TOOLS FOR MEASURING CHANGE IN CHRONIC DISEASE MANAGEMENT IN PRIMARY CARE

Main messages

- Valid and reliable tools and instruments exist to measure organisational processes relevant to chronic disease management.

- The tools can be used by GPs, Divisions of General Practice, and other primary care practitioners and organisations as part of routine organisation change, and by researchers as part of specific evaluation or research projects.

- The use of appropriate tools can monitor progress and contribute to quality improvement and to the evidence base about ways to bring about change.

- Selection of the appropriate tool should be based on the specific aims of each intervention.

- The tools most likely to be relevant, valid and useful in Australian primary care are:
  - Assessment of Chronic Illness Care—evaluates utilisation of elements of the chronic care model.
  - Patient Assessment of Chronic Illness Care—assesses patient’s perception of the use of the chronic care model.
  - Primary Care Assessment Survey—captures patient perspectives on aspects of the doctor-patient relationship.
  - General Practice Assessment Questionnaire—covers access, interpersonal aspects of patient care and continuity of care.
  - Team Climate inventory—maps shared perceptions of team functioning.
Introduction

The Australian Government is strengthening the focus of Commonwealth and State health systems on both prevention and management of chronic disease through the National Chronic Disease Strategy (Commonwealth of Australia, 2005) and the Australian Better Health Initiative (Commonwealth of Australia, 2006).

Primary care practitioners and agencies involved in supporting and implementing primary care services are integral to the strategies proposed by the Australian Government.

Good systems and processes in primary care are essential for better management of chronic disease and reduction of lifestyle risk factors. Currently in many settings across Australia organisational review and quality improvement initiatives are taking place. For sustainability it is essential to demonstrate what difference these initiatives make. Appropriate and valid tools and methods can contribute to this.

This publication focuses on tools which primary care organisations, Divisions of General Practice and researchers can use for measuring systems and processes relevant to chronic disease management. The use of common validated tools can help them monitor progress, demonstrate changes, compare with other organisations and generalise their results. This can add to the evidence base about ways to improve organisational capacity to deliver quality care for patients and populations with chronic disease.

Background

Process is the collective term for all of the activities which occur within the health care system and as such, measures of process can be responsive indicators of the quality of that care. Some processes can be readily and accurately measured in a valid and reliable manner. It is important to recognize how the processes in a health care system fit together to form a sequence rather than to examine individual processes in isolation.

Process evaluation concerns what was done and what was not done, and also how well it was done.

Process evaluation can be used either within randomised controlled trials or in other research or evaluation designs to (Oakley et al, 2006):

- examine the views of participants about an intervention
- study how an intervention is implemented
- distinguish between components of an intervention
- investigate contextual factors that affect an intervention.

It is only useful to measure process if there is evidence linking the process to outcomes in the context being studied. There are varying levels of evidence around some of the process topics detailed in this issue. It should also be noted that many of the definitions of processes are widely debated in the literature and that while we may have a general understanding of what is meant by terms such as collaboration, others may have a different understanding or perspective.

Measuring organisational functions and processes

Some valid and reliable tools exist for assessing organisational functions and processes in health care. By tools we mean models, approaches to bringing about change, and survey instruments which have been designed to capture key components in a valid and reliable way. Some of these tools have been developed and/or used in Australia. The tools can be useful and practical for organisations to identify where problems and gaps exist, and to monitor progress over time in addressing the problems. This fits with the advice by Dr Dale Ford from the National Primary Care Collaborative to ‘measure what you want to change’. They can be used to compare organisations.

This paper outlines the approaches, models and survey instruments most relevant in the following areas:

- Quality and organisation of chronic illness care
- Chronic care management approaches
- Continuity of care
- Team work and team climate.
The Multi Method Assessment Process (MAP) is a tool used to describe multiple aspects of primary care practice. It assumes that general practices are complex organisations and it helps practices find novel solutions to problems of quality service delivery. Most importantly, it can be used to evaluate practice characteristics that are related to preventative service delivery (Rhydderch et al, 2005). MAP is based on a multi method comparative case study design that incorporates elements of epidemiology with qualitative methods from the areas of anthropology and sociology. It utilises observation and interview as the main methods (Crabtree et al, 2001).

The MAP is used to answer:

• How does the organisational context support effective preventative practices?
• What are the competing demands imposed by carrying out prevention activities and clinical management activities?

Researchers undertake the assessment and the practice team interpret the results. Evaluation is conducted on those aspects of the practice, the community, practice staff and patients that the team feel are important (Rhydderch et al, 2005).

Traditional approaches to establishing reliability and validity are not appropriate for the MAP as it uses intense observation of the practice environment and patient care (Rhydderch et al, 2005; Crabtree et al, 2001).

