

2 Methods

This chapter describes the key concepts and methods that guided the development of the indicator set. It includes the consultation undertaken, the scope of the indicator set, the definitions of safety and quality, a framework for the indicators, and how the indicators were selected, including three support projects which informed indicator selection.

2.1 Consultation

The methods used to develop the indicator set have been selected in close consultation with the project's National Indicators Advisory Group (NIAG). NIAG was established in February 2008 to provide advice, information, expertise and critical thought, and to act as a sounding board for the project. It was chaired by the Chief Executive of the Commission, with a diverse range of members (Appendix 2). NIAG provided useful practical advice to the AIHW on areas of health care to be covered and on indicator selection.

In addition to ongoing consultation with NIAG, the Commission and informally with a range of stakeholders throughout the project, the AIHW undertook a formal national consultation process from November 2008 until February 2009.

During the consultation period, AIHW and ACSQHC representatives participated in a range of forums and events to raise awareness of the project, gain direct feedback and advice, and advise stakeholders on how to access further information and provide more detailed feedback. Invitation to provide written comment was extended to a wide range of stakeholders, as listed in Appendix 2.

To inform and facilitate consultation throughout the period, a suite of documents were made available on a password protected section of the AIHW website. This included a discussion paper (*Towards national indicators of safety and quality in health care*), reports on the three support projects, and a feedback form.

2.2 Scope

The scope of the proposed safety and quality indicators is the health care system in Australia. It covers the entire spectrum of clinical health care. The starting point for defining the scope in operational terms was to adopt the following definition, endorsed by NIAG:

'Settings in which clinical care is delivered by registered practitioners where the primary purpose of the setting is health care'.

On the advice of stakeholders and NIAG, dental care, ambulance services and residential aged care have also been included in the broad scope, although these are not always regarded as 'health care'.

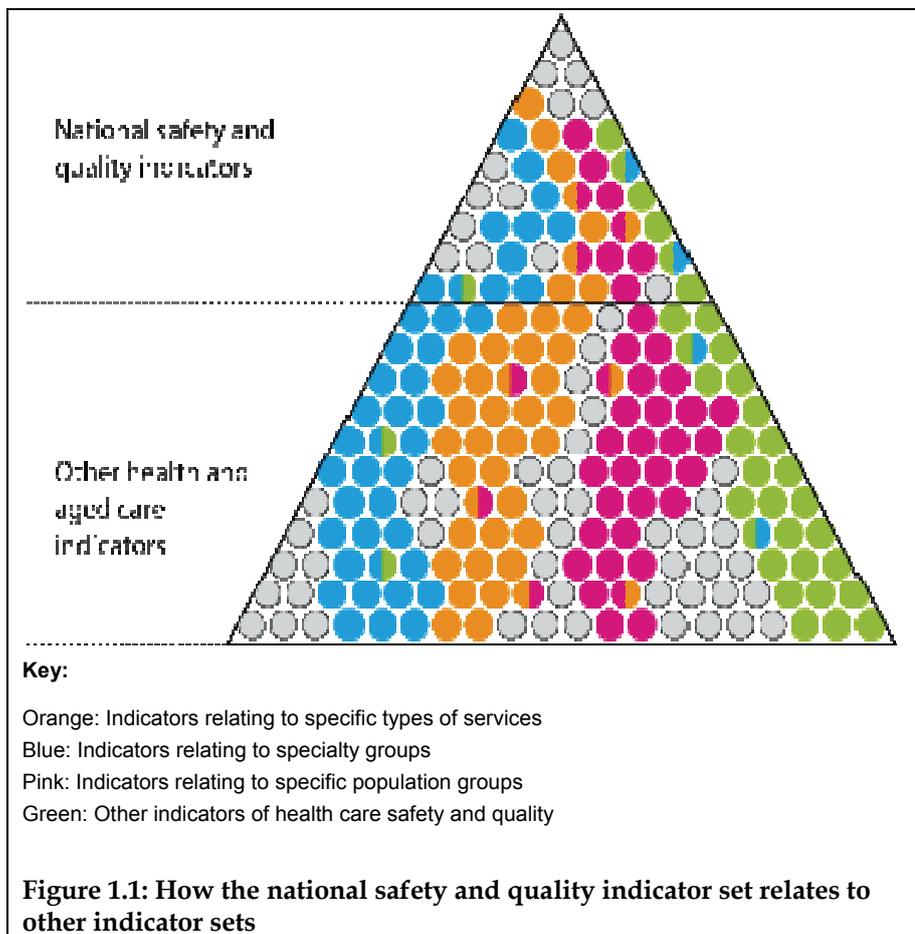
'Clinical care' was clarified as health care provided to patients. Most of public health is out of scope – particularly areas such as health promotion, environmental health, safety promotion activities and occupational health and safety. Therefore, indicators relating to health promotion and preventive activities such as population-wide health education programs (to discourage smoking, for example) have not been included in the recommended set.

