

Information Strategy

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*The Information Strategy is an evolving document.
Comment on the projects that comprise the Strategy is welcomed.
Please direct comments and suggestions to mail@safetyandquality.gov.au*

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Table of contents

Table of contents	i
Glossary	ii
Introduction	1
♦ The Commission and its role in national information	1
♦ The Commission’s national work program	3
♦ Developing the Information Strategy	3
♦ National leadership and coordination on information	4
♦ Governance of the Information Strategy	6
♦ The Information Strategy: Four work streams for improved information	6
Work stream 1: Supporting Quality Improvement	7
♦ Project 1.1 Improving and sharing incident information	7
♦ Project 1.2 Information for quality maternity care.....	9
♦ Project 1.3 Australian clinical quality registries	10
♦ Project 1.4 Primary care information — using and improving what we have	14
Work stream 2: Supporting Regulatory Functions and Organisations	17
♦ Project 2.1 Improved information for medication, device and vaccine safety.....	18
♦ Project 2.2 Watching briefs on key related developments	20
Work stream 3: National and International Benchmarking	21
♦ Project 3.1 National indicators	21
Work stream 4: Improving National Information Infrastructure	23
♦ Project 4.1 National data sets and standards	23
♦ Project 4.2 Best-practice statistical methodology.....	25
♦ Project 4.3 Data linkage and reconciliation	26
♦ Project 4.4 Safety and quality and e-Health — watching brief	28
Appendix 1: Governance structures	29
♦ Information Strategy Committee	30
Appendix 2: References	32

Glossary

ACIR	Australian Childhood Immunisation Register
AHMAC	Australian Health Ministers Advisory Council
AHMC	Australian Health Ministers' Conference
AIHW	Australian Institute of Health and Welfare
ANZICS	Australian and New Zealand Intensive Care Society
BEACH	Bettering the Evaluation and Care of Health
DVA	Department of Veterans' Affairs
ICD10	International Classification of Diseases (10 th revision)
MATES	Medicines Advice and Therapeutics Education Services
MBS	Medicare Benefits Schedule
NBA	National Blood Authority
NCRIS	National Collaborative Research Infrastructure Strategy
NEHTA	National E-Health Transition Authority
NHIG	National Health Information Group (now NHIMPC)
NHIMG	National Health Information Management Group (now NHIMPC)
NHIMPC	National Health Information Management Principal Committee
NHMRC	National Health and Medical Research Council
NHPC	National Health Performance Committee
NICS	National Institute of Clinical Studies
NPS	National Prescribing Service
OECD	Organisation for Economic Co-operation and Development
PBS	Pharmaceutical Benefits Scheme
RACP	Royal Australasian College of Physicians
SIMC	Statistical Information Management Committee
TGA	Therapeutic Goods Administration
WHO	World Health Organization

Introduction

◆ The Commission and its role in national information

Information is essential in the identification of safety and quality issues and the monitoring of change. Decisions on priorities and practices to promote safety and quality of the health system rely on relevant information. In recognition of this need for evidence, all Australian governments and many clinical colleges and health professionals are already actively engaged in building information and knowledge about safety and quality, and putting the results into practice.

The Australian Commission on Quality and Safety in Health Care (the Commission) was established in 2006, following the July 2005 report of the Review of Future Governance Arrangements for Safety and Quality in Health Care (the Paterson Review). All Australian governments contribute to funding the Commission. The Commission's scope is 'across the continuum of health care'.

The Paterson Review began its report by noting that:

'In Australia, the safety and quality agenda has reached a point of transformation. The national effort is set to move beyond a specific focus on reducing patient harm to a broader focus on systems improvement. This shift has the potential to yield substantial benefits in both the safety and quality of care and the efficiency of care delivery.'

It is widely recognised that the Australian health system as a whole has reached a stage where significant reform is both possible and necessary. While the system performs adequately against a number of indicators, it is beset by problems such as inefficient use of resources, difficulties with access, and overlapping roles and responsibilities between jurisdictions. There is growing recognition, in Australia and internationally, that the focus should be on ameliorating these inefficiencies and performance deficits. Safety and quality improvement can be the cornerstone of this modernisation and reform agenda.'

The Paterson Review considered that the broader governance arrangements for the Commission will have been successful if, 'in five years, there has been measurable improvement across a number of key indicators in the quality of health care received by patients in Australia.'

It was in this context that the Paterson Review made specific observations about data and analysis:

'The Review Team believes that the lack of coordinated collection and analysis of safety and quality data seriously hinders efforts to manage safety and quality problems and improve systems. Moreover, we do not know if the health care system has become safer as a result of recent efforts, because there is insufficient information at a state or national level.

The lack of data utilisation also impacts upon the health system's ability to routinely feed information into a cycle of improvement. As cited by the Royal Australasian College of Physicians (RACP) in its submission to the Review, "clinicians do not have ready access to meaningful information about clinical practice", despite evidence-based practice being reliant on timely access to such information.

A key function for the new national body will be to analyse the progress of safety and quality improvement in a meaningful way. In order to do this the body will have a key role to play, within current multilateral government arrangements, to ensure that a minimum data set for safety and quality of health care is created and maintained. This will allow for a comprehensive assessment of the state of safety and quality of health care in Australia, filling a notable gap in what is known about the current extent of safety and quality problems, the impact of recent initiatives, and the capacity that exists for improvement.'

Information, then, is seen as a key input to system improvement, and data analysis, development and coordination are considered essential to assessment of national progress.

Directions set down by Ministers following the Paterson Review require the Commission to:

- ▶ recommend national data sets for safety and quality, working within current multi-lateral governmental arrangements for data development, standards, collection and reporting; and
- ▶ report publicly on the state of safety and quality including performance against national standards.

An over-arching aim for the Commission is to provide national leadership and coordination in the development, analysis and reporting of information that enhances the safety and quality of health care.

◆ The Commission's national work program

The Commission's Information Strategy relates to and supports its overall work program. A five-year work program was approved by Ministers in late 2006. The Commission has since developed a shorter term version of its work program focussed on nine priority programs:

1. Patient Charter of Rights
2. Open Disclosure
3. Hygiene
4. Patient Identification
5. Handover
6. Medication Safety
7. Accreditation
8. Quantification and Benchmarking
9. Harness Information Technology and Communication

More information on both work plans can be found on the Commission's web site (<http://www.safetyandquality.gov.au>).

