

# Appendix 1: Primary care data and information needs discussion starter

## Potential areas of information need and example questions (as presented to stakeholders)

In order to assess how useful existing data are for providing information about GP services in Australia, we need to know what it is that people would like to use the data for. We would like to get your perspective on the importance of having good information about various issues, and what would be the questions you would like to be able to answer.

Listed here as an example are some of the major issues that have an impact upon general practice services, and some specific questions that could provide insight into these issues. The list is not exhaustive, but is intended to prompt consideration and discussion of a broad range of issues about which information may be needed.

We would appreciate your views on:

- the importance of these issues, and any others you would like to add
- the relevance or usefulness of the questions listed under each issue
- any additional specific questions you would like to see answered.

### *Accessibility and availability*

Before issues surrounding the quality of care can be considered, patients must be able to consult with a GP. This means that services must be available where and when they are needed, and be accessible to all within the community. They should also be affordable. In addition, patients may be more likely to seek care, and be satisfied with the care received, if they are able to attend a GP of their choice (for example, women having access to a female GP regarding sexual and reproductive health issues). Other factors that might impact on accessibility and sustainability—particularly in rural and remote areas—are the size of the local practice, the hours worked and the ages of the practicing GPs.

GP characteristics may also affect the types of patients seen (for example, their age, sex, cultural background or particular health problems) and types of care delivered, so are important to consider when examining geographic differences or changes over time.

Questions that may provide relevant information about these issues include:

- What proportion of non-referred GP attendances are bulk-billed? (by geographic area)
- What proportion of practices are taking on new patients? (by geographic area)
- What proportion of practices provide or participate in out-of-hours care? (by geographic area)
- What proportion of practices offer home visits? (by geographic area)
- What proportion of GPs are aged 50 years or over? (by geographic area)
- What is the age–sex distribution of GPs? (by geographic area)
- What proportion of GPs work part-time? (by geographic area)

- What proportion of GPs are in solo practice? (by geographic area)
- What proportion of practices have a practice nurse? (by geographic area).

### *Prevention and detection*

In addition to providing treatment for acute conditions and ongoing management for chronic conditions, GPs are well placed to prevent disease through promoting healthy behaviours and managing risk. This includes both opportunistic and regular screening and risk assessment, as well as targeted attention to those who are at high risk or are less likely to seek preventive care (for example, Indigenous Australians or men in rural areas).

Questions that may provide relevant information include:

- What proportion of GPs have relevant risk factor information for each patient (age-appropriate)? (such as SNAP, body weight, BP, cholesterol, blood sugar, family history, occupation)
- What proportion of practices have, or participate in, a register/recall system:
  - (a) for Pap smears
  - (b) for management of diabetes
  - (c) for immunisations?
- What proportion of eligible older people have received an EPC annual voluntary health assessment? (by area and patient demographics).

### *Quality, safety and appropriateness*

Both patients and practitioners want to know that the care provided by GPs is safe, appropriate and in line with best-practice. A variety of schemes address this issue, including practice accreditation, the Practice Incentives Program (PIP), and 'quality use' programs (such as QUM and QUP).

Questions that might provide insight into these issues include:

- What proportion of practices are accredited? (by geographic area)
- What proportion of practices participate in each of the PIP incentives? (by geographic area)
- What proportion of the population are currently taking more than X prescription medications? (by age group).

### *Use of guidelines*

Guidelines for practitioners provide a guide to best-practice, based on the available evidence. A large number of guidelines are available for GPs, covering such topics as management of Type 2 diabetes, use of antidepressant medications in children and preventive activities. However, despite the resources devoted to preparing these guidelines, we know little about whether and how they are used by GPs, and what impact they have on patient outcomes or practitioner workloads.

Questions that may provide information about these issues include:

- What proportion of GP are aware that best-practice guidelines exist? (for a particular health problem)
- What proportion of GPs are using these guidelines as a basis for care decisions/practices?
- Is the care provided to a patient with a particular condition consistent with the guidelines for that condition? For example: what proportion of patients with diabetes are receiving a complete annual cycle of care?

- Does use of the guidelines lead to better outcomes for patients? For example: are asthmatics with a care plan less likely to be admitted to hospital for respiratory problems than those without a care plan?
- What do GPs use for decision support when no guidelines are available?

### *Use of new technologies*

Advances in computing power and electronic information transmission have great potential to streamline clinical processes and improve patient care. Although the majority of GPs have computing facilities available, it is unclear how these tools are being used and what their impact is on practice and on patient outcomes.

Developments in diagnostic and treatment technologies are also changing the way GPs deliver care and manage cases, but again the impact of these changes is unclear.

Questions that may provide relevant information include:

- What proportion of GPs keep electronic patient records?
- What proportion of GPs use electronic prescribing?
- What proportion of GPs use an electronic decision-support system in their consultations?
- What proportion of GPs use electronic systems for:
  - (a) referral
  - (b) imaging
  - (c) pathology?
  - Of these, what proportion have the results returned electronically?
- What proportion of practices make use of point of care pathology testing (PoCT)?

## Appendix 2: Participants in consultations and surveys

**Table A2.1: Participants in stakeholder consultation meetings**

Participant	Affiliation
Dr Roshmeen Azam	Health Professional Team, National Prescribing Service
Mr Richard Bartlett	Manager, Primary Care Policy, Department of Veterans' Affairs
Mr Richard Bialkowski	Chief Executive Officer, ACT Division of General Practice
A/Prof Helena Britt	Director, Family Medicine Research Centre, University of Sydney
Mr Andrew Bruce	Reimbursement Strategies Manager, Medicines Australia
Mr Brenton Chappell	Executive Officer, Adelaide Hills Division of General Practice
Ms Catherine Dalton	Director, Primary Care Performance Section, DoHA
Ms Judy Daniel	Assistant Secretary, Primary Care Chronic Disease Branch, DoHA
Dr Peter Del Fante	Chief Executive Officer, Adelaide Western General Practice Network
Ms Elizabeth de Somer	Regulatory Affairs Manager, Medicines Australia
Ms SallyAnn Ducker	A/g Assistant Secretary, Primary Care Policy and Analysis Branch, DoHA
Mr Andre du Toit	Health Care Safety and Quality Unit, AIHW
Mr Paul Giacometti	Project Manager, e-Health Program, Australian General Practice Network
Ms Karen Gibson	General Manager, Project Coordination, NeHTA
Mr Hitendra Gilhotra	Assistant Director, Performance, Safety and Quality Section, DoHA
Dr Ann-Louise Hordacre	Research Fellow, Primary Health Care Research and Information Service (PHC RIS), Flinders University
Mr Warwick Hough	Senior Manager, General Practice, Legal Services and Workplace Policy, Australian Medical Association
Mr Niall Johnson	Australian Commission for Safety and Quality in Health Care
Dr Chris Kelman	A/Prof in Population Health, Australian Primary Health Care Research Institute, Australian National University
Mr Roger Kilham	Economic Consultant, Australian Medical Association
Mr Phil Lowen	Principal Adviser, e-Health, Australian General Practice Network
Ms Lisa McGlynn	Assistant Secretary, e-Health Branch, DoHA
Dr Graeme Miller	Medical Director, Family Medicine Research Centre, University of Sydney
Mr Simon Moore	Team Leader, General Practice Systems Improvement Team, GPpartners, Brisbane
Dr Christopher Mount	Director, eHealth Clinical Communication Section, DoHA
Ms Louise O'Rance	Health and Hospital Reform Commission Indicator Development Team, AIHW
Dr John Primrose	Medical Officer, Pharmaceutical Benefits Division, DoHA
Dr Steve Riddell	Program Evaluation Officer, National Prescribing Service
Ms Maxine Robinson	Secretary, Drug Utilisation Sub-Committee, Pharmaceutical Benefits Division, DoHA
Professor Nigel Stocks	Head, Discipline of General Practice, University of Adelaide

**Table A2.2: Electronic data collections survey**

Collection	Responsible organisation	Responded
Annual Survey of Divisions	AGPN	Yes
APCC	Improvement Foundation Australia	Yes
ASPREN	University of Adelaide	Yes
CARDIAB	CARDIAB Alliance	No
CONDUIT	University of Melbourne	Yes
GP Census	AGPN	Yes
GPRN	Health Communication Network Ltd	Yes
IMS	IMS Health	No
MEDIC-GP	University of Adelaide	No
NT AHKPI	NT Department of Health	No
Practice Health Atlas	Adelaide Western General Practice Network	Yes
Prescribing market data	Cegedim Strategic Data	No
Various	NPS	No