However, indicators of some specific preventive activities of clinicians are included, such as cervical cancer screening.

Cascading indicator sets

The set of indicators recommended in this report aims to provide a broad overview of health care safety and quality in Australia. However a single set of indicators such as this must be of a manageable size and it cannot provide a detailed view for all areas of the health system and all aspects of health care. It is for this reason that different indicator sets are needed to provide this more comprehensive view.

The concept of cascading indicator sets is used to describe this relationship between different indicator sets, as explained in the report 'A set of performance indicators across the health and aged care system' (AIHW 2008b). Figure 1.1 provides an illustration of this concept.



Other indicator sets continue to provide different views of the health system such as for:

- Specific types of services, for example, Key Performance Indicators for Public Sector Mental Health Services (see <<http://www.mhnocc.org/Benchmarking/>>)
- Safety and quality of care for specialty groups, for example, Australian Council on Healthcare Standards (ACHS) clinical indicator sets (see <<http://www.achs.org.au/>>), or
- Specific population groups, for example, the Aboriginal and Torres Strait Islander Health Performance Framework (see <<http://www.aihw.gov.au/publications/index.cfm/title/10664>>)

- Overall performance of governments, such as the COAG National Healthcare Agreement Performance Indicators (see <http://www.coag.gov.au/intergov_agreements/federal_financial_relations/index.cfm>).

As well as their concern with safety and quality aspects, these sets typically address other features of health services, such as their efficiency.

2.3 Definitions of safety and quality

Safety

This project uses the definition of safety adopted by the National Health Performance Committee (NHPC 2001: 17):

‘the avoidance or reduction to acceptable levels of actual or potential harm from health care or the environment in which health care is delivered’.

The focus of the definition is on preventing adverse or undesired health outcomes. The definition is used widely by different health organisations with minor variations. For example, it is defined as:

- Freedom from accidental injury (Institute of Medicine 2000: 18)
- The degree to which health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care (Kelley & Hurst 2006: 13)
- Freedom from hazard; that is, a circumstance or agent that can lead to harm, damage or loss (Runciman et al. 2007: 296-97).

Quality

There is no universally accepted definition of quality of health care. A common theme is that quality is about making the system better. Runciman et al. defines it as ‘the extent to which a health care service or product produces a desired outcome/s’ (Runciman et al. 2007: 297).

Quality is a multi-faceted concept which is often described in terms of its constituent dimensions, which can be referred to as domains of quality.

For the purposes of this project, the notion of quality began with the nine dimensions of health system performance in the NHPC’s National Health Performance Framework (NHPC 2001): effective, appropriate, efficient, responsive, accessible, safe, continuous, capable and sustainable.

In consultation with NIAG, it was decided that the indicator set should focus on four quality domains as defined by the NHPC (in addition to the safety domain):

- Appropriateness – ‘care/intervention/action provided is relevant to the client’s needs and based on established standards’
- Effectiveness – ‘care, intervention or action achieves desired outcome’
- Continuity of care – ‘ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time’

- Responsiveness—‘service provides respect for persons and is client orientated, including respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks and choice of provider’.

In considering its notion of quality and how to apply it, NIAG agreed that the emphasis should be on appropriateness and that appropriateness indicators should be based on nationally agreed best practice guidelines wherever possible.

As noted by the NHPC, appropriateness overlaps with effectiveness. Typically, appropriateness is measured by process indicators and effectiveness by outcome indicators. Measures of appropriateness reflect the growing emphasis on evidence-based health care supported by guidelines and decision-support tools. Measures of effectiveness reflect public interest in whether the health care that they receive results in recovery, improved functioning or survival.