Whilst this type of process may allow understanding of a practice or organisation from multiple perspectives, like a lot of qualitative work it is very labour intensive.

### 1.2 Breakthrough Series

The Breakthrough Series (BTS) involves the establishment of a short-term collaborative to share knowledge between organisations. Collaboratives usually last between 6 and 15 months. This approach is useful when organisations wish to determine how they can improve the quality of their service provision while also reducing costs. The BTS to address chronic illness are linked with the Chronic Care Model (CCM) and the Assessment of Chronic Illness Care (ACIC).

The Institute of HealthCare Improvement (IHI) in the USA developed the Breakthrough Series (BTS) to assist health care organisations to improve quality and reduce costs. The main aim is to use the knowledge that we have to affect what we do. During a short-term ‘Collaborative’, knowledge is shared between organisations and also gained from experts in relevant fields (Institute for HealthCare Improvement, 2004). A ‘Collaborative’ is an improvement method that relies on the distribution and adaptation of existing knowledge to

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**1 Quality and organisation of chronic illness care**

In the past, the management of people with chronic illness was seen as an individual clinical issue, usually in response to the patient presenting with acute exacerbation of a symptom. The National Chronic Disease Strategy (Commonwealth of Australia, 2005) recommends a more proactive clinical approach, with planned systematic care and measurement of symptom control to assess the quality of diagnostic and management approaches of people with chronic illness. A population health approach has lately been favoured with a focus on modifying lifestyle risk behaviours and patient self management. High quality care, which offers early detection and management of people with a chronic illness (Centre for General Practice Integration Studies, 2005) requires organisations to have appropriate systems and processes to support competent well trained health professionals.

A number of instruments relevant to systems of care for chronic illness are already in use in Australia as part of the quest for improved chronic care delivery. However it is not yet known which specific organisational systems are the most important for improving the care of the chronically ill in different Australian contexts (Centre for General Practice Integration Studies, 2005).

Two approaches, one model and one instrument are presented here, with brief descriptions of some other approaches:

- Multi Method Assessment Process
- Breakthrough Series
- The Chronic Care Model
- The Assessment of Chronic Illness Care
- Other mapping approaches.

### 1.1 Multi Method Assessment Process

The Multi Method Assessment Process (MAP) facilitates the description and analysis of a practice or organisation by examining its components. MAP uses a qualitative methodology and while very useful, it is labour intensive.

Before we can begin to change practice or organisational systems, we must first ensure that we understand the complexities of what happens in that practice or organisation.

An understanding of practice systems requires details of patient characteristics, providers, other staff, clinical encounters and the practice as an organisation as well as its relationship to other organisations.
FOCUS on... multiple settings to achieve a common aim (http://www.npcc.com.au).

Key components of the BTS include (Figure 1):

- identification of a health issue or topic where improvement is sought
- recruitment of experts in the relevant discipline
- enrolment of participating organisations and teams through an application process
- face-to-face learning sessions
- testing and implementation of changes at a local level with data collection to measure the impact of the changes
- application of the Model for Improvement where teams determine what the aim of the BTS is, what they will measure, and what changes will lead to improvements.
- presentation and publication of results
- measurement and evaluation.

Figure 1: Institute for HealthCare Improvement Break Through Series model (Institute for HealthCare Improvement, 2004)

Since its inception in 1995, IHI has sponsored over 50 Collaboratives, involving more than 2,000 teams from around 1,000 different health organisations. The Collaborative can contain any number of teams, with each team usually sending three of its members to attend a series of face-to-face learning sessions with the other teams. The Australian National Primary Care Collaborative commenced in 2005. Information can be found at http://www.npcc.com.au

IHI trains individuals and organisations on how to conduct their own collaboratives. More recently, IHI formed IMPACT, a network of organisations that collaborate to bring about system change. IMPACT uses the same methods as the BTS but for an indefinite period of time covering multiple topics. Information about the BTS can be obtained from Baker (1997) or http://www.rand.org/health/ICICE

To date, BTS results have included a 50% reduction in waiting times, 25% reduction in worker absenteeism, 25% reductions in operating costs and a 50% reduction in hospitalisation for congestive cardiac failure patients (Institute for HealthCare Improvement, 2004).

While the Collaboratives have appealing face validity, there are few controlled studies of their effectiveness. Despite this, the approach has spread around the world, perhaps due to the absence of alternative ‘industrial-strength’ quality improvement methods. There is a need for further investigation of the determinants of successful collaboratives (Cretin et al, 2004).

A number of health care organisation instruments have been developed by RAND Health to evaluate BTS collaboratives. The surveys examine leadership, management, team members, key players and organisational characteristics. All of the instruments are freely available from http://www.rand.org/health/projects/icice/tools.html (RAND Health, 2005).