◆ Developing the Information Strategy

The purpose of this Information Strategy is to enable the Commission to lead and coordinate the improvement of information and data collection to advance safety and quality. The Strategy is based on the key directions set down by Ministers at the establishment of the Commission, and by decisions of Commission members. Preliminary discussion with key stakeholders — clinicians and their peak bodies, consumers, researchers, government bodies and health service providers in all sectors — have also shaped the Strategy. One result of these preliminary discussions is that the National Health Information Management Principal Committee (NHIMPC) of the Australian Health Ministers' Advisory Council (AHMAC) has included the main themes and projects of the Information Strategy in its own Strategic Work Plan.

The Strategy is an evolving document and will develop and mature as the component projects advance and as the measurement requirements of the Commission's overall work program are specified. Comments are welcomed and will influence future directions. The Strategy will be reviewed and modified from time to time with any new versions published on the Commission's web site.

The Strategy must relate to all fields in the health sector — spanning all sectors and areas of hospital and non-hospital care (including primary and ambulatory care, and community care). It must also serve all users of health system, including those who are most in need for high quality health care, such as Aboriginal and Torres Strait Islander people. This broad reach will be a challenge and will require further work; it is addressed in the current Strategy in various ways. For example, primary care information is the subject of a specific project on ‘using and improving what we have’, and is also a component of a broad project on national indicators for public reporting. All data components of the Strategy capable of monitoring outcomes will include outcomes for Indigenous people, for instance by ensuring the inclusion of a flag to indicate self-identified Indigenous status in relevant data collections.

◆ National leadership and coordination on information

Given that the Commission’s role is to provide national leadership and coordination, how will this role be fulfilled in the information area? The Commission will be working cooperatively with existing stakeholders in the field and will, for example:

- ▶ add value to existing efforts, especially where related activities are occurring across the country and where national support and coordination would enhance the quality of these initiatives, or bring economies of scale;
- ▶ identify gaps in existing efforts, and help stakeholders fill them, for instance by funding demonstration projects to develop clinical or administrative data systems;
- ▶ encourage the collation of national data where it will provide more robust information to underpin safety and quality initiatives;
- ▶ foster the development of improved methodology and infrastructure in the collection and use of information that will be of benefit across the nation.

In line with this approach the Commission’s work on the Information Strategy will not:

- ▶ duplicate the work of existing bodies or committees,
- ▶ involve establishing its own extensive data repositories; nor
- ▶ become a source of ongoing funding for information projects, seeking rather to ‘embed’ information systems with the systems and professionals they serve.

National coordination appears to be particularly welcomed by national providers, such as private hospital chains, who sometimes find jurisdictional variations in standards and reporting requirements a cost and source of inefficiency.

The Commission's collaborative approach to the work in the Information Strategy will involve:

Focussing on practical priorities

- ▶ ensuring that information meets a priority need, and that there is a clear purpose for the information, evidence that it will be effective, and a stated plan for its use and dissemination; and
- ▶ ensuring the data work stream supports the other components of the Commission's work including accreditation.

Building on what has been done

- ▶ establishing what the national picture is, developing informed plans for action, advising, collaborating with and assisting key players in implementing change;
- ▶ building on existing projects, including work of the former Australian Council for Safety and Quality in Health Care (the former Council), or other expertise where available; and
- ▶ using existing data where available.

Communicating and collaborating

- ▶ feeding information back to those who have provided it, and those who need to act on it;
- ▶ forming strategic partnerships and establishing an appropriate advisory structure for each project that includes all major stakeholders;
- ▶ establishing a communication strategy for most projects; and
- ▶ working with existing national structures for health information, including the Statistical Information Management Committee (SIMC) and NHIMPC.

Ensuring quality in information

- ▶ following standard quality criteria for statistics and indicators (such as validity, reliability, sensitivity); and
- ▶ complying with ethical principles and privacy requirements.

The Commission will generally coordinate and facilitate projects rather than carry out work in-house. Various processes will be used — tendering, seeking expressions of interest, or working under established Memoranda of Understanding — to select partners or contractors to undertake work under the direction of the Commission. The Australian Institute of Health and Welfare (AIHW) will be a key partner on some projects. The AIHW has a unique position as a national statistical and information authority, and as a custodian of key national data sets with strong privacy and confidentiality protection.

◆ **Governance of the Information Strategy**

The Commission has established an Information Strategy Committee responsible for oversight of the projects in the Information Strategy and for reporting to the Commission. Further information about the Information Strategy Committee can be found in [Appendix 1](#).

◆ **The Information Strategy:
Four work streams for improved information**

Information requirements do not exist in isolation from other parts of the health system. The way information is designed, accessed and used will vary depending on its purpose and the functional area in which it is generated and interpreted. This Information Strategy is therefore structured around the underlying purposes of information described in the Paterson Review. It recognises that the purposes of measurement affect the processes and outcomes of measurement.

The strategy outlines directions and a program of work that delivers on the Paterson Review's recommendations and ensuing ministerial decisions. The program contains four streams of work:

1. [Supporting Quality Improvement](#);
2. [Supporting Regulatory Functions and Organisations](#);
3. [National and International Benchmarking](#); and
4. [Improving National Information Infrastructure](#).

These work streams and projects are not separated from each other or from other initiatives to improve safety and quality. Inter-relationships are manifold and are indicated throughout the Strategy.

The remainder of this paper outlines the rationale for each of these work streams, and the proposed initial projects.

Work stream 1: Supporting Quality Improvement

Aim:

To support quality improvement of specific areas of clinical practice and the implementation of evidence-based practice with information that has a national scope or application.

In many areas of clinical practice, quality improvement requires information to be gathered across several care settings, or outcomes to be measured over time. A key component in developing each of the following projects is to ensure that the information assists in the resolution of an important problem.

The effective use of data relies on those involved in quality improvement taking ownership of the data and accepting its relevance to achieving change. Health professionals need to be engaged and involved in developing indicators for process improvement, and in the form of timely feedback (for example, control charts). Without this, the information will not be used to change practice.

Projects in this stream provide information to support the implementation of quality improvement initiatives. Engagement of key professional organisations is essential for these projects. National coverage of information will be obtained wherever possible. Timely feedback of information to individual providers or organisations is a key feature of this work stream. Timeliness and the primacy of quality improvement make this work stream significantly different from the higher level and public reporting focus of [Work stream 3](#).