# Appendix 3: Comparison of data collections

Table A3.1: Comparison of advantages and limitations of data collections

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
<b>PAPER-BASED, ADMINISTRATIVE and CATI COLLECTIONS</b>				
BEACH	<ul style="list-style-type: none"> <li>Random sample of GPs surveyed</li> <li>GP and patient characteristics</li> <li>reasons for encounter</li> <li>problems managed</li> <li>management techniques used</li> </ul>	<p>A national survey of general practice activity collecting data from the GP–patient encounter.</p> <p>GP–patient encounter</p>	<p>Data covers problems presented in practice and their management—medications, referrals, and tests.</p> <p>Random ever-changing sample.</p> <p>Data collected on patient encounters and medication regardless of Medicare and PBS eligibility.</p> <p>Large continuous time series</p>	
<b>Population health surveys</b>				
ALSWH	<ul style="list-style-type: none"> <li>GP visits/patterns of use</li> <li>Diagnoses/medications</li> <li>GP advice on lifestyle</li> <li>Serious illnesses</li> <li>Specialist/allied health items</li> <li>Female GP</li> <li>Health service access</li> <li>GP satisfaction/cost</li> <li>BP/cholesterol checks</li> </ul>	<p>National survey of women to ascertain the use of health services by women and to explore the factors influencing women's health.</p>	<p>Large longitudinal study.</p> <p>Over-sampling in rural and remote areas.</p> <p>Consumer views of GP quality of care.</p> <p>Age group representativeness.</p> <p>Can be consensually linked with MBS and PBS data.</p> <p>Good response rate (70%+).</p>	<p>Response bias in terms of overrepresentation of women with tertiary education and under-representation of some groups.</p> <p>Differences in those giving consent to data linking and those who do not.</p> <p>Reduced sample size linked data may affect some in-depth analysis.</p>
AusDiab	<ul style="list-style-type: none"> <li>Diabetes status</li> <li>Health service use</li> <li>Discussions with GP about health</li> <li>Other chronic health conditions</li> <li>Demographics</li> </ul>	<p>National survey of diabetes mellitus prevalence and associated risk factors in people aged 25 years and over.</p>	<p>Large national diabetes prevalence study.</p> <p>Provides a resource for the study of the prevalence and possible causes of diabetes and establishing possible risk factors.</p> <p>Baseline survey in 1999–2000 followed up in 2004–05.</p>	<p>Comparisons with the 1998 Australian population estimates showed younger age respondents were under-represented at the biomedical examination and the middle and older age groups were over-represented.</p> <p>Purpose-built as a diabetes collection: it may not be comparable to other reasons for health service use and quality of care.</p>

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**Table A3.1 (cont'd): Comparison of advantages and limitations of data collections**

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
NATSIHS	<p>Relevant data collected on:</p> <ul style="list-style-type: none"> <li>• self-reported conditions.</li> <li>• visits to GP/specialist</li> </ul>	Information collected on the health status of Indigenous Australians, their use of health services and facilities and health-related aspects of their lifestyle.	Information collected on Indigenous Australians in remote and non-remote areas of Australia who see a GP regularly and the type of medication used for their condition.	The reason for consultation was not recorded. Consultation information is 'as reported' by respondents.
National health survey	<p>Relevant data collected on:</p> <ul style="list-style-type: none"> <li>• self-reported conditions.</li> <li>• visits to GP/specialist</li> </ul>	A national population survey collecting data from households on a range of health-related issues.	Provides data about diagnosis, medications prescribed for selected conditions. Large random sample	Very limited data on the GP-patient encounter—medication for selected conditions. Consultation information is self-reported.
VPHS	<p>Use of and level of satisfaction with community health centres</p> <p>Self-reported diagnoses</p> <p>BP, cholesterol, diabetes/high sugar level and bowel cancer screening</p>	<p>A state-based (Vic) annual population survey collecting data from households on a range of health-related issues.</p> <p>Population health indicators gathered can assist in state government policy development.</p>	<p>Based on a core set of question modules, allows for comparability.</p> <p>Over-sampling in non-metropolitan areas allows for comparisons with metropolitan areas.</p>	<p>Collection item relates to use of community health centres, which include GPs, but also a number of other allied health professionals.</p> <p>Diagnoses data are self-reported.</p> <p>Limited to households with a landline phone connection.</p>
WA HWSS	<ul style="list-style-type: none"> <li>• Demographics</li> <li>• GP diagnosis of NHPA condition</li> <li>• Blood pressure (BP) or cholesterol checked</li> <li>• GP diagnosis of high BP or high cholesterol</li> <li>• Medications taken for high BP or high cholesterol</li> <li>• Risk factors</li> <li>• Health service use in past 12 months (primary health, hospital, allied health)</li> <li>• Seen GP in last 4 weeks for psychological distress</li> <li>• Influenza/pneumonia vaccination in last 12 months (over 65s)</li> </ul>	<p>A state-based (WA) monthly survey monitoring the health status of the population of WA.</p> <p>Collects data to inform policy decisions and assist in the provision of health services.</p>	<p>Large sample size.</p> <p>Excellent response rate (80% approx). Continuous sampling.</p>	<p>Includes English speaking respondents only.</p> <p>Small Indigenous sample.</p>

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## Appendix 3: Comparison of data collections

**Table A3.1 (cont'd): Comparison of advantages and limitations of data collections**

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
MBS	<p>Provider information:</p> <ul style="list-style-type: none"> <li>• name and address</li> <li>• speciality by qualification</li> <li>• registered major speciality</li> <li>• derived speciality based on type of claims</li> <li>• sex</li> </ul> <p>Patient information:</p> <ul style="list-style-type: none"> <li>• name, address of cardholder</li> <li>• date of birth</li> <li>• sex</li> </ul>	<p>The MBS is an administrative collection that deals with the payment of subsidies for services rendered by GPs and some other health professionals.</p>	<p><b>Administrative</b></p> <p>Data are based on items in the MBS and can be broken down by patient gender and age group. Medicare data include records of referrals and investigations that can provide an insight into the presenting clinical problem. PBS and MBS data may be linked.</p>	<p>No information on non-fee-for-service general practice components.</p> <p>No information about the reason for the consultation or the diagnosis.</p> <p>Data only on those services eligible for Medicare benefits.</p>
PBS	<p>Information about the drug and cost:</p> <ul style="list-style-type: none"> <li>• quantity</li> <li>• supply date</li> <li>• repeats</li> <li>• prescriber details</li> <li>• patient details</li> </ul>	<p>The PBS is an administrative collection that deals with the supply of pharmaceutical medicines subsidised by the Australian Government. Data are collected through pharmacy electronic records when the prescription is filled.</p>	<p>Possible to link PBS data with MBS.</p>	<p>Only collects data for claims on PBS subsidised drugs.</p> <p>Drugs outside the subsidy threshold, or where there is no subsidy, are not included in the collection.</p>
PIP and SIP	<p>Incentive payments cover:</p> <ul style="list-style-type: none"> <li>• information management and technology</li> <li>• access to A/H care</li> <li>• rural practice support</li> <li>• practice nurse employed</li> <li>• prescribing behaviour improvements</li> <li>• cervical screening</li> <li>• asthma and diabetes cycles of care</li> </ul>	<p>Incentive program to assist GPs improve their quality of care.</p>	<p>Data readily available on those practices and GPs that have provided services.</p>	<p>No record of consultation.</p> <p>Assumption that all GPs have provided the same level of service in meeting the PIP and SIP</p>

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**Table A3.1 (cont'd): Comparison of advantages and limitations of data collections**