1.3 The Chronic Care Model

The Chronic Care Model (CCM) has been accepted by researchers interested in improving chronic illness care as a framework for essential core components of chronic care. It has been combined with the BTS to produce an evidence-based package to measure change in chronic illness management, but can be used independently of BTS.

The Chronic Care Model (CCM) focuses on changing the approach to chronic care from care that is reactive and acute-oriented, to care that is proactive, population-based and patient-centred (Glasgow et al, 2005). The model was developed by Ed Wagner at the MacColl Institute...
The CCM involves redesigning processes and improving service coordination across chronic conditions, service providers and practice settings. The model is intended to achieve productive interactions between informed activated patients and a prepared proactive practice team, and also aims to improve practice efficiency, patient access and patient safety. The model can be used with any of the chronic conditions and in a variety of health care settings (Shortell et al 2004; MacColl Institute for Healthcare Innovation, 2006).

The model’s six key dimensions are:

- organisation of health systems
- clinical information systems
- delivery system design
- decision support
- self-management support
- community resources.

In 2003 the Chronic Care Model was updated and five new themes were incorporated within the six dimensions:

- patient safety
- cultural competency
- care coordination
- community policies
- case management.

The new version is called The Care Model (MacColl Institute for HealthCare Innovation, 2006) and differs from the CCM through the inclusion of:

- six aims as criteria for high quality services
- change concepts addressing staff development, cultural competency, care coordination and patient safety.

There have been numerous trials of interventions that have utilised some of the elements of CCM. These have been found to improve clinical outcomes and processes as well as quality of life for patients (Tsai et al 2005). Although the CCM is evidence-based, it has not been evaluated in its entirety in controlled studies. Wagner emphasises that all six components are essential, and focusing on only one or two components is unlikely to lead to effective models of care (Cretin et al, 2004; RAND Health, 2005).

Data have been recently collected on the CCM as a whole, to establish if generated change leads to better process and outcomes (Cretin et al 2004). All materials required to use the CCM are available free of charge from http://www.improvingchroniccare.org (MacColl Institute for Healthcare Innovation, 2006).

1.4 The Assessment of Chronic Illness Care

The Assessment of Chronic Illness Care (ACIC) can be used to evaluate the extent to which health care providers are routinely utilising elements of the CCM.

The Assessment of Chronic Illness Care (ACIC) is one of the first tools to focus specifically on organisation of care rather than outcome measures, process indicators or productivity measures (Bonomi et al, 2002). It is a quality improvement tool which assesses the extent to which health care providers are routinely utilizing elements of the CCM (Glasgow et al, 2005). Using this tool, organisations taking part in the Breakthrough Series are able to determine the strengths and weaknesses of care delivery in each of the six CCM areas. The tool is the result of combining the CCM with the BTS to produce an evidence-based package to measure change in chronic illness management.

The ACIC is a 28 item questionnaire that takes around 15-30 minutes to complete, and is freely available from Bonomi et al (2002).

The ACIC is used before beginning any quality improvement project and after completion of the project to assess improvements that have been made. Typically, each team member of participating organisations completes the questionnaire both pre and post a collaborative based on CCM. A consensus format is used to produce an average rating of their organisation’s approach to delivering care for the targeted chronic condition (Bonomi et al, 2002).

The ACIC Version 3 domains cover:

- organisation of care leadership
- linkages to community resources/ community-based self management programs
- self-management support; integration of self management into routine care
- decision support linkages between primary and specialty care
- delivery system design; use of telephone follow up and reminders
- clinical information systems; chronic illness registry
- integration of Chronic Care Model; use of data and input from teams to plan population based care.

Responses to each item of the ACIC range across four levels of implementation of an intervention. Within each level, respondents are asked to choose one of three ratings resulting in a 0 - 11 scale:
• 0-2 little or no support for chronic illness care
• 3-5 basic or intermediate support
• 6-8 advanced support
• 9-11 optimal support, or comprehensive, integrated care.

One of the advantages of the ACIC is that teams have a benchmark score of what constitutes best practice for chronic illness care, the best being a score of 11 (Bonomi et al, 2002).

Version 3.5 of the ACIC includes the same six sub scales as Version 3, plus six additional items that address how well a practice team or organisation integrates the Chronic Care Model elements - so, for example, whether guidelines are used to inform self-management programs for patients or whether registries are used to perform care functions like routine follow-up. Example items of the ACIC are contained in Figure 2.