◆ **Project 1.1** **Improving and sharing incident information**

Purpose

To consider the merits and potential for improving and sharing national information on clinical incidents.

Timeframe and results

The Commission will research the methods and value of sharing information nationally on clinical incidents, and will prepare an options paper for future national directions in late 2007.

Details

This project examines the potential for a number of information sources to contribute to meaningful national analysis of clinical incidents. There have been a large number of national and jurisdictional-based initiatives to improve patient safety and to manage and analyse clinical incidents. Most jurisdictions have established systems for incident management and analysis, including implementing computer-based incident reporting systems and criteria for conducting root cause analyses in their public services.

Ministers mandated national incident reporting of eight 'sentinel' (serious adverse) events, and the former Council commissioned a national report on these sentinel events in public hospitals, which was carried out by the AIHW in collaboration with all jurisdictions (published July 2007). Many of these incidents are rare and there are currently some differences in the jurisdictional definitions used for these incidents. The work, on the eight event types, yielded 130 events for analysis, and the resulting report was found to be of limited utility. Recommendations from the report included harmonising data definitions and broadening the collection to include more events, ideally based on the severity of outcome and likelihood of recurrence. The next steps following this report need careful consideration.

The growing sophistication of some administrative databases may create opportunities for flagging some system failures. National reporting on adverse events may rely on data defined, identified and analysed using existing routinely collected data. The analyses of existing administrative data proposed in [Project 3.1](#) (which will include analysis using the new 'diagnosis onset' or complications flag in national hospital collections) will be of value in developing efficient and reliable methods for monitoring adverse events.

National quality improvement may, however, be well served by other ways of sharing information on incidents and the known patterns of risks, including focusing on the results of root cause analyses and 'sharing the learning' from these. Evidence on the efficacy of learning from detailed, qualitative analyses must also be evaluated. Information and evidence, both Australian and international, must be assembled and assessed, in consultation with experts and stakeholders in this very active field, in recommending the best approach nationally.

The key focus for the Commission is to identify where national action by the Commission will add value to what is already occurring across the country. For instance, the publication of thematic reports in priority areas could be a vehicle for making the best possible use of available information, and would provide a valuable resource to the field. Ideas are being gathered, and the Commission will consult further before recommending the next steps following the first national sentinel events report, and the support that the Commission could provide, at a national level, to incident management.

◆ Project 1.2 Information for quality maternity care

Purpose

To establish and use a national set of maternity indicators to improve the quality of maternity care.

Timeframe and results

First calculation and use of indicators, and the development of any new data standards required, in early 2009.

Details

In 2002, Health Ministers agreed to a collaborative project to enable analysis of comparative clinical performance data from tertiary obstetric and gynaecological hospitals in Australian States and Territories. The Department of Health (WA) agreed to coordinate the project and the former Council provided funding in 2004. A multi-disciplinary group, including obstetricians, midwives, general practitioners, experts in maternity policy, perinatal epidemiology, data definition, and consumers, was established to advise on the project. The work involved reviewing the literature in detail and proposing a core set of maternity indicators in a final report in mid-2007. The proposed indicators at the different stages are:

Antepartum	Smoking cessation advice during pregnancy
Intrapartum	Induction of labour rates for selected first births Caesarean section rates for selected first births Episiotomy rates for all first births Third and fourth degree tears for all first births Unassisted vaginal births following a spontaneous onset of labour for selected first births
Postpartum	APGAR score ≤ 6 at 5 minutes for live term infants Death of baby around time of birth Significant blood loss within 24 hours following vaginal birth Supporting breastfeeding

The work described in the report provides a valuable model for indicator development and for use by expert and appropriate stakeholder groups. The indicator selection methods involved both a sound evidence base and appropriate stakeholder engagement. The indicators developed through this process should ideally have a relationship to maternity care standards and to accreditation processes.

The report recommends that the Commission should assume leadership and governance for the next phase of the project and the coordination of future work. The Commission has expressed its intention to do so to NHIMPC, which has indicated its support. The proposed work is outlined in the report and includes work 'to drive implementation of the indicator set and to develop support mechanisms to assist clinicians and health services'. It is important that the information gathered be used to 'close the loop' and gives feedback to clinicians and others, so they can take action to improve care.

Most of the indicators recommended in the draft report can be calculated from existing data, although some require new data items to be collected. The indicators have not yet been calculated and aspects of the scientific soundness and feasibility need to be examined.

Other relevant background in this area is the work on maternal deaths being carried out by the National Perinatal Statistics Unit of the AIHW. This work, funded by the Commission, involves:

- ▶ preparing a report on maternal deaths for 2003–05; and
- ▶ developing options for the future of the collection, taking into account other processes, reports and collections such as the National Hospital Morbidity database, clinical incident reporting systems, the core maternity indicators project and the National Perinatal Data Collection.

◆ **Project 1.3** **Australian clinical quality registries**

Purpose

To establish and validate national operating standards for clinical quality registries.

Timeframe and results

Through this project, the Commission will lead and coordinate improvement in the quality and consistency of clinical registry information so that it is better able to improve the safety and quality of Australian health care. The Commission intends that all clinical registries should eventually operate under a best practice model and be classed as an 'Australian Clinical Quality Registry' if doing so.

It is intended that operating standards and technical and data design will be completed in 2007–08. These standards will then be validated by a small number of registries, with final reporting to the Australian Health Minister's Advisory Council (AHMAC) in 2009.

Details

Overview

Registries are maintained for a number of purposes, including epidemiology, research and to form part of an individual patient's clinical record. The Commission is interested in those registries whose primary purpose is to improve the safety or quality of health care provided to patients, that is, 'A registry (that) builds on data collected from events in daily health care and aims to gather documentation to implement quality improvements' (Eyenet Sweden 2005).

Such registries typically operate as follows: clinicians provide to the registry details of their care of groups of patients; they are then able to view their pattern of care and its outcomes as compared to the clinician group as a whole. Properly applied, this decreases outlier behaviour and promotes convergence on best practice and best patient outcomes. The availability of large numbers allows evaluation of different types of care or devices used, to determine the best route to a good outcome for the patient.

The Commission proposes establishing national operating standards for clinical quality registries. These standards will form a model to which all best practice registries will adhere. The model will prescribe standards for governance, ethics, the use of national data standards, clinical use of information, and uniform technical design for key components of registries.