Although the domain of efficiency is sometimes regarded as important in considering quality of care, it was not included in this project. The domains of capability and sustainability were also not included explicitly. However, aspects of capability (an individual’s or service’s capacity to provide a health service based on skills and knowledge) and sustainability (a system’s or organisation’s capacity to provide infrastructure such as workforce, facilities and equipment, and to be innovative and respond to emerging needs) are relevant to some process and structure indicators in the proposed set.

Accessibility

The exclusion of accessibility from the dimensions of quality for this project deserves a special note. Accessibility is defined by the NHPC as the ability of people to obtain health care at the right place and right time irrespective of income, cultural background or physical location.

NIAG decided not to include accessibility mainly because of the project’s focus on the safety and quality of clinical health care actually given to patients, as opposed to whether health care services are provided or how readily patients can obtain entry to the health care system. For example, waiting times for services are not included, although the time that patients wait for services could affect the outcome of the services once they are received. It is important to note that a range of access indicators (such as elective surgery waiting times and emergency department waiting times) are reported nationally elsewhere, such as in the AIHW’s annual Australian Hospital Statistics reports.

Although access to care was not a focus, some outcome indicators in the proposed set reflect it as well as appropriateness and/or safety of care. An example is the potentially preventable hospitalisations indicator, which reflects access to and quality of non-hospital health care services. For such indicators it was judged that, although reflecting access issues, they also provide an indication of appropriateness that was important to include.

Equity

Equity has not been listed as a separate dimension of quality. Rather, it is regarded as relevant to all dimensions of safety and quality, as in the National Health Performance Framework. The NHPC (2001:1) notes that ‘equity was integral to the entire framework’. This is also in line with the thinking of the OECD, which defines equity as ‘the extent to which a system deals fairly with all concerned’ (Kelly & Hurst 2006: 13).

Equity is assessed by calculating and comparing values of the indicators for specific population or patient subgroups. The subgroups include patients of different provider types or subgroups, Indigenous and non-Indigenous people, different socio-economic groups, and residents of cities, rural and remote areas. Most of the indicators recommended in this report can be disaggregated by region of residence and by Indigenous status.

The National Hospital Morbidity Database (NHMD) is the source of data for several of the proposed indicators and can support these types of equity analyses. It includes variables that record a patient's address, Indigenous status, age and sex, and the jurisdiction and sector (public or private) of the health facility. However, the range of details such as these is often not available in other data sources.

2.4 Framework for the indicators

NIAG endorsed a framework for the indicator set to be used to help ensure coverage of the health system and of the different dimensions of quality. The framework (Figure 2.1) incorporated the relevant dimensions of quality from the National Health Performance Framework (as outlined above), and takes account of various views of the health care system, such as health care 'settings', health care 'needs' and other views.

The 'health care settings' view broadly includes the most common settings in which care is given, often describing the types of location but also the kinds of people receiving the care and the types of health professionals giving it. It is difficult to define 'settings' with any precision, and in a number of cases the categories overlap.

Six 'service categories' have been included. They have been based on the health service categories used in *Australia's health 2008* (AIHW 2008a), with an additional category of residential aged care. As this project specifically excluded aspects of the health care system focussed on public health, the service category 'public health services' used in *Australia's health 2008* has not been included.

The six service categories are:

- Primary care and community health care services – general practitioners, dental, allied health, community health, ambulance and royal flying doctors, complementary and alternative health, primary health care for Aboriginal and Torres Strait Islander peoples
- Hospitals – admitted patient care, emergency department, and out-patient and other non-admitted patient care
- Specialised health services – specialist medical practitioners, specialised mental health, sexual and reproductive health, alcohol and other drug treatment, hearing, palliative care, health services in the Australian defence force
- Residential aged care
- Multiple service categories – an additional category for the purposes of this project which includes those indicators which span multiple (but not all) categories of health or residential aged care service, and for which there is no clear distinction between the responsibilities or contribution of particular services
- All service categories – an additional category for the purposes of the project which includes those indicators which apply to all categories of health and aged care service. (for convenience of reporting, the 'multiple' and 'all' service categories are

combined in some summary sections of this report, including the depiction of the indicator framework in figure 2.1).