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
RPBS	<p>Information about the drug and cost</p> <ul style="list-style-type: none"> <li>• quantity</li> <li>• supply date</li> <li>• repeats</li> <li>• prescriber details</li> <li>• patient details</li> </ul>	<p>The RPBS is an administrative collection that deals with the supply of pharmaceutical medicines subsidised by the Australian Government for the treatment of veterans and war widows.</p> <p>Data are collected through pharmacy electronic records when the prescription is filled.</p>	<p>Can be internally linked to examine use of medications by individuals</p>	<p>Only collects data for claims on RPBS subsidised drugs for patients with an entitlement card.</p> <p>Drugs outside the subsidy threshold or where there is no subsidy are not included in the collection.</p>
SAR	<ul style="list-style-type: none"> <li>• Practice size</li> <li>• Services provided</li> <li>• Use of computers</li> <li>• Number of episodes of care and client contacts</li> </ul>	<p>To collect data on service activity, staffing profiles and client numbers of Australian Government funded Aboriginal and Torres Strait Islander primary health-care services.</p>	<p>Provides information about preventive activities such as screening and vaccinations</p> <p>Two views of service provision—episodes and client contacts</p>	<p>No information about content of episodes of care, diagnoses or treatments</p> <p>Only includes those services that receive Australian Government funding</p>
<b>Other surveys and research</b>				
HIT	<p>Use of computers by GPs generally.</p> <p>Use of computerised clinical functions e.g. prescribing, drug–drug interactions, health summaries and progress notes, recall systems.</p>	<p>A national survey to determine the use of computers for prescribing and maintaining electronic health records. Provides a snapshot of how GPs are using information technology for clinical purposes.</p>	<p>Good representation of rural and remote GPs.</p> <p>Provides a recent picture regarding the use of computers as a practice aid.</p>	<p>Low response rate (39.5%).</p> <p>Survey responses are self-reported.</p>
NPS	<p>GP survey:</p> <ul style="list-style-type: none"> <li>• prescription medicines</li> <li>• information sources</li> <li>• computerised prescribing</li> <li>• view on generic medicines</li> </ul> <p>Pharmacist survey:</p> <ul style="list-style-type: none"> <li>• use of IT</li> <li>• patient communication</li> </ul> <p>Consumer survey:</p> <ul style="list-style-type: none"> <li>• prescription and non-prescription medicine use</li> <li>• attitudes to medicine use and medicine information sources</li> </ul>	<p>Surveys of GPs, pharmacists and consumers to determine knowledge relevant to medication use and NPS activities to encourage better use of medicines.</p> <p>Drug data analysed to provide independent information about medicines to health professionals and consumers, and to encourage and support cross-discipline and cross-sector collaborations that promote QUM</p>	<p>Provides data about the quality use of medicines (QUM), GPs level of knowledge about QUM and their understanding of changes in the use of medicines.</p>	<p>Low response rates to GP and pharmacist mail surveys (&lt;50%).</p>

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## Appendix 3: Comparison of data collections

Table A3.1 (cont'd): Comparison of advantages and limitations of data collections

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
TAPS	Demographics. RRMA area. Error report items: <ul style="list-style-type: none"> <li>• event</li> <li>• contributing factors</li> <li>• outcome</li> <li>• preventative options</li> </ul>	A state survey of GPs in NSW to determine the incidence of errors reported by GPs in the state.	Estimated error prevalence in general practice presented. Contributes to better understanding safety and quality of care in general practice. Data collected from urban, regional and rural/remote areas of NSW.	Low response rate (26%, n=84) Small sample size GPs are likely to under-report adverse drug events—other patient safety threats may also be under-reported.
<b>ELECTRONIC COLLECTIONS</b>				
APCC	Diabetes, CHD and better access to health care are the focus of the current program.	The Collaboratives program aims to achieve improvements across a broad range of clinical and practice business issues. Find and implement better ways to provide good quality primary health-care services.	Program can assist to improve patient care. Increased best-practice care through better use of information systems. Data can be collected from most clinical software programs in use. Data may be able to be linked to other sources	Small proportion of general practices nationally. Practices must apply to join the program and pass certain criteria. Practices are required to commit time and resources to program implementation and participation in it. Limited to practices working in the subject areas.
ASPEN	Collects data on influenza-like illness and other conditions seen in general practice. Data collected on: <ul style="list-style-type: none"> <li>• influenza</li> <li>• gastroenteritis</li> <li>• chicken pox</li> <li>• shingles</li> </ul>	The network is part of the Australian Government bio-surveillance strategy for preparedness for emerging communicable diseases	Electronic (web-based) ongoing submissions of de-identified patient data on influenza like illnesses mainly. Retention rate of GPs in the network is very high (95%) Quick, easy data entry operation.	Limited focus on a few specific diseases. Small volunteer sample of GPs submitting data. Needs more GPs in rural and regional areas to give better representation. Difficult to recruit and maintain GP participation

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**Table A3.1 (cont'd): Comparison of advantages and limitations of data collections**

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
CONDUIT	<p>Opportunistic sampling of GPs collecting data items such as:</p> <p><b>GP/practice:</b></p> <ul style="list-style-type: none"> <li>demographics</li> <li>number of GPs in the practice</li> <li>practice nurse available</li> </ul> <p><b>Patient:</b></p> <ul style="list-style-type: none"> <li>demographics</li> <li>Indigenous status</li> <li>reason for visit</li> <li>diagnosis</li> <li>medication prescribed</li> <li>pathology, imaging</li> <li>referrals</li> <li>procedures</li> </ul>	<p>Enables data from various sources to be analysed and linked into a single platform to provide a complete patient picture.</p>	<p>Data can be collected from various types of clinical software.</p> <p>Data can be linked with other data sources.</p> <p>Collects information about repeat visits linked to the initial visit/problem for longitudinal analysis.</p>	<p>Small divisional collection.</p> <p>Data collected from computerised practices only.</p> <p>Data quality issues mainly in regard to complete structured data components.</p>
GPRN	<ul style="list-style-type: none"> <li>GP characteristics</li> <li>Patient characteristics</li> <li>Encounter characteristics</li> <li>Scripts</li> </ul>	<p>Develop an electronic, longitudinal, patient-based data set—to improve MD and support educational and research initiatives.</p> <p>Data are used to assist in improving</p> <ul style="list-style-type: none"> <li>training for MD users</li> <li>functionality of future decision-support systems</li> <li>quality assurance activities</li> <li>communication channels.</li> </ul>	<p>Large longitudinal database.</p> <p>Prescription details regardless of PBS eligibility. GPs can compare their practice against 'best-practice standards' and those of peers</p> <p>Potential for medication/drug adverse events and treatment outcome studies</p>	<p>Sample selected from users of Medical Director (MD) software in computerised practices.</p> <p>Lower representation of older GPs (possibly due to lower computer use).</p> <p>Not able to link to external data.</p> <p>Variations in GP's computer use capability.</p>

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## Appendix 3: Comparison of data collections

**Table A3.1 (cont'd): Comparison of advantages and limitations of data collections**

DATA SOURCE	INFORMATION	PURPOSE	ADVANTAGES	LIMITATIONS
MEDIC-GP	<ul style="list-style-type: none"> <li>• Assessment</li> <li>• Treatment plan</li> <li>• Medications prescribed</li> <li>• Pathology investigations</li> <li>• Diagnostic imaging</li> <li>• Adverse reactions</li> <li>• Specialist referrals</li> </ul>	<p>Electronic data collection forming a pharmacoepidemiological database.</p> <p>Can offer investigation of research questions from a longitudinal perspective</p>	<p>Comprehensive clinical data collected over a decade.</p> <p>Integrated longitudinal perspective of patient clinical data in general practice.</p>	<p>A selected sample of nine computerised practices.</p> <p>No information as to whether scripts are filled.</p> <p>Not able to link to external data</p> <p>Collection has ceased</p>
NT AHPKI	<ul style="list-style-type: none"> <li>• Sex</li> <li>• Age group</li> <li>• Indigenous status</li> <li>• Locality (establishment) and reporting period</li> <li>• Health services</li> </ul>	<p>Will provide a baseline collection of key indicators that can assist health centre functions and government policy development</p>	<p>Can provide a primary health care performance reporting system for capturing and reporting Northern Territory Aboriginal primary health care key performance indicators data.</p> <p>Indigenous centred data collection.</p>	<p>Collection limited to state run community health centres.</p> <p>Aggregated data includes consultations with persons other than GPs, mainly Aboriginal health workers</p>
PHA	<ul style="list-style-type: none"> <li>• Demographics</li> <li>• Indigenous status</li> <li>• Medications</li> <li>• Height, weight</li> <li>• Diagnosis</li> <li>• Blood pressure, cholesterol levels</li> </ul>	<p>Collection of practice-level data within a divisional geographical area for use as a decision-support tool.</p> <p>Used to assist practices improve their clinical and business performance.</p>	<p>Data collected is mapped to the NHDD.</p> <p>Data integrated with other data sources e.g. Census.</p> <p>Minimal involvement of practice staff after initial establishment.</p>	<p>Data are collected when requested from computerised MD user practices.</p> <p>About one-third of the practices in the area involved.</p> <p>Data are not collected on GP-patient encounters only as information per patient.</p>