**Figure 2: Examples from the Assessment of Chronic Illness Care (ACIC) (Bethell, 2000)**

<table>
<thead>
<tr>
<th>How often does your organisation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Set and review measurable goals for chronic illness care</td>
</tr>
<tr>
<td>• Incorporate goals for chronic illness care into business or quality improvement plans</td>
</tr>
<tr>
<td>• Have visible participation of senior leaders in improvement efforts around chronic illness care</td>
</tr>
<tr>
<td>• Develop formal agreements with community service agencies to enhance services for chronically ill patients</td>
</tr>
<tr>
<td>• Assess patient self-management needs by questionnaire</td>
</tr>
<tr>
<td>• Emphasize patients’ active and central role in managing their illness</td>
</tr>
<tr>
<td>• Use interventions to address the psychosocial and emotional needs of chronically ill patients</td>
</tr>
</tbody>
</table>

(Response options: not at all, sometimes, quite a bit, often, almost always)

**Examples of use in Australia**

The use of the ACIC is an integral part of the Audit and Best Practice in Chronic Disease Project (ABCD) which is being conducted by Professor Ross Bailie and colleagues at Menzies School of Health Research, Northern Territory. The ABCD project examines the impact of systems upon the quality of chronic disease clinical care within an organisation. It was implemented on the expectation that staff and managers of community health practices would benefit from an improved understanding of the systems they were using so that they could better plan for improvement. The scale has been adapted for use in the Northern Territory to facilitate its use in the local setting.

The adapted scale contains 34 items with the difference from the original ACIC scale being the inclusion of three additional items covering cultural competence, pathology management, and pharmacy management under the clinical delivery system domain. The adapted scale (Systems Assessment Tool) better reflects areas of particular relevance to services in the NT (Si et al, 2005).

To date, the ABCD project has resulted in enhanced performance in the process of diabetes care through community linkages and improved intermediate outcomes associated with delivery system design (Si et al, 2005).

More recently, the Systems Assessment Tool has been adapted for use in quality improvement activities aimed at Aboriginal and Torres Strait Islander maternal and child health. The researchers expect that with minor adaptations, this tool will be appropriate for many other settings. For more information about this scale or the Systems Assessment Tool, contact Michelle Dowden or Ross Bailie at Menzies School of Health Research (2006).

One of the Sharing Health Care Chronic Disease Self Management demonstration projects conducted by the Whitehorse Community Health Service and the Whitehorse Division of General Practice focussed on the systems of change required to entrench self management approaches into practice. The CCM was used to drive the system change and the ACIC was used to evaluate the level and nature of organisational improvements (Kelly & Azzopardi, 2005).
1.5 Other mapping approaches

A number of different mapping techniques have recently been used in primary health care research. Each is worthy of a publication of their own and for this reason, only a brief outline is given here.

**Process mapping** is a qualitative methodology developed in the field of engineering that utilises the experiences of people working in the field. It involves the collection of data and information about processes or activities within a project or an organisation (NSW Health, 2002).

It might include collecting data on such things as:

- inputs, throughputs and outputs in activities or processes
- the people involved including patients, doctors, practice staff, other members of primary care team
- the technology used including patient records and practice equipment
- physical resources in the practice.

Process mapping was used by NSW Health to improve access for Emergency Department patients and to reduce surgical waiting lists by increasing throughput and efficiency (NSW Health, 2002). It has been used at the Alfred hospital in Victoria to develop an anticoagulant safety strategy (Lubliner et al, 2005) and in Queensland hospitals to examine sterilization procedures (Wigg, 2003). At an Aged Care forum in Adelaide in June 2002, one GP from Adelaide North Eastern Division of GP described the use of process mapping in 2003, as the first stage in a project looking at prescribing and medication use in residential aged care facilities.

**Concept Mapping** uses nominal or focus group techniques to develop a conceptual framework. For example, concept mapping was used by a team at the University of Melbourne to generate a GP Integration Index. The outcome is a graphic or pictorial product which illustrates the main ideas and their interrelationships. Ideas or statements are generated and the interrelationships between them are defined. Multi-variate statistical techniques are then applied to the information and the results are illustrated in the form of a map (Batterham et al, 2002).

Concept mapping is designed to follow a series of structured steps so that it is a stronger methodological approach than focus groups or in-depth interviews. Difficulties in using this approach are that it is resource intensive and there can be major participant burden (Burke et al, 2005).

**Value Stream Mapping** was developed for the manufacturing industry and provides a common language for understanding any process. It is used to form the basis of an implementation plan by visualising the entire system or process including the linkages between information and activities. Value stream mapping is a qualitative methodology for improving flow and reducing wasteful processes (Rother & Shook, 2003).

The important concept here is an appreciation that each of the individual parts (processes) contributes to the whole (system). Value-stream mapping has been used at Flinders Medical Centre in Adelaide over the past three years as part of a system-wide ‘redesigning care’ project using ‘lean thinking’ concepts (Flinders Medical Centre, 2004).

**Patient Care Mapping** maps the individual journey of patients which can reveal mechanisms within systems that impact upon the patients. There are a number of different methods for tracking patient progress through organisations or health systems, identifying problems and making changes to reduce delays or errors (Health Evidence Network, 2005).

