Chair
NSW Rural Critical Care Committee

Ieraci, Dr Sue. Area Advisor in Emergency
Medicine SWSAHS. Staff Specialist in ED,
Bankstown Hospital. Co-Chair Emergency
Department IG

Lambert, Dr John. Area Director
Critical Care Services, Mid West AHS

McCarthy, AM Wendy. Chairperson
NSW Health Participation Council

McCaughan, Professor Brian. Clinical Director
Cardiovascular Services CSAHS.
Co Chair Acute Care IG

Moore, Gary. Director,
Council of Social Service of NSW

NSW Health Board Chairs meeting

NSW Health Clinical Council presentation

NSW Health Corporate Governance
Steering Committee presentation

NSW Department of Health Directors meeting

NSW Department of Health IPART meeting

NSW Health External Review and
Evaluation presentation

NSW Health Participation Council
presentation, Dubbo

NSW Health Senior Executive Forum

NSW Health Workshop

NSW Premier's Department meeting

NSW Treasury Department meeting

NSW Treasury Department presentation

Penny, Professor Ron. Director,
Centre for Immunology, St Vincent's Hospital
Co Chair Chronic Care IG

Selvey, Dr Linda. Director, Integrating Strategy
and Performance, Queensland Health

Southern Area Health Service

Stewart, Dr Greg. Chief Health Officer,
NSW Department of Health

Tebatt, Jane. Principal Auditor,
Performance Audit, Audit Office of NSW

The Cabinet Office meeting

Webster, Professor Ian. Chair, Health in the
Community Implementation Group

Written responses/letters

Adams, Dr Tony. NSW Public Health Forum	Hyde, Dr Jim. Health Policy Unit, Royal Australian College of Physicians
Adrian, Amanda. Commissioner HCCC	Macquarie AHS
Anderson, Janet Director Primary and Community Care Branch DoH	McGirr, Dr Joe. CEO Greater Murray AHS
Belsham, Sue. Director Clinical Services NRAHS	Mental Health Branch DoH
Blackwell, Jon. A/CEO Illawarra AHS	Mid Western AHS
Chant, Dr Kerry. Chairperson NSW Public Health Unit Directors Forum	Moore, Gary. Council of Social Services, NSW
Chiarella, Professor Mary. Nursing and Midwifery Office DoH	New England AHS
Clout, Terry. CEO Mid North Coast AHS	Northern Sydney AHS
Corrections Health Service	Rochford, Greg. CEO Ambulance Service of NSW
Crawford, Chris. CEO Northern Rivers AHS	Sinclair, The Hon Ian
Cregan, Dr Patrick. General Surgeon WAHS	South Western Sydney AHS
de Carvello, Dr Vasco. A/CEO Central Coast AHS	Southern AHS
Fanning, Dr Paul. Bloomfield Hospital	Stalley, Dr Paul. Chairman Operating Theatre Management Committee
Far West AHS	Stewart, Dr Greg. Chief Health Officer Director-General Public Health Department DoH
Gellatly, Dr Col. Director-General NSW Premier's Department	Summer, Lynda. Junior VP Health Services Association NSW
Goulston, Professor Kerry. Executive Director, Greater Metropolitan Transition Taskforce	The Children's Hospital at Westmead
Green, Deborah. CEO South Eastern Sydney AHS	Wallace, Mike. Deputy CEO Central Sydney AHS
Hillman, Professor Ken. Director, Critical Care SWSAHS Co-Chair Models of Care IG	Wentworth AHS
Horvath, Dr Diana. CEO Central Sydney AHS	Western Sydney AHS
Hunter AHS	Whitecross, Pete. Director Health Promotion Northern Sydney Health
	Wilson, Gratton. Board Chairperson Southern AHS

Appendix E.

Committee membership



Health System Performance Indicator Committee

Chairperson

Hyland, Deborah
Director, Governance and Community Development, Northern Sydney Health

Secretariat

Richard, Dr Glenn
Principal Performance Analyst, Health System Performance Branch, DoH

Fleischmann, Sandi
(Meeting support)

Members (including alternates)

Bearham, Dr George
Medical Advisor, Clinical Quality Unit, DoH

Best, Elizabeth
Policy Adviser, Consumer and Community Development, DoH

Gallagher, Dr Siun
Director, Service Development and Population Health, Western Sydney AHS

Jorm, Dr Louisa
Director, Centre of Epidemiology and Research Epidemiology, DoH

Kohn, Gerald
Principal Advisor, Resource Allocation Directorate, NSW Treasury

Lagaida, Robert
A/Executive Director, Operations, Wentworth Area Health Service

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Lyndon, Steve
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McMeeking, Louise
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Moore, Helen
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Manager, Performance Management, NSW Ambulance Service

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Robinson, Maureen
Director, Quality and Clinical Policy, DoH

Shiraev, Dr Nick
Director, Information Management and Support Branch, DoH

Smith, Linda
Chief Finance Officer, Director Shared Services and Performance, NSH

Sorrell, Linda
A/Director, Health System Performance Branch, DoH

Southwell, Ian
Chief Executive Officer, South Western Sydney Area Health Service

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Verdich, Paul
Manager, Government Relations, DoH

Ward, Professor Jeanette
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Clinical Reference Group

Brand, Dr Alison
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Chiarella, Professor Mary
Chief Nursing Officer
Director Nursing and Midwifery Office

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GP/Obstetrician. Chair, Division of General
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Daytner, Dr Michael
Geriatrician, Western Sydney Health

Deane, Professor Stephen
Surgeon, South West Sydney Area Health Service

Dwyer, Professor John
Clinical Program Director Medicine and
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Fisher, Dr Malcolm
Area Director Critical Care, Northern Sydney
Health

Harris, Professor Phil
Cardiologist, Central Sydney Area Health Service

Hillman, Professor Ken
Director, Critical Care South West Sydney Area
Health Service
Co Chair Models of Care Clinical
Implementation Group

Ieraci, Dr Sue
South West Sydney Area Advisor in Emergency
Medicine Staff Specialist in ED, Bankstown
Hospital Co Chair Emergency Services Clinical
Implementation Group

McCaughan, Professor Brian
Clinical Director Cardiovascular Services
Central Sydney Area Health Service. Co Chair
Acute Care Implementation Group

Penny, Professor Ron
Director, Centre for Immunology, St Vincent's
Hospital
Co Chair Chronic Care Clinical
Implementation Group

Robinson, Professor Bruce
Director Division of Medicine Royal North
Shore Hospital

Stalley, Dr Paul
Orthopaedic Surgeon, Royal Prince Alfred
Hospital
Chair Operating Theatre Management Committee

Ward, Professor Jeanette
Director, Population Health, Western Sydney
Area Health Service

Appendix F.

Bibliography/useful resources

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