Table A3.2: Data collections—summary and contacts for further information

DATA SOURCE	TYPE	CURRENT SIZE	TIME SERIES	CONTACT INFO
<b>PAPER-BASED, ADMINISTRATIVE and CATI COLLECTIONS</b>				
<b>GP-patient encounter collections</b>				
BEACH	National annual paper-based GP survey. Approximately 20 GPs providing data each week.	<ul style="list-style-type: none"> <li>• 1000 GPs per year</li> <li>• 100,000 encounters per year</li> <li>• 1,000,000+ encounters to date</li> </ul>	1998–now	Helena Britt T: (02) 9845 8150 E: beach@fmrc.org.au W: www.fmrc.org.au/beach.htm
<b>Population health surveys</b>				
ALSWH	Longitudinal population based paper survey, conducted at three yearly intervals for each age cohort.	40,000 women	1995–now	T: (02) 4913 8872 E: whasec@newcastle.edu.au W: www.abswh.org.au
AusDiab	Population-based paper questionnaire plus physical measurements.	<ul style="list-style-type: none"> <li>• 20,000+ persons completed questionnaire</li> <li>• 11,000+ participated in physical tests in 1999–2000 and</li> <li>• 6,500 in 2004–05</li> </ul>	1999–2000 and 2004–05	T: (03) 9258 5050 E: research@diabetes.com.au W: www.diabetes.com.au
NATSIHS	Electronic 6-yearly Indigenous population based survey.	10,000+ interviews in 2004–05	1995, 2001, 2004–05	National Information and Referral Service 1300 135 070 or Katrina Poyser (08) 8943 2131. W: abs.gov.au
National health survey	Electronic 3-yearly population based survey.	25,000+ interviews in 2004–05	1989–90, 1995, 2001, 2004–05, 2007–08.	Jane Griffin–Warwicke (02) 6252 6535. E: jane.griffin-warwicke@abs.gov.au W: abs.gov.au
VPHS	Population-based annual CATI state survey.	7,500 interviews in 2006.	2001–now	Loretta Vaughan Phone: (03) 9096 5286 E: loretta.vaughan@dhs.vic.gov.au W: www.health.vic.gov.au/healthstatus/vphs
WA HWSS	Monthly population-based CATI state survey	550 surveyed each month 27,000+ (at Dec 2006) in total since 2002.	2002–now	Alison Daly E: alison.daly@health.wa.gov.au W: www.health.wa.gov.au

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## Appendix 3: Comparison of data collections

**Table A3.2 (cont'd): Data collections—summary and contacts for further information**

DATA SOURCE	TYPE	CURRENT SIZE	TIME SERIES	CONTACT INFO
MBS	Continuous electronic data collection from GPs.	107,000,000+ services recorded in 2006–07	1984–now	T: 1800 101 099 E: <a href="mailto:statistics@medicareaustralia.gov.au">statistics@medicareaustralia.gov.au</a> W: <a href="http://www.medicareaustralia.gov.au">www.medicareaustralia.gov.au</a>
PBS	Continuous electronic data collection from pharmacists.	2 billion + prescriptions recorded between 1992 and 2007	1984–now	T: 1800 101 099 E: <a href="mailto:statistics@medicareaustralia.gov.au">statistics@medicareaustralia.gov.au</a> W: <a href="http://www.medicareaustralia.gov.au">www.medicareaustralia.gov.au</a>
PIP and SIP	Continuous electronic data collection from GPs.	4800 + participating practices (as at November 2007).	1999–now	T: 1800 222 032 E: <a href="mailto:statistics@medicareaustralia.gov.au">statistics@medicareaustralia.gov.au</a> W: <a href="http://www.medicareaustralia.gov.au/provider/incentives/pip">www.medicareaustralia.gov.au/provider/incentives/pip</a>
RPBS	Continuous electronic data collection from pharmacists	179,000,000+ prescriptions recorded between 1992 and 2007	1984–now	E: <a href="mailto:statistics@medicareaustralia.gov.au">statistics@medicareaustralia.gov.au</a> W: <a href="http://www.medicareaustralia.gov.au">www.medicareaustralia.gov.au</a>
SAR	Annual paper-based survey of Australian Government-funded Aboriginal and Torres Strait Islander primary health services	Around 140 health services surveyed each year	2000–now	T: 1800 678 445 E: <a href="mailto:oatsih.enquiries@health.gov.au">oatsih.enquiries@health.gov.au</a> W: <a href="http://www.health.gov.au">www.health.gov.au</a>
<b>Other surveys and research</b>				
HIT	National one-off paper-based GP survey	1186 GPs	2005	Keith McInnes T: 02 9556 7240 E: <a href="mailto:keith@gp.med.usyd.edu.au">keith@gp.med.usyd.edu.au</a> E: <a href="mailto:mcinnes@hcp.med.harvard.edu">mcinnes@hcp.med.harvard.edu</a>
NPS	Paper-based surveys of GPs (biennial), pharmacists and phone survey of consumers (annual/biennial).	<ul style="list-style-type: none"> <li>• 800–900 GPs</li> <li>• 650+ pharmacists</li> <li>• 1200 consumers</li> </ul>	1999–now	Neil Donnelly T: 02 8217 8700 E: <a href="mailto:NDonnelly@nps.org.au">NDonnelly@nps.org.au</a> W: <a href="http://www.nps.org.au">www.nps.org.au</a>
TAPS	One-off NSW GP survey. Data reported electronically.	84 GPs 490,000+ encounters 400+ error reports	2003–04	Dr Meredith A B Makeham T: (02) 9818 1400 E: <a href="mailto:makeham@ozemail.com.au">makeham@ozemail.com.au</a>

(continued)

Table A3.2 (cont'd): Data collections—summary and contacts for further information

DATA SOURCE	TYPE	CURRENT SIZE	ELECTRONIC COLLECTIONS	TIME SERIES	CONTACT INFO
APCC	Electronic data lodgement by general practices.	480+ general practices		2005–now	Sarah Wrz T: (08) 8422 7466 E: apcc@improve.org.au W: www.apcc.org.au
ASPREN	Weekly electronic data collection from GPs all year round.	90 GPs		1991–Sept 2006 (paper-based system) Sept 2006–current (electronic reporting)	Dr Nigel Stocks T: (08) 8303 7583 E: nigel.stocks@adelaide.edu.au W: www.racgp.org.au/aspren
CONDUIT	Electronic data collection from GPs	12 GPs 5000 encounters		2006–now	Professor Siaw-Teng Liaw E: t.liaw@unimelb.edu.au W: www.grhanite.com/
GPRN	Electronic data collection from around 200 GPs each week.	<ul style="list-style-type: none"> <li>• 400 GPs currently enrolled</li> <li>• 800 GPs in total</li> <li>• 5 million patients</li> <li>• 17 million encounters</li> </ul>		1999–now	Andy Muchhala T: 1 800 622 678 E: andy.muchhala@hcn.com.au W: www.hcn.com.au/doctors/gprn.asp
MEDIC-GP	Monthly electronic data submission by GPs.	<ul style="list-style-type: none"> <li>• 150 GPs</li> <li>• 99,000 patients</li> <li>• 2-million clinical records</li> </ul>		1994–2004	Katherine Duszynski T: (08) 8303 3467 E: katherine.duszynski@adelaide.edu.au W: www.adelaide.edu.au/health/gp/units/medic-gp/
NT AHKPI	Electronic or web-based data collection from Community Health Centres.	Due to commence in July 2008.		Nil	Richard Inglis T: (08) 8999 2628 E: ahkpi.communications@nt.gov.au W: www.nt.gov.au/health/ahkpi
PHA	Annual electronic data collection from GPs.	30 general practices (approx). 60,000+ patients.		Data collected for the purpose of the PHA is destroyed after the PHA is constructed.	Julian Flint Phone: (08) 82443822 E: julian.flint@awgpn.org.au W: www.awdgp.org.au

## Appendix 3: Comparison of data collections

# Appendix 4: Results of criteria testing

## BEACH survey

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects sex, date of birth, postcode, NESB status, Indigenous status and concession card status
<b>Workforce information</b>	Yes
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collects sex, age, years in practice, practice size, sessions, hours worked (direct and on call) per week, practice postcode, graduation country, after-hours availability, computer use, FRACGP status.
<b>Problem managed</b>	Yes
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Collects both patient's reason(s) for encounter and diagnoses recorded.
<b>Comorbidities</b>	Limited
Is information about the patient's comorbid conditions available?	Only those managed at the same encounter generally recorded. Specific information may be obtained through SAND studies.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No longitudinal data available for individuals.
<b>Adherence to guidelines</b>	Yes
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects medication name, dose and repeats, related to a specific diagnosis and patient details. More detail for specific issues available through SAND studies.
<b>Best-practice care</b>	Limited
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Data are collected for a single encounter, so some capacity to investigate care in a cross-sectional manner. No follow-up or tracking of care cycles possible. Results of tests, and so on. not available. More detail for specific issues available through SAND studies.
<b>Patterns of care</b>	Some
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Records to whom referrals/orders were written, but results unknown.
<b>Patient perceptions</b>	Limited
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No regular information available from the patient perspective. This information may be gathered through SAND studies.
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No identifying information is collected; neither internal nor external linkage possible.
<b>Data quality</b>	Very good
Is the sample nationally representative?	Random sample of 1,000 GPs per year. Some under-representation of younger GPs. Annual data are weighted to account for this.
Are the data reliable?	Good evidence of reliability and completeness of data.
Are the data complete?	