Five of the indicators in the set relate to more than one service category, however there is a distinct role for each service provider so they have not been included in 'multiple service categories'. Instead, they are listed under each service category that applies (for example, 'Malnutrition in care settings' has been listed under both 'Hospitals' and 'Residential aged care').

The 'health care needs' view of the health care system focuses on health consumers and their health care needs. The broad categories used are staying healthy, getting better, living with chronic conditions, and coping with end of life. These categories are based on a framework used by the OECD for its Health Care Quality Indicators (HCQI) project.

Another view of the health care system is policy relevance, as expressed by the seven national health priority areas. These areas have been endorsed by the Australian Health Ministers' Advisory Council (AHMAC) and they are: arthritis and musculoskeletal conditions, asthma, cancer control, cardiovascular health, diabetes mellitus, injury prevention and control, and mental health.

Yet a further framework element is disease and injury groups which cause the major burden on Australians. Burden of disease is measured using a unit of measure called the DALY (disability-adjusted life year). One DALY is one year of 'healthy life' lost due to a disease or injury. YLD (years of life lost to disability) represents the non-fatal component of the DALY and has been used for this project to identify the key burden of disease areas. There are seven disease and injury areas having the greatest level of contribution to the burden of disease and injury. They are cancer, cardiovascular disease, mental disorders, neurological and sense disorders, chronic respiratory diseases, diabetes and musculoskeletal diseases (AIHW2008a: Table 2.17)

While the indicator set is not designed to focus on health expenditure as such, areas of great expenditure are always important to consider. Two ways of assessing coverage have been used in this respect. The first relates to the major areas described in AIHW reports on the expenditure on health goods and services in Australia (AIHW 2008d: Table A.3). Five of the areas used in the reports' framework which have contributed the most to total expenditure are Hospitals, Medical services, Dental services, Community health and other, and Other health practitioners. Expenditure on medications has been excluded here because this only reflects the quantity and costs of medications prescribed, rather than aspects of the quality of the related clinical health care provision.

The second is in relation to the broad groups of disease and injury accounting for the greatest amount of health expenditure. These have been reported in *Australia's Health 2008* (AIHW 2008a: Table 8.9) and are cardiovascular, oral health, mental disorders, musculoskeletal, neoplasms (including cancer), injuries, respiratory, digestive system, nervous system, and genitourinary.

Assigning indicators to the various categories in the indicator framework is mostly straightforward. Special judgment has been exercised in some cases; not all indicators have been able to be assigned to a category within each 'view' and some indicators have been viewed as relevant to more than one category.