See Table 1 on page 16 for Summary of approaches and tools to measure Quality and Organisation of Chronic Illness Care.

## 2 Chronic care management approaches

Patient self management, patient centred care, collaboration between service providers and integration of services are all relevant to the management of patients with a chronic condition. Measurement as part of change is therefore potentially important.

**Patient self management** of chronic disease is important for optimal disease management and improved quality of life. One of the integral components of patient self management is the use of the patient centred approach in provider patient interactions and relationships.

**Patient centred care** is an important component of preventive care as the patient is responsible for their own lifestyle change. It is also fundamental to management of people with a chronic condition and it helps people make choices that can maximize the quality of their life.

As patients with chronic conditions tend to have more than one health care provider, effective collaboration between providers is necessary to ensure optimum management of the condition within the health care team. Various terms are used to denote the process of collaboration including cooperation, coordination, network, alliance and partnership. Collaboration has been
defined as a positive form of working with others to attain mutual benefit (Jones et al, 2004).

Collaboration requires that the individuals concerned see themselves as a team working towards a common goal. Effective communication and shared decision making is essential to useful collaboration. There should also be a willingness to share ideas and resources as well as accountability of outcomes (Chaboyer & Patterson, 2001; Brinkerhoff, 2002).

Those wishing to evaluate collaboration are encouraged to consider the following questions (El Ansari et al, 2001).

- Should the evaluation be conducted at the macro (system) or micro (individual patient) level?
- Should the indicators of effectiveness of the outcomes of the collaboration be immediate (proximal) or longer term (distal)?
- Should the effects be measured in the short or long term? What is the relationship between these effects?
- Should the outcomes be assessed individually or collectively?

One of the other keys to improving the management of chronic illness is the integration of care across the primary and acute care settings, as many patients require care in both settings (Laurence et al, 2004).

A number of tools relevant to these chronic disease management approaches are presented in this issue of FOCUS on... including the:

- Patient Assessment of Chronic Illness Care
- Patient Activation Measure / The Patient Self Activation Scale
- Primary Care Provider Questionnaire
- Primary Care Assessment Survey
- Primary Care Assessment Tool
- GP Integration Index.

### 2.1 The Patient Assessment of Chronic Illness Care

The Patient Assessment of Chronic Illness Care (PACIC) is a 20-item patient self report instrument. This type of assessment allows an understanding of the patient’s perspective and a check against the perspective of providers. The PACIC is based on the CCM elements and examines patient reports of their care over the previous six months to assess the level of patient centredness and self management support. Amongst other things it includes the patient’s assessment of collaborative goal setting and problem solving. Patients are asked to rate each item on a five-point scale with 1 being no or never and 5 being yes or always (Glasgow et al, 2005).

The PACIC complements the ACIC, providing corresponding chronic illness patient and provider assessments of important aspects of care.

Preliminary work has been undertaken on determining the reliability and validity of the PACIC. Research has established that the PACIC and its scales correlate moderately with predicted measures demonstrating its construct validity. It appears that the PACIC can be used for various chronic diseases and across differing patient demographic variables (Glasgow et al, 2005).

The PACIC is available free of charge at [http://improvingchroniccare.org/tools/pacic.htm](http://improvingchroniccare.org/tools/pacic.htm). It is not known if it is being used in Australian primary care.

### 2.2 The Patient Activation Measure

The Patient Activation Measure (PAM) - sometimes referred to as the Patient Self Activation Scale - examines the extent to which patients feel able to take responsibility for their own care.

The Patient Activation Measure (PAM) is based on a conceptual definition that patients who are activated believe they have an important role to play in self management, they know how to manage their condition and maintain their health.
and they have the skills to do so. They also have the skills and behaviours required to collaborate with health providers and access appropriate care (Hibbard et al, 2004). This tool verges on clinical evaluation rather than organisational but is presented here given the current emphasis on patient self management in the Better Health Initiative. The scale may be used to determine if organisational processes are supporting self management practices.

The PAM (Hibbard et al, 2004) is a valid and reliable 22 item scale that examines a model of activation involving four stages:

- a belief in the importance of the patient role
- the confidence and knowledge to take action
- taking action to maintain and improve own health
- remaining determined to do so even under stress.

The PAM examines the extent to which patients feel able to take responsibility for their own care (Glasgow et al, 2005). The scale determines the patients’ confidence with self management and their ability to collaborate with health care providers. Testing of the PAM has shown a high level of reliability, construct and criterion validity. Research is currently underway to determine predictive validity and the tools sensitivity to detect change in behaviour (Hibbard et al, 2004).