After draft standards have been developed, the Commission proposes a small number of registries will be supported to validate the operating standards and technical design.

Rationale

Currently there are a large number of clinical registries funded from a range of sources. Some, such as the ANZICS intensive care, vascular surgery, renal dialysis, and transplant and national joint registries, already contribute to valuable improvements in clinical practice and health outcomes and have strong support and participation rates within the relevant clinical profession.

However, the many existing clinical registries are quite variable, both in their ability to improve patient care and in the quality of their information. They currently operate in a fragmented and inconsistent environment. Governments receive applications for funding support for a range of different types of registries. Overall:

- ▶ no national standard currently exists against which funding applications by clinical registries can be written or assessed;
- ▶ no routine processes exist to ensure that clinical registries improve safety and quality. For example, many registries take a significant period of time to collate data, which reduces their ability to provide timely information back to health care providers and to support clinical quality assurance and improvement activities;

- ▶ registry processes, data and technology are neither uniform nor standardised, creating significant inefficiencies (including preserving the use of paper systems), and retarding development of inter-operability with existing information systems. For example, an enhanced capacity to link to existing information sources from administrative systems can significantly reduce the number of data items that need to be collected by a registry;
- ▶ some registries collect data items that do not conform to national definitions, thereby limiting the usefulness of the data; and
- ▶ data quality, including completeness, is often compromised. Many registries seek information from the routine administrative collections to determine completeness or match data with administrative collections (including hospital statistics or deaths). New technical solutions may enable identifiable information for individual patients to be removed from a registry, but still enable outcome data to be obtained and data completeness to be verified.

Objectives of operating standards

The proposed national operating standards for Australian Clinical Quality Registries will improve the safety and quality of health care and deliver better value on the investment in clinical registries.

Registries complying with the proposed Australian Clinical Quality Registry standards would:

- ▶ have a clear purpose and scope;
- ▶ understand and adopt a business case approach to their own funding;
- ▶ adhere to a standard governance model (including ethical standards and effective processes to ensure the clinical use and relevance of the registry);
- ▶ adhere to information management principles (including, at a minimum, the principles currently outlined in the 'Minimum Guidelines for Health Registers for Statistical and Research Purposes', NHIMG, 2001);
- ▶ adhere to a recommended uniform technology approach;
- ▶ have the capacity to analyse data and provide timely advice to clinicians;
- ▶ provide annual reports which would include the registry's methods of altering practice and evaluating change;
- ▶ involve the relevant professional organisations, for instance in the areas of data custodianship and clinical practice advice;
- ▶ adhere to privacy principles and legislation;
- ▶ increase the efficiency and security of registry systems by using a standard technical design for key registry components; and
- ▶ be adding value over and above augmentation of existing routine data collections.

Better value for money will be obtained by:

- ▶ funding allocated to new or existing registries being based on a business case that establishes that information collected can achieve demonstrable improvement in safety and quality, and cannot be gathered suitably in any other way;
- ▶ funding being provided (and reviewed) for periods greater than twelve months, providing stability for planning and greater accountability;
- ▶ reasonable requests for access to information being met; and
- ▶ funding obligations requiring registries to provide de-identified aggregate data and an annual report to ensure that there has been an appropriate review of the reasons for any statistically significant outlier and professionally-led corrective intervention where appropriate.

Phasing

The project will consist of four phases with the first two phases operating simultaneously.

(1) Developing operating standards

The Commission will develop draft operating standards for clinical quality registries to deliver the objectives detailed above including:

- ▶ governance standards — roles and responsibilities of the registry custodians including access to the information, security and privacy;
- ▶ use of national data standards by registries;
- ▶ reporting requirements for registries, including annual reports on the operation of the registry;
- ▶ streamlined systems for registries to access appropriate administrative data; and
- ▶ agreement on key indicators to evaluate the impact of the registry on clinical practice.

(2) Developing technical and data design

A high-level technical design and specification for the key common technical building blocks will be developed and will form part of the national operating standards. Any technical design will take into account the NEHTA work on identifiers and the National Collaborative Research Infrastructure Strategy (NCRIS) project on Population Health and Clinical Data Linkage. Endorsement for the technical design will be sought from NHIMPC.

(3) *Validating national operating standards*

This phase will select a small number of pilot registries to validate the national operating standards, contributing to their finalisation. The selection process will include, *inter alia*, the Commission's Inter-Jurisdictional Committee, the National Health and Medical Research Council (NHMRC), and the Commission. Registries will need to show that they have ongoing funding to be selected for the pilot. The selection process will make it clear to registries that participation in the pilot does not imply ongoing funding from either the Commission or AHMAC.

(4) *Recommending national operating standards for clinical quality registries*

Results of the validation and testing will form the basis of draft national operating standards for best practice clinical quality registries which will be considered by the Commission's Committees and the Commission. Recommendations will be forwarded to AHMAC and, subsequently, to AHMC.

◆ **Project 1.4** **Primary care information — using and improving what we have**

Purpose

To contribute to the development and use of the primary care information that has the greatest potential to improve safety and quality, via collaborative work with key organisations, analyses of existing data and work on data development.

Timeframe and results

The primary care indicators work will be completed, as part of [Project 3.1](#), in 2008. Other project components are being developed.

Details

The Paterson Review recommended that the Commission work across the 'continuum of care', including primary care. The role of the Commission across all settings of care, and the large number of safety and quality issues that span different care settings, make this an important area for the Commission. The diversity of provider types (medical, allied health, nursing, alternative medicine) and organisation types (public-funded, small private, large private) raises many challenges to information gathering in primary care. The diversity of treatments and conditions, as well as the variation in service and organisation types, can result in an uncoordinated approach to primary care information.

It is important to determine the key issues in primary care information that have the greatest potential to improve safety and quality with the benefit of better measurement.

The Australian Government Department of Health and Ageing and the AIHW are developing a project that will seek to improve the basic information available on primary care. The Commission will assist and advise during this process.

The Commission will also undertake its own work program in the area of primary and ambulatory care information, in collaboration with key stakeholders, and complementary to the work of those stakeholders. Two broad types of projects will be undertaken by the Commission: development of improved information; and analyses using available data.