## ALSWH

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	All females. Collects age, country of birth, marital status, education, employment status, income, Indigenous status.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	Yes
Is information about the patient's comorbid conditions available?	Collects data on presence of a wide variety of chronic and acute conditions.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	Limited
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	All cohorts report types of medications taken in the 4 weeks before the survey. Older and mid age cohorts have reported names of all medications taken. These are matched with PBS data.
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No information about specific treatment or management is available in the core surveys. Information about management of specific conditions is available through sub-studies.
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits available.
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Surveys have included SF-36, satisfaction with GP care, access to health care, stress, feelings about weight, mental health, life events, social interaction, control over own health, physical functioning.
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Yes, both internal and external linkage (to MBS, PBS, DVA and National Death Index) enabled.
<b>Data quality</b>	Very good
Is the sample nationally representative?	Total sample of 40,000 women. Broadly representative of women in relevant age groups. Some over-representation of tertiary-educated and English speaking women. Non-urban women deliberately over-sampled to allow comparisons.
Are the data reliable?	High completeness. Due to longitudinal nature of survey, missing responses are often able to be imputed.
Are the data complete?	Low frequency of non-logical responses to items over time.

## AusDiab

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, marital status, education, Indigenous status, country of birth, languages spoken at home, income, employment.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	Limited
Is information about the patient's comorbid conditions available?	Data on diabetes, heart disease, stroke, hypertension, high cholesterol, kidney problems.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	Limited
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Follow-up survey collected information on prescription medications taken, dose and strength.
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be recognised (ii) are the results of individual components of the cycle available?	Contains some information on cycle of care components for diabetes.
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits available.
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Collected SF-36 and patient's impression of their quality of life.
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Some linkage to the National Death Index (NDI)
<b>Data quality</b>	Good
Is the sample nationally representative?	Sample over 11,000 with biomedical data. Represents a national population 25 years and over who agreed to biomedical examinations. Younger age respondents under-represented, middle/ older age groups over-represented.
Are the data reliable?	Purpose designed for collecting diabetes data
Are the data complete?	Report includes those who participated in the questionnaires and biomedical tests providing better reliability, accuracy and completeness.

## NATSIHS

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, marital status, education, Indigenous status, main language spoken at home, income, employment.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	Yes
Is information about the patient's comorbid conditions available?	Collects data on various disease states.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Data only about whether medications were used
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No information about specific treatment or management is available
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits is available
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Collects data on self-rated health, mental health and reasons for not seeing a doctor when needed
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	Nationally representative of the Indigenous population, total sample 10,000.
Are the data reliable?	Self-reported nature of data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error. Good completeness.
Are the data complete?	

## National health survey

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, marital status, education, Indigenous status, country of birth, main language spoken at home, income, employment.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	Yes
Is information about the patient's comorbid conditions available?	Collects data on various disease states.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	Yes
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects names and types of medication for selected conditions
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No information about specific treatment or management is available
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits available
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Collects data on self-rated health, mental health and reasons for not seeing a doctor when needed
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	Nationally representative of the population, total sample 25,000.
Are the data reliable?	Self-reported nature of the data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error. Good completeness.
Are the data complete?	

## VPHS

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, marital status, education, Indigenous status, country of birth, main language spoken at home, income, employment.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	NHPAs only
Is information about the patient's comorbid conditions available?	Collects data on NHPA conditions
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	No medication data collected
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Limited data collected for asthma, diabetes, BP, cholesterol
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits available
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Self-rated health, mental health, satisfaction with care (not GP)
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	State-based CATI collection, general to Victoria but limited national representativeness. Total sample 7,500.
Are the data reliable?	Self-reported nature of data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error. Good completeness.
Are the data complete?	

## WA HWSS

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, marital status, education, Indigenous status, Australian born, income, employment.
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No information is collected about specific health service encounters.
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No, reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	Some
Is information about the patient's comorbid conditions available?	Collects data on NHPA conditions.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Data only about whether medications were used for BP or cholesterol
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Some data collected for BP, cholesterol. Influenza and pneumonia vaccinations (for 65 years and over)
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No information about contents of health-care visits available
<b>Patient perceptions</b>	Yes
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Self-rated health, QoL, mental health, control over own health
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	State-based CATI collection, general to WA but limited national representativeness.
Are the data reliable?	
Are the data complete?	Self-reported nature of data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error. Good completeness.

## MBS

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects name, sex, date of birth, geographical location
<b>Workforce information</b>	Minimal
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Service provider identified by individual code, may be possible to obtain detail
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Reports of health-care visits are not connected to a diagnosis/reason for attendance.
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No
<b>Clinical outcomes</b>	Limited
Can the treatment of a specific problem in an individual be followed over time?	Information only available via linkage. Diagnosis inferred only.
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	No
<b>Best-practice care</b>	Limited
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Where cycle or components of care result in claims
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Information not collected
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No information from the patient perspective is collected
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Internal linkage possible. May be linked with the PBS subject to legislation
<b>Data quality</b>	Excellent
Is the sample nationally representative?	Yes, essentially a 'census' although not all GP-patient encounters are captured.
Are the data reliable?	
Are the data complete?	Data considered very reliable. Excellent completeness.

## NPS GP survey

Criterion	Results
<b>Demographic information</b>	No
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	No data collected about the patient in this survey
<b>Workforce information</b>	Yes
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Some provider data collected
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No patient data collected
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No patient data collected
<b>Adherence to guidelines</b>	Some
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects data about GPs knowledge of the quality use of medicines
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No data collected
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No encounter data collected
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No data collected about the patient in this survey
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Unknown
Is the sample nationally representative?	No, under-representation of male GPs and those in the less than 35 age category and over-representation of GPs over the age of 45.
Are the data reliable?	
Are the data complete?	Data relate to GPs' knowledge and thus may not represent actual practice. Level of completeness unknown.

## NPS consumer survey

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, geographical location
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	No data collected about the provider in this survey
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	Collects data on various disease states.
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No encounter data collected
<b>Adherence to guidelines</b>	Some
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Data only about whether medications were used
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No data collected
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No encounter data collected
<b>Patient perceptions</b>	Some
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Data collected on self-rated health, attitudes to medicines, consumer awareness
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Unknown
Is the sample nationally representative?	Unknown.
Are the data reliable?	Accuracy of self-reported information about medication use is uncertain.
Are the data complete?	

## PBS

Criterion	Results
<b>Demographic information</b>	Some
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, geographical location
<b>Workforce information</b>	Minimal
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Service provider identified by individual code, may be possible to obtain detail
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No encounter data collected, but may be inferred by pattern of medications prescribed
<b>Clinical outcomes</b>	Limited
Can the treatment of a specific problem in an individual be followed over time?	No encounter data collected, but may be inferred for longitudinal analysis
<b>Adherence to guidelines</b>	Limited
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	No reason for prescribing recorded, but polypharmacy can be investigated
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No encounter data collected
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No encounter data collected
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No subjective patient data collected
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Internal linkage possible. May be linked with the MBS subject to legislation
<b>Data quality</b>	Excellent
Is the sample nationally representative?	Yes, although only includes data about medications where a government subsidy was paid (about 80% of all prescriptions).
Are the data reliable?	
Are the data complete?	Data considered very reliable and complete.

## PIP and SIP

Criterion	Results
<b>Demographic information</b>	No
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	No patient data collected
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collects some provider data for the purpose of claiming the incentive payments
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No encounter data collected
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No encounter data collected
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	No data collected on medications
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Some information collected when a PIP is claimed; for example, for a cycle of care
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No encounter data collected
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	Yes
Are the data reliable?	For the purpose of making an incentive payment claim the data are reliable.
Are the data complete?	