Recently a shortened 13 item scale has been developed that, while reliable and valid, demonstrates loss of precision in some of the sub groups (Hibbard et al, 2005). Both are available free of charge upon registration with the University of Oregon at http://www.uoregon.edu

While it is not known whether the PAM is being used in Australia, it could be used by Divisions of General Practice, other organisations and researchers to assess projects designed to increase consumer engagement and activation.

2.3 The Primary Care Provider Questionnaire

The Primary Care Provider Questionnaire (PCP) measures ambulatory patient satisfaction with their primary care doctor.

The PCP also assesses patient satisfaction with their access to care and the GPs’ interpersonal skills and perceived technical quality, as well as the patient’s overall satisfaction. The PCP contains 22 statements of opinion for rating on a 5-point Likert scale (Bidault-Russell et al, 2002).

Bidault-Russell et al (2002) state a need for qualitative questions to be used to complement the PCP to determine details of patient preference.

2.4 Primary Care Assessment Survey

Both the Primary Care Assessment Survey (PCAS) and the Primary Care Assessment Tool (PCAT) capture patient perspectives on the strength of the relationship with the doctor, determined from both patient and doctor surveys. As both tools require the patient to complete a questionnaire, there is some burden on the patient and the tools may be resource intensive to administer (Reid et al, 2002). The PCAT is increasingly being seen as a valid measurement of organisational aspects of general practice.

The Primary Care Assessment Survey (PCAS) is a 51 item validated tool that is widely used to measure a variety of outcomes. Subscales of the survey measure aspects of the doctor patient relationship, including the doctor’s knowledge of the patient, communication with the patient, interpersonal management and trust (Safran et al, 1998). Each of the concepts are measured in the context of the overall doctor patient relationship and are not specific to any particular consultation (Medical Outcomes Trust, 2001). Survey of both the patient and the provider is required. Figure 3 shows an example from PCAS.

The PCAS measures seven essential aspects of care:

- accessibility – organisational, financial
- continuity – longitudinal, visit-based
- comprehensiveness – contextual knowledge of patient, preventive counselling
- integration
- clinical interaction (communication, thoroughness)
- interpersonal interactions
- trust.

In the last ten years, the PCAS has been widely used in primary care research, including studies that link primary care performance to outcomes of care (Tufts—New England Medical Centre, 2006). The survey requires an age ten reading level. PCAS is freely available upon registration through http://www.tufts-nemc.org/ichps/programs/default.asp The Ambulatory Care Experience Survey (PCP-ACES) is a 47 item survey that is a refinement of the PCAS. It was developed to align with the CCM components (Glasgow et al, 2005).
Examples of use in Australia

The PCAS is being adapted for use in Australia by the Departments of General Practice at the University of Melbourne and Monash University and will be used to measure continuity and coordination of care, GP integration and the quality of primary care service delivery in a Beyond Blue project. The Diagnosis, Management and Outcomes of Depression in Primary Care (DIAMOND) study will document and map the care pathways of people experiencing depression who present to GPs in Victoria (The General Practice Psychiatry Program Research Group, 2006).

2.5 Primary Care Assessment Tool

The Primary Care Assessment Tool (PCAT) is designed to measure the quality of care provided by general practices.

The PCAT contains questions for the patient and the provider related to the extent of the knowledge of the patient by the doctor, the adequacy of doctor/patient communication and the patient level of comfort (Shi et al, 2001). The PCAT is usually administered by postal survey.

Aspects of the organisation that are assessed are based on the principles of primary care (Rhydderch et al, 2005):

- accessibility
- longitudinality
- comprehensiveness of available services
- comprehensiveness of provided services
- coordination and integration of care
- coordination of medical records
- family centredness
- community orientation
- cultural competence.

The PCAT is able to be administered by practice staff and has good psychometric properties. There are both adult and paediatric versions and both versions are freely available from John Hopkins University (The General Practice Psychiatry Program Research Group, 2006).

2.6 GP Integration Index

The GP Integration Index, developed by the University of Melbourne, is designed for use in Australian primary care settings (Batterham et al, 2002).

Integration is a dynamic phenomenon that must first be defined prior to being able to measure such a concept. Southern et al (2005) undertook this task using the technique of concept mapping as a step towards development of a GP Integration Index.

The resulting Index is a model of 50 items measuring nine integration process factors and 20 items measuring five enabling factors. Each factor is scored from 1 – 5 on Likert scales. Testing of the Index has demonstrated strong psychometric properties and reliability and validity are acceptable at this early stage of development. Whilst further testing is required, the indices have immediate use in Australian primary care settings. It can be used to compare levels of GP integration between groups of GPs (Batterham et al, 2002).
The integration factors include:

- holistic patient care
- GP flexibility
- patient information
- attitude to teamwork
- liaison
- non-hospital care coordination
- hospital role
- community health
- health planning.

Examples of use in Australia

The Index is currently being used by the Universities of Melbourne and Monash in partnership with Beyond Blue to measure GP integration factors through self report of GPs involved in the DIAMOND study (The General Practice Psychiatry Program Research Group, 2006).