Information development projects now being scoped or considered include:

- ▶ primary care indicators. These will be a specific component in [Project 3.1](#). This project will review major existing proposals for primary care indicators, likely uses and users. Analyses using existing data will be carried out using present key indicators, with emphasis on exploring gaps between clinical practice and evidence. Geographic analysis and mapping of selected indicators will be explored. Data linkage may be an important technique to enable analyses of existing data to explore primary care outcomes. This work will be done in close collaboration with the National Health Performance Committee (NHPC);
- ▶ the Commission's priority program on Medication Safety will span the continuum of care — primary, secondary and tertiary sectors — so that information initiatives on medication safety will cover primary care;
- ▶ other possible methods for supporting or exploring quality of primary care including:
 - ▶ development of information to support 'handover' to and from primary care providers, such as work to define the key common information elements in handover. This could inform, but not directly involve work on, functional specifications of primary care software;
 - ▶ analyses based on data linkage, which potentially offer new possibilities using existing data. For instance, analyses of DVA data and veterans' use of, and experiences in, different areas of the health system could form a possible demonstration project on 'consumer pathways', illustrating the value of inter-connected data sets.

Data sources and methods that can be used to obtain primary care information include:

- ▶ *Sampling*: An example of this is the current BEACH data collection that has collected information on 100 consecutive patients from a changing subset of general practices since 1998.
- ▶ *Registries*: For example, the Australian Childhood Immunisation Register (ACIR).

- ▶ *Notification Systems*: For example, notifications for various infectious diseases.
- ▶ *Selected Administrative Data*: PBS or MBS data contain clinical content that could be used as measures of quality or safety. For example, NICS has used the item number for glycated haemoglobin to look at the frequency with which this test is done in individuals with diabetes.
- ▶ *Diagnostic/Pathology Information*: As most pathology tests are performed by a small number of large pathology providers it is feasible that this information could be used for some quality indicators.

Work stream 2: Supporting Regulatory Functions and Organisations

Aim:

To improve safety and quality in health care through better use of information by regulatory organisations and through better availability of information to those affected by health care regulation.

Regulatory authorities are responsible for setting rules on various aspects of health care. The mechanisms available to regulatory authorities are set out in legislation.

The information available to organisations that have mandated regulatory functions can have a significant impact on the effectiveness of these organisations. In addition to improving information available to regulatory organisations, it is equally important to make improved information available to professionals and consumers affected by regulation, as they rely on effective regulation to support safety and quality.

The current project plans in this stream focus on medication, device and vaccine safety. It is hoped that the proposed work will increase the information available to the TGA so as to improve post-market surveillance of medication, device tracking and vaccine safety.

Future plans will be developed to support other areas of regulation, for instance flowing from the Commission's national review of national safety and quality accreditation. This review has resulted in the development of a proposed alternative accreditation model. This model is being discussed with stakeholders in a second phase of consultation that will be concluded by March 2008. Included in the model is a proposal for the establishment of national minimum safety standards that are applied across all settings of care, are endorsed by health ministers and are monitored by a national body. The detail of the organisation to govern the minimum standards and the specific safety areas covered by the standards are yet to be agreed. Establishing a data collection has a long lead time, and planning should start now to put in place the systems required for a set of national minimum safety standards if it is to be implemented in a timely way. Information system planning requires consideration of the data definitions related to the safety standards, as well as functional design features including data capture and derivation methods and frequencies.

◆ **Project 2.1** **Improved information for medication, device and vaccine safety**

Purpose

To improve the safety and quality of medication, device and vaccine use by improving the information available to regulatory organisations, health service delivery agencies, professionals and consumers.

Timeframe and results

More detailed plans for medium and long-term initiatives will be produced in 2007–08.

Details

Monitoring the safety and effectiveness of devices, medications and vaccines is important. The short time it takes for some products to enter the market (with approval sometimes based on limited trials) and then to be widely adopted can pose significant safety and quality risks. The safety of medications, vaccines and medical devices has frequently been of concern to the public. Examples reported in the media in recent years include breast implants, cox-2 inhibitors (for example, Vioxx), joint replacement, meningococcal vaccine and, recently, coronary and carotid artery stents.

Research has indicated that existing notification systems see only a small proportion of adverse medication or device events being reported. The development of registries and the use of large administrative data sets are increasing and these may improve detection of such events. However, for many risks, the relationship between the medication or device and the risk may not be apparent to a doctor treating an individual patient.

The role of the National Prescribing Service (NPS) in offering prescribing advice to health professionals and the post-market monitoring of medication use by the Department of Veterans' Affairs (DVA) in its MATES program indicate potential new avenues for improving medication safety. The MATES model operates by compiling veterans' health and medication histories, enabling the system to alert veterans and health professionals to risks such as potential drug interactions or prescribing errors. Initiatives by NEHTA in both the areas of notification systems and medications may also be relevant.

The National Joint Replacement Registry is highly regarded for identifying revision rates for different hip and knee replacements. Private health insurers currently hold details on devices implanted in private patients. This information may also be useful in monitoring the safety and effectiveness of some devices.

There are important safety and quality issues in the area of medication and device safety, a need for action, a number of key organisations, a range of work underway, and a need for national leadership and coordination that is well-planned and targeted. This is the approach the Commission is taking in developing a suite of initiatives around medication, device and vaccine safety, both medium and long term.

Medication safety

Medication safety has been identified as one of the Commission's priority programs (see [Introduction](#)). Recognising that there is a vast array of current work in this field, an early task for the Commission will be to scope all players in medication safety, their major issues and current work. This scoping task is currently being undertaken as part of the Commission's work in the medication safety priority program. Early discussions with key stakeholders have confirmed the importance of this work, and the need for the Commission to provide coordinated leadership on the safe use of medicines.

Information proposals to support this program are being developed. They include:

- ▶ the use of linked data sets to undertake post-market surveillance of adverse medication events;
- ▶ the development of medication safety indicators;
- ▶ ways to improve the appropriateness and safety of medication prescribing through the better use of information, education and guideline services;
- ▶ examination of the possible approaches to e-prescribing to inform the setting of national standards for user interface design, charts, alerts and messaging.

A longer term vision is for a 'patient-centric' repository of medication histories. Medication accuracy relies on the exchange of accurate information among general practitioners, pharmacies, hospitals and consumers. Rather than relying on ephemeral records and two-party communication channels, and the known risks they create, this concept envisages a secure, central, validated national repository of information, accessible to the consumer and health professionals caring for them, to ensure that medication and related histories are known and that new medication is prescribed with accurate and full knowledge of past reactions and current medications. The repository would be based on combining or linking existing sources of information. This concept relates to two of the Commission's priority programs — Medication Safety and Handover. It has the potential to generate information useful not only for individual patient safety, but also for aggregation for the purposes of monitoring medication safety more broadly.