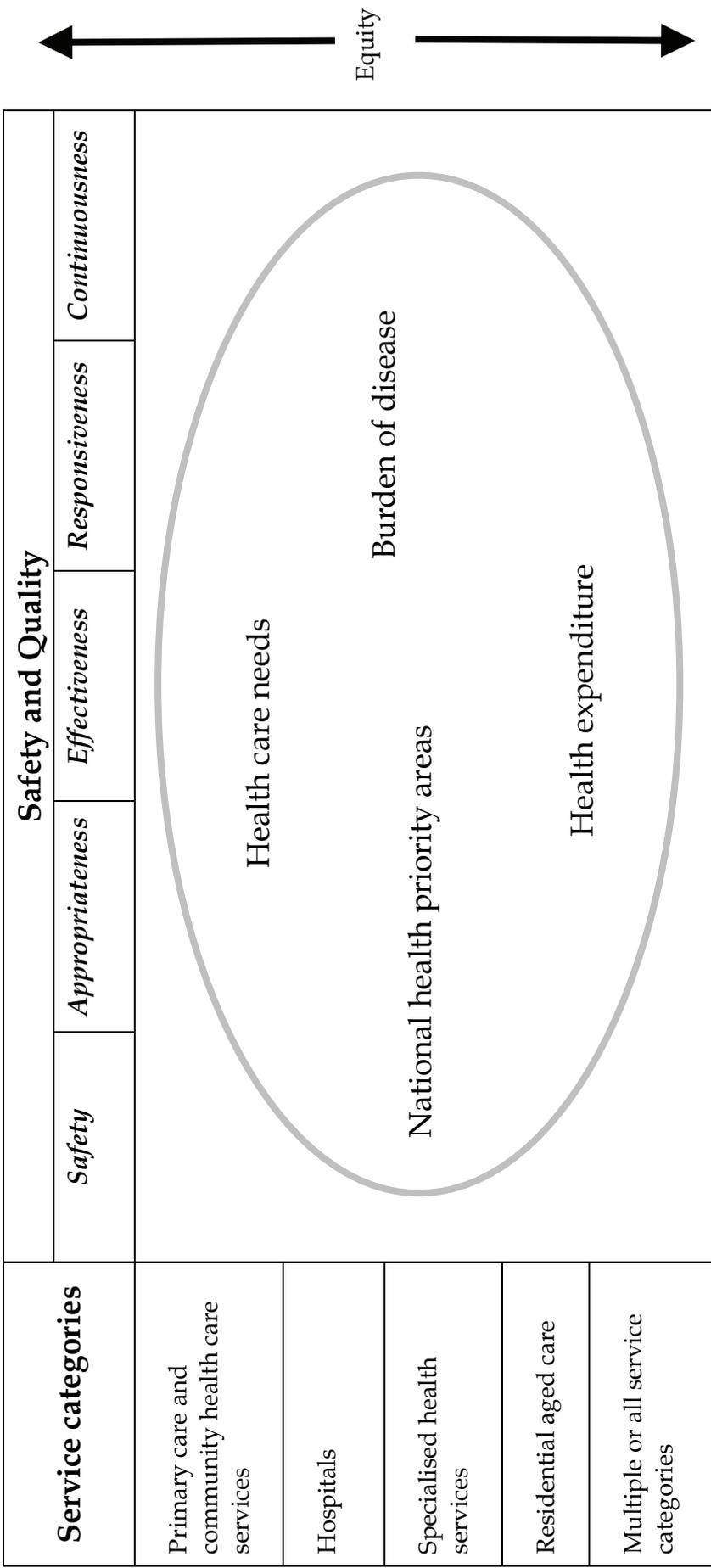


Figure 2.1: Framework for health care safety and quality indicators

2.5 Support projects

Three support projects were undertaken in parallel with the National Indicators Project, to support the selection of national indicators. Summaries of the reports from these projects are provided in Appendix 5.

The first was an analysis of patient safety indicators developed by the Organisation for Economic Cooperation and Development (OECD). It demonstrated that some of the indicators may be suitable for incorporation into a national health care safety and quality indicator set for Australia. Such indicators could be suitable for international comparisons.

The second study, *Measuring and Reporting Mortality*, assessed the feasibility of national indicators of in-hospital mortality, using routinely collected admitted patient data. The study concluded that hospital administrative data are suitable for generating hospital standardised mortality ratios for three mortality groups (high-risk cases, lower-risk cases and all cases) and for individual hospitals and hospital peer groups. It recommends that the indicators be used as screening tools signalling that safety and quality problems might exist and could be further investigated. The *Measuring and Reporting Mortality* report has now been published (AIHW 2009).

The third study provided further detail on the national indicators relating to primary health care, to inform the consultation process. In addition the report provided information on indicators of safety and quality in primary health care in use in Australia and internationally and potential sources of data for primary health care indicators in Australia. Different methods of analysing and presenting primary health care indicators were discussed and examples provided.

2.6 How the indicators were selected

The indicators were selected to achieve broad coverage of important safety and quality issues in Australia, drawing on some existing indicator sets, on the framework and support projects, and on an assessment of how 'useful' and measurable any candidate indicators were likely to be.

A preliminary list of possible indicators was compiled and an initial selection of 67 indicators made. This selection was primarily aimed at ensuring a broad coverage of the major issues of importance for health care safety and quality in Australia. The decisions taken were based on:

- Initial consultations with stakeholders
- A scan of the environment to identify key and emerging issues for safety and quality in Australia and internationally (involving 29 different sources including the OECD and the Agency for Healthcare Research and Quality (AHRQ 2008))
- Advice from the ACSQHC on the development of performance indicators for the National Healthcare Agreement.