See Table 2 on page 17 for Summary of tools to measure Chronic Care Management Approaches.

3 Continuity of care

Background

A sustained relationship between doctor and patient over time has traditionally been considered a fundamental component of general practice and primary care. Definitions of 'continuity of care' vary considerably despite a widespread belief that it has a consistent and well-understood meaning. The literature covers three domains of focus (Helleso & Lorensen, 2005):

- person to person
- intra-organisational
- across health care organisations.

Geyman, Hansen, Hennen and McWhinney first explored this concept in a systematic manner in 1975 (Sturmberg, 2003). They listed the important aspects of continuity of care as:

- first contact care
- ongoing and longitudinal relationship between provider and patient with resulting ‘contractual’ responsibilities and a two-way gaining of knowledge
- appropriate integrated care that was patient centred
- the family as the unit of care.

The Canadian Health Services Research Foundation (Reid et al, 2002) state that agreed understanding of a definition of continuity of care is critical prior to measurement. They suggest three concepts of continuity of care:

- Informational continuity occurs if information on prior events is utilised to provide appropriate care in the patient’s current circumstance. This includes transfer of information and accumulated knowledge of the patient.
- Relational continuity recognizes the importance of holistic knowledge of the patient and requires an ongoing relationship between patients and providers, and consistency of personnel.
- Management continuity occurs if care received from different providers is connected in a consistent but flexible way.

Benefits

Some evidence exists that this aspect of care provision leads to improved management of chronic disease and greater use of preventative screening (Fan et al, 2005). Conversely, lack of continuity of care has been shown to be associated with more emergency hospitalisations and increased hospital stays (Wasson et al, 1984).

General agreement exists that there is value for providers in continuity of care as, without it, their work may be fragmented, they may be confused about their roles, and duplication may occur. Continuity of care relies on good communication and seamless movement between providers (Taylor & Cameron, 1999). However the value patients place on continuity of care varies enormously and appears to depend on patient characteristics such as age and health status. Older patients of lower health status place a higher value on continuity of care (Fan et al, 2005).

Measurement

A systematic review of the nursing literature on continuity of care (Sparbel & Anderson, 2000) found a limited number of established instruments used in continuity of care research. The majority of established tools were from other disciplines such as social work. Continuity was inferred through the measurement of related or tangential concepts, rather than tools being used to measure continuity of care directly.

Four tools are described that can be used to measure continuity of care:

1. The Diabetes Continuity of Care Scale (DCCS) focuses on the patient’s perception of continuity of care which is more than seeing one usual provider (Dolovich et al, 2004).
2. The Utilisation of Primary Care Index (UPC) is highly correlated with the Continuity of Care (COC) index but is simpler to calculate (Reid et al, 2002).
The Referral Data Inventory (RDI) is a tool to describe the amount and type of information that nurses exchange as a measure of continuity of care across disciplines. The tool focuses on communication methods, barriers, attitudes and the content of the information that is exchanged (Reid et al, 2002; The General Practice Psychiatry Program Research Group, 2006).

The General Practice Assessment Questionnaire (GPAQ) is an English questionnaire administered to general practice patients after seeing a GP or a practice nurse (http://www.gpaq.info).

3.1. Diabetes Continuity of Care Scale

The Diabetes Continuity of Care Scale (DCCS) (Dolovich et al, 2004) focuses on the patient’s perception of continuity of care which reaches beyond the domain of seeing one usual provider.

The DCCS is a 47 item scale that examines the patient’s perception of four areas:

1. relationships and transfer of information among providers
2. relationships and transfer of information between providers and patient
3. patient access to the healthcare system
4. patient maintenance of beneficial lifestyle practices outside of the healthcare system.

These domains may be generalisable to other chronic conditions though this has not yet been tested.

Preliminary testing of the DCCS has shown it to have internal consistency, test-retest reliability and moderate construct validity. The Scale is able to differentiate between patients who do and who do not attain specific process and clinical indicators of good care (Dolovich et al, 2004).

The DCCS is available upon request from McMaster’s University (Dolovich et al, 2004). Its use in Australia is unknown.

3.2 Utilisation of Primary Care Index

The Utilization of Primary Care Index (UPC) measures the proportion of visits to a usual provider over a period of time.

Whilst it is believed to measure the strength of the relationship to the usual provider, there is limited evidence to support this. Advantages of this measure are its wide use and ease of application, it is relatively simple to calculate.

The ‘usual provider’ is determined as either:

- the patient’s preferred provider
- the provider identified on patient files
- the provider seen most frequently as identified through billing data

The UPC has been widely used in primary care and variations to the index have also been used in mental health care, primary care nursing and cancer care (Reid et al, 2002). Its use in Australia is unknown.