## RPBS

Criterion	Results
<b>Demographic information</b> Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Some Collects age, sex, geographical location
<b>Workforce information</b> Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Minimal Service provider identified by individual code, may be possible to obtain detail
<b>Problem managed</b> Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No No encounter data collected
<b>Comorbidities</b> Is information about the patient's comorbid conditions available?	No No encounter data collected, but may be inferred by pattern of medications prescribed
<b>Clinical outcomes</b> Can the treatment of a specific problem in an individual be followed over time?	Limited No encounter data collected, but may be inferred for longitudinal analysis
<b>Adherence to guidelines</b> Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Limited No reason for prescribing recorded, but polypharmacy can be investigated
<b>Best-practice care</b> Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No No encounter data collected
<b>Patterns of care</b> Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No No encounter data collected
<b>Patient perceptions</b> Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No No subjective patient data collected
<b>Potential for linkage</b> Does the database contain information to enable (i) internal linkage (ii) external linkage?	Yes Internal linkage possible. May be linked with the MBS subject to legislation
<b>Data quality</b> Is the sample nationally representative? Are the data reliable? Are the data complete?	Excellent Representative of war veterans and war widows. Data considered very reliable and complete.

## HIT

Criterion	Results
<b>Demographic information</b>	No
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	No patient data collected
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collected sex, age, country of training, practice location
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No encounter data collected
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No encounter data collected
<b>Adherence to guidelines</b>	Limited
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects data on whether an electronic prescribing tool was used and whether recorded reasons for prescribing
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	No encounter data collected
<b>Patterns of care</b>	Limited
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Some information collected on whether electronic referral was used by the GP
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Good
Is the sample nationally representative?	Broadly representative with over-sampling of non-urban GPs
Are the data reliable?	Self-reported data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error.
Are the data complete?	

## TAPS

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collected age, sex, Indigenous status, NESB
<b>Workforce information</b>	Minimal
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	RRMA group
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	No encounter data collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No encounter data collected
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No encounter data collected
<b>Adherence to guidelines</b>	Limited
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collected information about errors in general practice
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Assessed incidence of errors in the general practice environment
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	No encounter data collected
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Unknown
Is the sample nationally representative?	Regional data collection representative of GPs in NSW
Are the data reliable?	Self-reported data affects reliability and accuracy, as does the inherent nature of the survey in having sampling and non-sampling error
Are the data complete?	

## APCC

Criterion	Results
<b>Demographic information</b>	No
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	No patient data collected
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Practice postcode, number of GPs in practice, accreditation of practice, practice nurse, provider number
<b>Problem managed</b>	Some
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Collects encounter data about the problem/diagnosis, medication prescribed, pathology ordered
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	No data collected about the patient and any comorbidities
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	No patient data collected to enable follow-up
<b>Adherence to guidelines</b>	Some
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects some medication prescription data
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Collects encounter data for the purpose of benchmarking and developing and implementing practice improvements.
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Some pathology data collected to analyse chronic disease management
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Not currently, but may be linkable to other sources
<b>Data quality</b>	Fair
Is the sample nationally representative?	Small sample, lacks national representativeness
Are the data reliable?	Reliability checks are conducted
Are the data complete?	Good level of data completeness

## CONDUIT

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, postcode, cultural background, HCC status, Veterans' Affairs status and patient status to practice (i.e. new or seen before)
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collects age, sex; practice postcode, number of GPs in practice, practice nurse, provider number and bulk-billing status.
<b>Problem managed</b>	Yes
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Information collected about the problem/diagnosis, medication prescribed, pathology ordered and imaging ordered.
<b>Comorbidities</b>	Yes
Is information about the patient's comorbid conditions available?	Information can be linked
<b>Clinical outcomes</b>	Yes
Can the treatment of a specific problem in an individual be followed over time?	Information is recorded for repeated visits linked to the initial visit and problems/illnesses can be followed over time.
<b>Adherence to guidelines</b>	Yes
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects medication prescription data
<b>Best-practice care</b>	Potentially
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Data collected provides information that could be used to assess patient care
<b>Patterns of care</b>	Yes
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Referrals and procedures are recorded
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	Not currently, but there is the capacity to add to the collection
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Patient data can be linked to a practice, but may include information from more than one GP. External linkage with hospitals, pharmacies and other health-care services
<b>Data quality</b>	Fair
Is the sample nationally representative?	Small regional collection
Are the data reliable?	Lacks completeness
Are the data complete?	Accuracy checks conducted

## GPRN

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age, sex, HCC status, Veterans' Affairs status and Indigenous status
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collects age, sex, practice postcode, number of GPs in practice, number of years in practice, provider number and year of graduation.
<b>Problem managed</b>	Yes
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Data are collected on reason for visit, problem/diagnosis and medication prescribed
<b>Comorbidities</b>	Yes
Is information about the patient's comorbid conditions available?	Data are available when patient is treated by a participating GP
<b>Clinical outcomes</b>	Yes
Can the treatment of a specific problem in an individual be followed over time?	Information is recorded for repeated visits that are linked to the initial visit and problems/illnesses can be followed over time.
<b>Adherence to guidelines</b>	Yes
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects medicine name, dose, reason for prescribing, dosage and repeats
<b>Best-practice care</b>	Yes
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Collects patient medical record data
<b>Patterns of care</b>	Yes
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Data collected about pathology ordered, imaging ordered, referrals and procedures
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Internal linkage only. Patient data can be linked to a practice, but may include information from more than one GP
<b>Data quality</b>	Good
Is the sample nationally representative?	Representative of users of clinical software package Medical Director.
Are the data reliable?	May not be nationally representative. 400 GPs currently participating; cluster effect may be considerable.
Are the data complete?	Checks are conducted for accuracy
	Good level of data completeness

## MEDIC GP

Criterion	Results
<b>Demographic information</b>	Some
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Collects age and sex
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Collects age, sex, employment status (FT or PT)
<b>Problem managed</b>	Yes
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Collects data from the doctor–patient encounter
<b>Comorbidities</b>	Yes
Is information about the patient’s comorbid conditions available?	Collects clinical assessment data including comorbidities
<b>Clinical outcomes</b>	Yes
Can the treatment of a specific problem in an individual be followed over time?	Within the 10-year period of the life of the collection
<b>Adherence to guidelines</b>	Yes
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects data about medications prescribed, changes in medications or their regimen, procedures and treatment plans.
<b>Best-practice care</b>	Yes
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Collects patient medical record data
<b>Patterns of care</b>	Yes
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Collects information on pathology investigations and diagnostic imaging ordered and associated results, and specialist referrals
<b>Patient perceptions</b>	Some
Does the database contain any information about the patient’s quality of life, functioning, satisfaction with care or feelings about their own health?	Some information is collected about the patient perspective of the presenting problem and additional information relating to changes in health status
<b>Potential for linkage</b>	Yes
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Internal linkage only
<b>Data quality</b>	Fair
Is the sample nationally representative?	Small sample. Representative of patients in terms of age and gender.
Are the data reliable?	Reliability of the recorded diagnosis is under question
Are the data complete?	As patient medical record data, the accuracy and completeness is limited by what has been recorded by the GP

## ASPREN

Criterion	Results
<b>Demographic information</b>	Some
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Sex
<b>Workforce information</b>	Some
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Sex, practice postcode and number of GPs at the practice
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Only those cases reported include reasons for encounter, problem/diagnosis and pathology ordered
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	Comorbidities not collected with the reported case
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	Information is recorded for repeated visits for a patient, but does not link the problem within the record over time.
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	No medication data collected
<b>Best-practice care</b>	No
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	As a reporting collection, ASPREN does not collect information to assess the care of the patient.
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Pathology tests are recorded
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No subjective patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Fair
Is the sample nationally representative?	Low numbers of rural and regional participants. May not be nationally representative.
Are the data reliable?	No checks conducted to ensure accuracy or reliability
Are the data complete?	Good level of data completeness

## NT AHKPI

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Age, sex, Indigenous status, locality
<b>Workforce information</b>	No
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Some administrative data will be collected
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Actual encounter data not collected
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	Actual encounter data not collected
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	Actual encounter data not collected
<b>Adherence to guidelines</b>	No
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Actual encounter data not collected, but some medication indicators collected for the population
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Actual encounter data not collected, but some health-care indicators collected for the population
<b>Patterns of care</b>	No
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Actual encounter data not collected, but some tests data collected for the population
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No subjective patient data to be collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	No
<b>Data quality</b>	Unable to assess
Is the sample nationally representative?	Collection to commence in July 2008. Will cover Aboriginal Health Services in NT only.
Are the data reliable?	
Are the data complete?	