Other areas of work

The Commission is examining the area of device registries, mindful of the value of the Joint Replacement Register. Work towards establishing any device registry would be undertaken in accordance with the best practice model for clinical quality registries to be established as part of [Project 1.3](#).

◆ **Project 2.2** **Watching briefs on key related developments**

Purpose

To ensure the Commission remains aware of key information developments in regulatory organisations and is able to participate in and respond to those developments.

Improved information for quality use of blood and blood products

The Commission's interest is to encourage the development of information available to improve appropriate blood product usage rates.

Currently, blood and blood product use is worth more than \$650 million per annum. There are important safety and quality issues associated with the use of blood. NHMRC guidelines cover many aspects of appropriate blood product use. The National Blood Authority (NBA) is considering how to improve the information on appropriate blood product use as well as how to improve understanding of the rapid growth in demand. A number of jurisdictions are running projects to improve appropriate blood product usage rates.

There is likely to be an overlap in the information requirements for appropriate use of blood products and other quality improvement information projects. The Commission will work with the NBA and various jurisdictions to assist in the development of information requirements and systems to support the quality use of blood and blood products.

Work stream 3: National and International Benchmarking

Aim:

To develop summary information capable of monitoring Australia's performance in safety and quality and comparing it with that of other countries

Nationally, Australia must be able to evaluate its performance — where it stands and how it is progressing in health care safety and quality. Trend and other forms of comparative analysis will be key elements in such reporting. Comparison of safety and quality performance, both nationally and internationally, can prompt identification and analysis of areas where Australia appears to perform significantly worse or better than other countries.

Many organisations — in Australia and overseas — have already developed indicators for benchmarking and reporting. Summary information, frequently in the form of statistical indicators, is now regularly published by national research organisations to highlight areas of concern, or to compare the performance of different providers, regions or countries. International agencies such as WHO and the OECD are working on frameworks and data specifications to promote such benchmarking.

Benchmarking and comparisons require care in design, compilation and interpretation. The Commission's collaborative approach will maintain the focus of such endeavours on information that is of real importance to stakeholders, and relevant to safety and quality improvement. This work stream will shape the information and data generated through the Commission's partnerships with the AIHW and other bodies, such as the National Health Performance Committee.

◆ **Project 3.1 National indicators**

Purpose

To enable the Commission to report publicly and systematically on safety and quality, including 'performance against standards'. A primary aim is to recommend key indicators for national reporting on safety and quality.

Timeframe and results

The Commission will work with the AIHW, national health information committees and other key stakeholders in 2007–08 so as to publish recommendations for indicators and reports on component projects in 2008, followed by a report using national data for the agreed indicators.

Details

The work in this area is a suite of projects that will chiefly involve the AIHW, national health information committees, and reference groups representing key stakeholders. The projects represent a mix of high-level work related to national policies, and demonstration projects to ensure that data analyses are practical and related to 'on the ground' interpretation and system improvement.

This suite of projects may evolve as specific measurement priorities are agreed, for instance in accreditation, medication safety and hygiene.

Key components of the initial work will include:

- ▶ research on national information needs, including stakeholder discussions, review of literature and key policy papers and agreements;
- ▶ a survey of indicators of national significance;
- ▶ comparative and explanatory analyses of existing administrative data to ascertain whether they can fulfil information and benchmarking requirements. This will include an analysis of administrative data sets to determine the economic costs of patient injury;
- ▶ projects to develop component groups of national indicators and to explore the practicalities and usefulness of using administrative data to produce national indicators. These projects are:
 - ▶ measurement and reporting of mortality, including examination of standardised mortality rate indicators;
 - ▶ reviewing major existing proposals for primary care indicators, including likely uses and users. Analyses using available data will be carried out to recommend and present key indicators; and
 - ▶ analysis of Australian data to compile the OECD Patient Safety Indicators. This work will be published in Australia prior to publication of international comparisons by the OECD.

This initial work will result in a published discussion paper on the project's findings including:

- ▶ national information needs;
- ▶ data sources and availability;
- ▶ indicators considered; and
- ▶ options and recommendations for national reporting.

A second phase of work will involve discussing and testing these options with key stakeholders and then publishing:

- ▶ a definitive proposal for a National Safety and Quality Indicators Report, including a set of achievable safety and quality indicators for use at national level; and
- ▶ a pilot National Safety and Quality Indicators Report, using existing data and recommending steps to obtain missing data.

This final report will be recommended to AHMC (via AHMAC) for approval and ongoing reporting.

Work stream 4: Improving National Information Infrastructure

Aim:

To coordinate the improvement of key information and technical infrastructure required for national information on safety and quality.

Across all the Information Strategy work streams there are common infrastructure issues that require national collaboration and coordination. These include data definitions and specifications, information technology developments, and analytic techniques. There may be significant quality and efficiency gains to be made in communicating about, or working on coordination, or even standardisation, of such infrastructure.

Australia has strong national health information management structures and processes established under Health Ministers. The Commission will work with these, and other stakeholders, to ensure that the statistical and information implications and requirements of all projects in this Strategy, and in the work of the Commission more broadly, are considered and coordinated so as to enhance the quality of information about the safety and quality of health care. Recommendations to improve national data sets and standards will flow from this work.

◆ **Project 4.1 National data sets and standards**

Purpose

To improve the national capacity to measure and monitor safety and quality in health care by enhancing data quality and consistency. The mechanism to achieving this will be to 'recommend national data sets for safety and quality, working within current multi-lateral governmental arrangements for data development, standards, collection and reporting' (as requested by Ministers).

Timeframe and results

The data inventory and framework will be completed in mid-2008. Data development work will be undertaken as information needs are identified.

Details

This project is one of those required by the Health Ministers, and will involve conducting development work to support the Commission's other projects. This is an ongoing project, creating a growing number of national data standards supporting better safety and quality statistics. These data standards will usually reflect enhancement to existing collections, but may sometimes relate to new information developments or data collections.