The initial list was discussed by NIAG at its July 2008 meeting, and subsequently refined and amended to a set of 58 which were proposed in the *Towards National Indicators of Safety and Quality in Health Care* discussion paper. This discussion paper formed the basis of

consultations with a wide range of stakeholders across Australia from November 2008 to February 2009.

Drawing on feedback received through the consultation process and continued work within the AIHW to populate the indicators with readily available data, this list was revised to the 55 recommended in this report. This included the removal of a number of the proposed indicators (for further details see section 3.5) and addition of several new or alternative indicators.

Sentinel events

‘Sentinel events’ are events which potentially or actually lead to serious harm to patients and can signal serious failures in the system. They are routinely collated for all public hospitals in Australia and were reported in summary for public and private hospitals by the Commission (ACSQHC 2008). On the advice of NIAG, no measures of specific sentinel events have been included in this set even though such indicators would be within scope as defined in section 2.2.

In part the decision of NIAG was taken because the total number of sentinel events is small (in 2004–05, the number was 130 across Australia’s entire public hospital sector (AIHW/ACSQHC 2007)). Counts of sentinel events are therefore unlikely to be sensitive enough to changes in safety, so they are not considered to be reliable indicators.

Although there are no indicators for specific sentinel events, a related structure indicator has been included. It focuses on the appropriate monitoring of incidents including sentinel events at health care facilities.

Indicator analysis and assessment

As part of the process of selecting the recommended indicator set, a range of analyses was done to determine the usefulness of individual indicators and of the set as a whole.

Typically, the criteria used to select the indicators include various measures of indicator usefulness. For example, the NHPC (NHPC 2001) says that indicators should:

- Be worth measuring
- Be measurable for diverse populations
- Be understood by people who need to act
- Galvanise action
- Be relevant to policy and practice
- Measurement over time will reflect results of actions
- Be feasible to collect and report
- Comply with national processes of data definitions.

Additional criteria have been formulated to apply to sets of indicators as opposed to individual indicators:

- Cover the spectrum of the health issue
- Reflect a balance of indicators for all appropriate parts of the framework
- Identify and respond to new and emerging issues

- Provide feedback on where the system is working well, as well as for areas for improvement.

Several of these criteria are applied through our assessment of the indicators against the framework, which has been designed to ensure coverage of the relevant health care safety and quality issues, policy relevance (through inclusion of the NHPAs), and coverage of all aspects of the health care system.

Stakeholder advice on which indicators were useful and should be included also contributed to decisions about exclusion, inclusion or refinement.

A further analysis was undertaken to establish the measurability of the selected indicators. The indicators recommended have not been limited to those for which data are readily available, so the set was assessed to identify those which are able to be reported now and those which require further development.

Four categories of measurability have been used in the indicator summaries in Appendix 1:

- Currently reportable – as per recommended specification
- Currently reportable – data development required to meet recommended specifications
- Not currently reportable – indicator and/or data development required
- Concept proposed for further development.

‘Data development required’ indicates that further work is needed to develop or update data sources to enable national reporting of the indicator (for example, when data are collected in some jurisdictions but not all, or when an additional data element is needed in an existing data collection).

‘Indicator development required’ indicates that the most appropriate definition, numerator and denominator for the indicator need to be identified and agreed (for example, when there are several possible ways of measuring the concept).

‘Concept proposed for further development’ indicates that a concept is important but needs work because there is currently no agreed definition and no means of measurement. Please refer to section 4.2 for further discussion.

Review of international comparisons available for each of the indicators has also been undertaken.

Further detail regarding the measurability of each of the recommended indicators is provided in the indicator summaries in Appendix 1, including:

- The data specifications, including appropriate population, for each of the recommended indicators (where known)
- The current availability and quality of data for the recommended indicators
- Data for indicators where data are readily available to the AIHW
- Any suggested data development work to achieve national comparability for the recommended indicators, and to fill gaps in indicator coverage.

National Healthcare Agreement performance indicators

There is some overlap between the performance indicators in the National Healthcare Agreement and the indicators proposed here. The National Healthcare Agreement includes

18 indicators relevant to health care safety and quality, and have been reflected in the indicators in this report. This overlap is noted in the indicator descriptions in Appendix 1.