## PHA

Criterion	Results
<b>Demographic information</b>	Yes
Does the database contain basic demographic information about the patient? (age, sex, geographical location, Indigenous status)	Age, sex, postcode of residence, DVA card holder status, pensioner status and Indigenous status
<b>Workforce information</b>	Yes
Does the data set provide information about the service provider? (age, sex, specialty/occupation, FTE, location, Australian or overseas trained, after-hours availability, use of clinical software)	Sex, practice postcode, number of GPs at the practice, practice accreditation status, practice nurse, practice address, areas of special interest, opening hours and languages spoken by GPs
<b>Problem managed</b>	No
Can each encounter/prescription/service be connected with a diagnosis or problem managed?	Diagnostic data not connected to each encounter
<b>Comorbidities</b>	No
Is information about the patient's comorbid conditions available?	Data not available to link conditions
<b>Clinical outcomes</b>	No
Can the treatment of a specific problem in an individual be followed over time?	Information is recorded for repeat visits for a patient but does not link the problem within the record over time.
<b>Adherence to guidelines</b>	Some
Does the database provide information to examine use of medications? (medication name, dose, reason for prescribing, patient age and sex, number of medications taken, whether an electronic prescribing tool was used)	Collects data on medication prescribed and/or provided
<b>Best-practice care</b>	Some
Does the database provide information to assess best-practice care in patients with chronic illnesses? For example, for patients with diabetes: (i) can completion of an annual cycle of care be identified (ii) are the results of individual components of the cycle available?	Collects some data to measure health care in the practice and for business modelling purposes
<b>Patterns of care</b>	Some
Is information about referrals written and tests ordered in relation to an occasion of service available? (reason for referral, to whom referred, whether an electronic referral was used, results of tests/specialist consultation)	Collects data on pathology results, height, weight, blood pressure, foot/eye examination and date performed.
<b>Patient perceptions</b>	No
Does the database contain any information about the patient's quality of life, functioning, satisfaction with care or feelings about their own health?	No subjective patient data collected
<b>Potential for linkage</b>	No
Does the database contain information to enable (i) internal linkage (ii) external linkage?	Not for linking patient encounter data but is linked with Census and mapping data.
<b>Data quality</b>	Good
Is the sample nationally representative?	'Collection' is based on a single practice or group of practices, not intended to be more widely representative.
Are the data reliable?	Data are as entered within the clinical record system. Accuracy checks are conducted.
Are the data complete?	Low level of completeness

## Appendix 5: Electronic collections survey

### Australian Institute of Health and Welfare review of electronic general practice data collections in Australia - Questionnaire

<b>Project / collection name:</b>		
<b>Operating organisation:</b> (the name of the institution, organisation or group operating the data collection and managing the database)		
<b>Operating organisation is / was:</b> (the type of institution, organisation or group operating the data collection and managing the database)	<b>A GP division or group (yes/no)</b>	
	<b>An academic institution or group (yes/no)</b>	
	<b>A commercial organisation (yes/no)</b>	
	<b>A government organisation (yes/no)</b>	
<b>Contact details:</b> (Please provide the name and contact details of a person appropriate to be contacted for further information about the data collection)		
<b>Name of data set:</b> (if different from the Project name)		
<b>Purpose of data collection:</b> (i.e. what is the primary reason data are collected e.g. disease surveillance; quality audit; outcome measurement of change; general research of clinician and practice activity etc)		
<b>Who are data collected FROM?</b> (i.e. the population from which individuals are approached to provided data e.g. General practices; general practitioners (GPs); practice nurses etc):		
<b>Who are data collected ABOUT?</b> (i.e. what is the common characteristic or circumstance that determines inclusion into the database e.g. GPs; GP patients in a practice setting only; GP patients in all settings incl. home visits, residential aged care facilities, community health centres, ACCHS etc):		
<b>What time period does the database cover?</b> (Start date = month and year when data that are available and appropriate for analysis started to be collected, excluding pilot studies. End date = the date data collection ceased. Ongoing = data are still being collected since the start date)	<b>Start date (month &amp; year)</b>	___ / ___
	<b>End date (if data are no longer collected)</b>	___ / ___
	<b>Ongoing (yes/no)</b>	

<b>What design method of data collection is/was used?</b> (Periodic cross-sectional = recruitment of individuals for inclusion over set periods, with gaps in recruitment between periods e.g. three months repeated every year. Periodic longitudinal = follow-up of original participants for inclusion over set periods, with gaps in data collection between reporting periods e.g. three months repeated every year):	<b>Continuous cross-sectional (yes/no)</b>	
	<b>Continuous longitudinal (yes/no)</b>	
	<b>Periodic cross-sectional (yes/no)</b>	
	<b>Periodic longitudinal (yes/no)</b>	
	<b>One-off (yes/no)</b>	
	<b>Other method (please specify)</b>	
<b>What physical method is/was used to collect the data?</b>	<b>Paper-based survey (yes/no)</b>	
	<b>Manual extraction from clinical records (yes/no)</b>	
	<b>Extraction from electronic records (yes/no)</b>	
	<b>Internet hosted survey (yes/no)</b>	
	<b>Desktop-based survey tool (yes/no)</b>	
	<b>Other (please specify)</b>	
<b>Is/was the study approved/overseen by an Ethics body? (yes/no)</b>		
<b>If data are collected electronically or extracted from an electronic record, what types/brands of clinical software is/are used?</b>		
<b>What data extraction tool is used?</b>		
<b>Can the data collection tool be used with more than one type of software? (yes/no)</b>		
<b>If 'NO', what is the potential for the tool to be altered for future use with other types or brands of clinical software?</b>		
<b>In what format are data downloaded?</b> (i.e. free text; coded; encrypted; coded and encrypted etc)		
<b>Are the data linked to other data sources? (yes/no):</b> (e.g. Medicare; other research studies etc)		
<b>Could the data be linked to other data sources? (yes/no):</b> (e.g. Medicare; PBS; other research studies etc)		
<b>What size is the database currently?</b> (i.e. the number of individual GPs / patients / patient encounters / patients with specific condition etc, in the database that are available for analysis)	<b>GPs: (number)</b>	
	<b>Patients/encounters/visits (number)</b>	
	<b>Other (please specify below)</b>	
	_____ (number)	

<b>THE GP STUDY POPULATION</b>		
<b>Describe the GP study population</b> (e.g. is the study national, regional, Divisional etc?):		
<b>What type of sampling is used?</b> (e.g. random sample of all GPs; random sample of GPs using specific software; opportunistic sample of all GPs; opportunistic sample of GPs at specific settings etc):		
<b>How is GP participation / consent to participate decided?</b>	<b>Signed consent obtained for each period of participation (yes/no)</b>	
	<b>Signed consent obtained at first period of participation which includes subsequent episodes of participation (yes/no)</b>	
	<b>Verbal consent obtained for each period of participation (yes/no)</b>	
	<b>Verbal consent obtained at first period of participation which includes subsequent episodes of participation (yes/no)</b>	
	<b>Neither written nor verbal consent is obtained (yes/no)</b>	
<b>What is the level of participant consent?</b> (i.e. the level of information given to participants about how their data will be used, to which they have consented?)	<b>Participants were/are informed individually of data collection, the storage of data in a database and the uses of the data for particular purposes (yes/no)</b>	
	<b>Participants informed collectively of data collection, storage of data in a database and uses of data for particular purposes (yes/no)</b>	
	<b>Participants not informed explicitly of data collection, storage or uses (yes/no)</b>	
<b>Does the study include all types of GPs? (yes/no)</b> (If no, please specify which groups are included e.g. new graduates; VR GPs; non-VR GPs; OMPs; full-time GPs; part-time GPs; locums etc):		<b>If no, please specify:</b>
<b>GP participants can include ...</b>	<b>Individual GPs from a practice (yes/no)</b>	
	<b>Multiple GPs from a practice (yes/no)</b>	
	<b>All GPs from a practice (yes/no)</b>	