The Paterson Review noted that:

'AHMC agreed that participation in the collection of data for a national minimum data set should be required of public hospitals and that States and Territories should consider requiring the same for private hospitals. The Review Team is of the view that a national minimum data set should also include primary care data, as a first step towards a whole of system approach to collecting a national minimum data set for safety and quality. It should also include a broad range of performance data, reflecting the broader quality focus envisaged for future national action on safety and quality. AHMAC should bring these matters to NHIG's attention.'

The project will provide a 'baseline' overview of national data in 2007–08, against which later progress by the Commission and others can be evaluated. The initiatives taken and new standards agreed will be recorded.

The initial component of the project involves the following key activities:

- ▶ a process — to be agreed between the Commission and national health information committees — for the development of national data sets and standards for safety and quality;
- ▶ a survey of data sources that can provide national information about safety and quality in health care;
- ▶ analysing national information needs arising from other Information Strategy projects (for instance, [Project 3.1](#)) and other Commission work (for instance, its accreditation work);
- ▶ developing a framework or broad information model in which to map and assess information needs and sources of information on safety and quality in health care;
- ▶ developing a structured inventory of data sources about safety and quality in health care; and
- ▶ reviewing the ability of existing data sources to meet national needs for safety and quality information.

Subsequent components of work will involve the development of new data and metadata specifications, to address identified information gaps. This work will support, and be done in collaboration with, national health information management committees and will result in new or modified entries in the 'National Health Data Dictionary' (AIHW 2006).

The work on this project will be undertaken with AIHW, the groups responsible for defining information needs, and national health information committees.

◆ Project 4.2 Best-practice statistical methodology

Purpose

To enable the Commission to recommend an appropriate strategy to promote optimal use of data to improve health safety and quality

Timeframe and results

Expressions of interest will be sought from suitably qualified people and organisations in 2008. The work will result in recommendations for a strategy to promote:

- ▶ best-practice statistical analysis for health safety and quality; and
- ▶ a range of processes to foster excellence in statistical interpretation including contributing to the development and support of analysts.

Details

The Commission wishes to support best-practice statistical methodology. A number of factors are under consideration by the Commission:

- ▶ reliable measurement is fundamental to health performance monitoring, but can pose statistical challenges with currently available data. Comparison is the essence of many analyses in use or proposed in the safety and quality field. Agreed methods to improve the validity of comparisons, to enable the construction of more reliable indicators, and to control appropriately for risk are essential;
- ▶ there is scope for the enhancement of the use of administrative data, but clarification of appropriate methodologies is needed. The interpretation of, or adjustment for, small samples may be required;
- ▶ statisticians often work in research teams but, unlike clinical specialists, may not have access to an existing network of professionals doing similar analyses. The Commission may consider the creation of a 'data network' to enable people working on information design, collection and analysis to engage with each other and to be aware of national initiatives.

The Commission will develop plans for systematic scoping to include:

- ▶ an overview of the major analytical methods in use in the safety and quality field, in research, sample studies, surveys and administrative data collections. This work will include the use of statistical process control charts;
- ▶ an investigation of the existence of appropriate collected resource materials or other authoritative resource 'hubs' (for example, web-based) relevant to statistical analysts in the field;
- ▶ the development of options for a 'data network', possibly web-based;
- ▶ consideration of the need for professional development, in terms of e-learning, tertiary education or on-the-job training.

◆ Project 4.3 Data linkage and reconciliation

Purpose

To evaluate the potential for linked data to provide useful safety and quality information.

Timing and results

The national health information committees and other national organisations are working on data linkage. Specific plans will follow an initial review of this research and development. A number of the proposed Information Strategy projects may enable evaluation of specific data linkage analyses.

Details

Data linkage is a technique that connects data over time or from different data sources. There has been growth nationally and internationally in the use of data linkage between data sets to generate information for analysis. Linkage is done either using a unique person identifier (for example, DVA number) or based on probabilistic matching, using a number of demographic pieces of information. Data linkage is one of the information approaches being considered in several of the information projects described in this Information Strategy.

Examination of outcomes attributable to treatment requires a patient-centric information model that follows each patient over time. Survival, measured after diagnosis or treatment of a condition, is a simple example of data linkage between a data set and the National Death Index.

Data linkage requires strict adherence to privacy and other ethical laws and guidelines, as well as to sound data custodianship processes. The development of privacy encryption and high level security into linkage software provides significant added protection to privacy.

The health gains to be made from improved use of statistics, via techniques such as data linkage, require thorough exploration with consumers about their priorities, their need for information about the methods being used, the benefits to flow from enhanced analysis and the balancing of the benefits against any privacy risks. The Commission, in any work it does relating to statistical data linkage, will strive to ensure this balance is achieved and that there is a good public flow of information about the statistics and their use.

Recognition that there are important research safety and quality questions that can be answered relatively efficiently through record linkage has seen significant growth in this area. A number of NHMRC research grants are using data linkage approaches. The DVA and the Western Australian data linkage projects have linked a range of data sets including hospital statistics, MBS and PBS data and deaths registry data. NSW and ACT recently established a data linkage unit, the Centre for Health Record Linkage. The Statistical Information Management Committee (SIMC) is actively researching national options for improved and appropriate data linkage processes. The Commission will work actively with SIMC. The Australian Department of Education Science and Training also proposes to allocate NCRIS funding to establish the core national infrastructure required for health record linkage research.

The potential of data linkage to reveal or generate important indicators of safety and quality is illustrated in the following examples of current and potential data linkage projects:

- ▶ *Beta Blocker continued post-hospital discharge after acute coronary syndrome:* NICS has identified that the use of Beta Blockers and, for some conditions, ACE inhibitors is important in the management of heart disease. Use of appropriate medication after an admission to hospital for an acute coronary event can have a significant impact on survival. While there are reasons specific to an individual patient why a medication may not be used, the percentage of such patients on these medications after discharge varies significantly. Linking the hospital ICD10 diagnosis and PBS prescription information would allow statistical examination of this variation. With population ageing and the high incidence of heart disease, the numbers of patients entitled to pension PBS co-payment rate will increase the validity of the indicator. This is potentially a marker of good patient care. The outcome measure of survival can also be monitored between areas with higher and lower usage rates of these medications.
- ▶ *Diabetes Management:* The use of MBS and linked hospital data may be able to produce indicators on the standard of health care being provided to people with diabetes. For instance, regular monitoring of glycated haemoglobin and routine diabetic eye testing are identified by specific MBS items.
- ▶ *Vaccine Safety:* Linkage between immunisation registry data and hospital data would enable issues of safety and effectiveness of vaccines to be monitored.