<p><b>To what extent is the participant sample representative of the GP population?</b> (i.e. the extent to which the sample population can be generalised to the reference population)</p>	No evidence or unlikely to be representative (yes/no)	
	Some evidence that eligible population is represented (yes/no)	
	Good evidence that eligible population is represented (yes/no)	
	Total eligible population included (yes/no)	
<p><b>What demographic or other characteristic information do you collect about the GP or the practice?</b> (e.g. age; sex; location of practice etc)</p>	No GP characteristics (yes/no)	
	Age (yes/no)	
	Sex (yes/no)	
	Practice postcode (yes/no)	
	No of GPs in practice (yes/no)	
	No of years in practice (yes/no)	
	Accreditation of practice (yes/no)	
	Practice nurse at practice (yes/no)	
	Bulk-billing status (yes/no)	
	Business model (i.e. solo GP, partnership, corporate owned etc) (yes/no)	
	Provider number (yes/no)	
Other characteristics (please specify)		
<p><b>Is there scope for additional information about the GP or practice to be collected in the future (yes/no)?</b></p>		
<p><b>Are individual GPs identifiable?</b> (Identifiable = individuals can be identified as one or more of the following are included: name; address; date of birth; provider number. Reversibly anonymised = individual identifiers have been removed or encrypted so that those using the data cannot identify individual GPs. A unique individual ID (either number or code) has been assigned by project management such that it is possible to reverse the anonymisation if required for data linking purposes. Irreversibly anonymised = No individual GP identifiers are stored on the database).</p>	Identifiable (yes/no)	
	Reversibly anonymised (yes/no)	
	Irreversibly anonymised (yes/no)	

<b>Are there any other characteristics of the study population that should be noted?</b>	
<b>THE PATIENT STUDY POPULATION</b>	
<b>Describe the patient study population</b> (i.e. all patients included; a sample of all patients; only patients with specific morbidity e.g. diabetes; only patients at ACCHSs etc?):	
<b>Patient participants include ...</b>	<b>Selected individual patients from a practice (yes/no)</b>
	<b>A designated number of consecutive patients from a practice (yes/no)</b>
	<b>All patients from a practice over a specified time period (yes/no)</b>
<b>How is patient participation / consent to participate decided?</b> (i.e. how is subject consent obtained?)	<b>Signed consent obtained for data to be recorded at each episode (yes/no)</b>
	<b>Signed consent obtained only at first participation but that includes subsequent episodes (yes/no)</b>
	<b>Verbal consent obtained - patients are given the option to opt-in and are <u>only</u> included if they choose to participate (yes/no)</b>
	<b>Verbal consent obtained - patients are given the option to opt-out and are included <u>unless</u> they choose <u>not</u> to participate (yes/no)</b>
	<b>Neither written or verbal consent obtained and patients are not given the option to opt-in or opt-out of the database (yes/no)</b>
<b>Are individual patients identifiable?</b> (Identifiable = individuals can be identified as one or more of the following are included: name; address; date of birth; provider number. Reversibly anonymised = individual identifiers have been removed or encrypted so that those using the data cannot identify individual patients. A unique individual ID (either number or code) has been assigned by project management such that it is possible to reverse the anonymisation if required for data linking purposes. Irreversibly anonymised = No individual patient identifiers are stored on the database).	<b>Identifiable (yes/no)</b>
	<b>Reversibly anonymised (yes/no)</b>
	<b>Irreversibly anonymised (yes/no)</b>

<p><b>What demographic or other characteristic information do you collect about the patient?</b> (e.g. age; sex; geographic location etc)</p>	Medicare Number (yes/no)	
	Age / date of birth (yes/no)	
	Sex (yes/no)	
	Postcode of residence (yes/no)	
	Cultural background (yes/no)	
	Health Care Card status (yes/no)	
	Vet's Affairs Card status (yes/no)	
	Practice nurse at practice (yes/no)	
	Patient status to the practice (i.e. seen previously by GP/s at the practice or a new patient to the practice) (yes/no)	
	Other characteristics (please specify)	
<p><b>Is there scope for other information about the patient to be collected in the future?</b> (yes/no)</p>		
<p><b>What information do you collect about the visit/consultation/encounter?</b> (Location = where the visit occurred e.g. at the practice; patient's home; aged care facility etc. Direct / indirect = whether a face-to-face meeting occurred between GP &amp; patient or no meeting occurred but a patient related service was provided e.g. case conference. Payer details = who paid for the service e.g. Medicare (bulk-billed); Medicare + patient; patient only; State (hospital, corrective services, community services etc); armed services; workers' compensation etc)</p>	Date of visit (yes/no)	
	Location (yes/no)	
	Start / finish time (yes/no)	
	Direct / indirect (yes/no)	
	Medicare item number/s (yes/no)	
	Payer details (yes/no)	
<p><b>Is there scope for additional information about the visit/encounter to be collected in the future?</b> (yes/no)</p>		

<b>THE PATIENT DATABASE</b>			
<b>What data elements are collected about the patient's visit? (If data elements are coded, please name the coding system used e.g. Docle, ICPC-2 PLUS etc)</b>	<b>Collected? (Yes/No)</b>	<b>Coded? (Yes/No)</b>	<b>Coding system used</b>
<b>Reasons for visit/encounter</b>			
<b>Problem/diagnosis</b>			
<b>Medication prescribed</b>			
<b>Medication provided</b>			
<b>Medication advised for purchase</b>			
<b>Pathology ordered</b>			
<b>Imaging ordered</b>			
<b>Referrals</b>			
<b>Procedures - diagnostic</b>			
<b>Procedures - therapeutic</b>			
<b>Administrative (e.g. medical certificate)</b>			
<b>Other</b>			
<b>Is there scope for other data elements to be collected in the future? (yes/no)</b>			
<b>Can the GP and patient data be linked?</b> (i.e. can data from a specific patient be linked to a specific GP)	<b>Patient data can be linked to a practice but may include information by more than one GP (yes/no)</b>		
	<b>Patient data can be linked to a single GP only (yes/no)</b>		
<b>To what extent can individual problem and its management be followed for each patient over time?</b> (i.e. linking of initial and subsequent visits so that progress of problem/illness can be observed):	<b>Information is recorded for single visit/encounter only (yes/no)</b>		
	<b>Information is recorded for repeated visits for a patient but does not link the problem within the record over time (yes/no)</b>		
	<b>Information is recorded for repeated visits that are linked to the initial visit and problems/illnesses can be followed over time (yes/no)</b>		
<b>What if the name of the problem/diagnosis changes over an episode?</b> (i.e. if the diagnosis label is initially a symptom which is later better defined e.g., headache, sore throat progress to diagnosis of strep infection; a headache progresses to diagnosis of migraine, then to brain tumor?)			

<b>DATA QUALITY</b>	
<b>How are the data collected by the GP?</b> (i.e. Computer or paper)	
<b>How are the data transferred to the analysing &amp; reporting body?</b> (i.e. posted; emailed; electronically transferred via internet etc)	
<b>If the data are coded:</b>	
<b>Who does the coding?</b> (GP/coder/other)	
<b>Have the people doing the coding been trained in coding?</b>	
<b>Is there any process in place for checking accuracy of coded data? (yes/no)</b> (Range = elements are not outside a realistic range e.g. and age of 160. Consistency = elements are consistent e.g. a post-natal check could not be performed on a male. Reliability = elements are recorded in a similar way by the same GP (intra-rater reliability) or by different GPs for the same information (inter-rater reliability))	<b>Ranges of elements are checked (yes/no)</b>
	<b>Consistency of data elements is checked (yes/no)</b>
	<b>Reliability is checked (yes/no)</b>
<b>How complete are the data?</b> (i.e. what percentage of variables are at least 95% complete – the total number of variables at least 95% complete is divided by the total number of variables in the database)	<b>Unknown of few (&lt;50%) (yes/no)</b>
	<b>Many (50–79%) (yes/no)</b>
	<b>Most (80–97%) (yes/no)</b>
	<b>All or almost all (&gt;97%) (yes/no)</b>
<b>Are any cleaning checks made of the data prior to releasing or reporting? (yes/no)</b>	
<b>DATA AVAILABILITY</b>	
<b>Are reports from the data provided to the GP participants? (yes/no)</b>	
<b>Are reports from the data provided to other parties? (yes/no)</b>	
<b>How often are data reported/released to other parties?</b>	<b>Annually (yes/no)</b>
	<b>Quarterly (yes/no)</b>
	<b>On request (yes/no)</b>
	<b>Other (please specify)</b>

Are the data available to the GP participants or other parties for audit, QI or research purposes?	Data not available to anyone outside collecting organisation (yes/no)		
	Analysis on request done by collecting organisation for participants only (yes/no)		
	Raw data available to participants only (yes/no)		
	Analysis on request done by collecting organisation for other parties (yes/no)		
	Raw data available to other parties for research (yes/no)		
If data are available, at what cost?	Free to participants only (yes/no)		
	Free to all parties (yes/no)		
	Flat fee (yes/no)		Please specify \$
	Fee determined on request (yes/no)		
Please provide contact details for access to data or analysis if relevant			
<b>OTHER COMMENTS</b>			
Please offer comments on any aspect of data collection you have trouble with or would like to see improved.			

Thank you very much for your participation in our review. Your assistance is greatly appreciated.

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