◆ Project 4.4 Safety and quality and e-Health — watching brief

Purpose

To ensure that the Commission is able to align current and future safety and quality information developments with key developments in e-health and data capture technologies.

Details

E-health developments have significant implications for national reporting on safety and quality. There is much potential in new technology to improve safety and quality, and to reduce data reporting burdens. There is a need for the Commission to stay up-to-date with work in the e-health field, and to be involved in specific projects designed to ensure that technology delivers benefits to safety and quality, along with strategies to align current and future safety and quality data with emerging e-health applications. To achieve these benefits, the Commission is engaging with NEHTA. An example of such work could be for the Commission to advise on the priorities of items developed by NEHTA for incorporation into databases, for instance, in relation to practical improvements in discharge processes and outcomes.

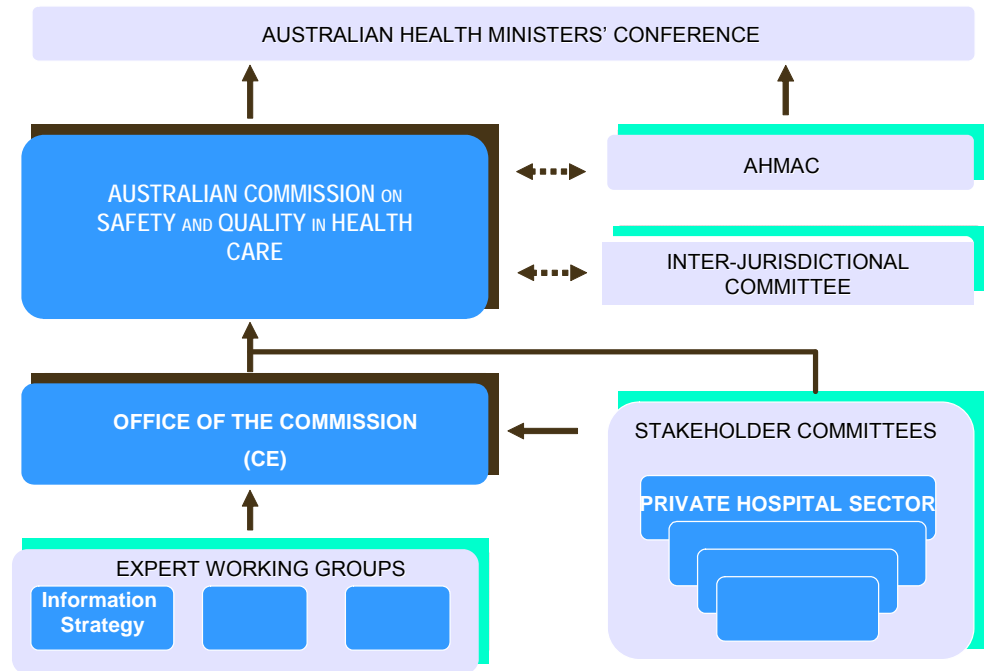
There are also implications for more localised technical innovation, for instance in methods of recording in health facilities such as bar coding, personal digital assistants (PDAs), digital pens, electronic discharge summaries, web-based recording, electronic prescribing and use of e-health systems in pathology and radiology.

The Commission has identified 'Harnessing Information and Communication Technology' as one of its priority programs (see [Introduction](#)).

Appendix 1: Governance structures

The Commission commenced on 1 January 2006, as an unincorporated, non-statutory body, with no legal status independent of the Australian Health Ministers' Conference (AHMC) which established it, and to whom it reports.

The governance model is as follows:



The Commission has been funded by the Australian, state and territory governments to develop a national strategic framework and associated work program that will guide its efforts in improving safety and quality across the health care system in Australia.

Ministers are engaged both through the Australian Health Ministers' Advisory Council (AHMAC) and directly via recommendations requiring action and decisions, and via direct representations from the Commission.

The Inter-Jurisdictional Committee is responsible for advising the Commission on the adequacy of the policy development process, in particular the implementation of policies. It is also accountable for ensuring that health departments are aware of new policy directions and able to review local systems accordingly. The Committee comprises relevant and senior nominees from each jurisdiction to provide advice to the Commission on feasibility of implementation.

In November 2006 Ministers approved a five-year work plan for the Commission.

Over its life, the Commission will:

- ▶ lead and coordinate improvements in safety and quality in health care in Australia by identifying issues and policy directions, and by recommending priorities for action;
- ▶ disseminate knowledge and advocate for safety and quality;
- ▶ report publicly on the state of safety and quality, including performance against national standards;
- ▶ recommend national data sets for safety and quality, working within current multi-lateral governmental arrangements for data development, standards, collection and reporting;
- ▶ provide strategic advice to Health Ministers on best practice thinking to drive quality improvement, including implementation of strategies; and
- ▶ recommend nationally agreed standards for safety and quality improvement.

The Commission's nine priority programs are listed in the [Introduction](#).

Further information about the Commission can be found on its web site: <http://www.safetyandquality.gov.au>.

◆ Information Strategy Committee

The Commission established an Information Strategy Committee responsible for oversight of the projects in the Information Strategy and for reporting to the Commission. The terms of reference for the Committee are to:

- ▶ guide the implementation of the Information Strategy of the Commission;
- ▶ make recommendations to the Commission;
- ▶ monitor project progress and provide progress reports to the Commission, and;
- ▶ provide a mechanism for the expertise of Commissioners to be utilised for the implementation of the information strategy.

Members of the Information Strategy Committee are:

Chair: Professor Michael Ward
Head, Central Clinical Division School of Medicine, The University of Queensland

Dr Shiong Tan
Clinical Advisor, Department of Health, Western Australia

Professor Clifford Hughes
CEO, Clinical Excellence Commission, New South Wales

Mr George Neale
Managing Director, George Neale & Associates, Canberra

Mr Richard Eccles
First Assistant Secretary, Primary and Ambulatory Care Division, Australian
Government Department of Health and Ageing

Dr Paul Tridgell
Information Strategies, Australian Commission on Safety and Quality in
Health Care

Dr Christine Jorm
Senior Medical Advisor, Australian Commission on Safety and Quality in
Health Care

Ms Ros Madden
Data Development and Statistics Manager, Australian Commission on
Safety and Quality in Health Care.

Appendix 2: References

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