3.3 Referral Data Inventory

The Referral Data Inventory (RDI) is a tool to describe the amount and type of information that nurses exchange.

The tool focuses on communication methods, barriers, attitudes and information content (Helleso & Lorensen, 2005). Transfer documents are used to obtain the necessary information and so it may underestimate the completeness of information transfer as some information may be transferred verbally (Anderson & Helms, 1995).

The scale contains 40 items grouped into four categories (Reid et al, 2002; Anderson & Helms, 1995):

- Background – demographics, referral source
- Psychosocial – psychological status, social history, consent and teaching requirements
- Medical - medical problems, medical instructions, details of doctor
- Nursing – Activities of Daily Living (ADL), functional capacity, continuity of patient care (discharge summary and care plan)
The amount of data exchanged is reflected as a score between zero and 40. The greater the number of items included in the referral, the higher the score. Sub scores can also be obtained for each of the four categories (Anderson & Helms, 1995).

While it was developed for community and hospital nurses, the RDI can be used in a variety of discharge settings to compare the completeness of information transfer. It can also be used as a tool to improve and focus communication between practices and organisations. The RDI is completed by practitioners based on information received in referrals (Hellesø & Lorensen, 2005).

3.4 General Practice Assessment Questionnaire

The General Practice Assessment Questionnaire (GPAQ) was developed in the UK to answer questions about access, interpersonal aspects of patient care, and continuity of care.

There are two versions, each containing 18 questions – one that can be administered to the patient after a GP consultation and the other that can be mailed to the patient later. Both are available free of charge for practices from http://www.gpaq.info a website which also supplies a manual with instructions for administration and analysis.

Both formats have been extensively tested and validated in general practices in the UK. There is also a version for practice nurses available from the same web site.

See Table 3 on page 18 for Summary of tools to measure Continuity of Care.

4 Team work and team climate

Recently there has been increased attention on the role of health care teams and organisations as methods of improving the quality of care provided to patients with a chronic condition (Shortell et al, 2004).

Teamwork can be defined as the ‘actions, processes, and behaviours which contribute to a team’s ability to achieve specific, shared and valued objectives’ (Williams & Laungani, 1999). Concepts such as team climate and team culture are relevant as both are concerned with team processes at a group rather than individual level. Evaluation of team climate involves examination of the team’s shared perceptions of organisational policies, practices and procedures (Bower et al 2003).

Two types of teams are relevant to this article:

- Multidisciplinary teams, where multiple disciplines provide services to the same patient whilst operating with substantial autonomy. Members share information with each other and take responsibility for the clinical work of their own discipline. Multidisciplinary teams are likely to be hierarchically organised with a determined team leader.

- Interdisciplinary teams, where representatives of different disciplines work together as colleagues to generate, implement and evaluate a common plan. They tend to have a higher degree of collaboration than multidisciplinary teams in terms of care of a patient. Interdisciplinary teams have a high level of cooperation and mutual respect with the entire team sharing responsibilities (Hurley et al, 2003).

The usefulness of measuring team change in the primary health care setting is emphasised by reports in the literature that the primary health care team appears to function less well than other types of health care teams (Williams & Laungani, 1999). Team measures can apply to any function that the team is involved in including prevention activities, early intervention or management of patients with a chronic illness.

Three tools are described to measure team work:

1. Bales’ Interaction Process Analysis (IPA)
2. The Team Climate Inventory (TCI)
3. The QI Practices Index.

4.1 Bales’ Interaction Process Analysis

Bales’ Interaction Process Analysis (IPA) was specifically designed to measure group behaviour and has been used to identify group interaction and communication between doctor and patient (Atwal & Caldwell, 2005). It uses quantitative analysis to examine human interaction (Perakyla, 2004).

Each interaction between group members is classified into one of 12 categories. These categories cover either socio-emotional activity or task behaviour focussing on the problem on which the group is working. Observers identify each of the members’ acts and gestures, to whom they are directed, and into which of the 12 categories they fall (Figure 4).

The IPA has been used in various Australian universities but there is no published record of it being used in Australian health care organisations.
4.2 Team Climate Inventory

The Team Climate Inventory (TCI) is a validated and reliable measure of team functioning that can be used to map shared perceptions of how the team is operating. The measure is also highly predictive for team innovation. Measurement occurs across four scales considered necessary for effective teamwork (Williams & Laungani, 1999; Bower et al, 2003; Loo & Loewen, 2002; Anderson & West, 1999):

- shared vision
- climate of trust, information sharing, influence over decision-making and participation (termed participative safety)
- support for team innovation, both through encouragement and provision of resources
- focus on achieving outstanding performance, appraising potential weaknesses, assisting each other (termed task orientation).

The TCI comprises 44 items to assess and improve team climate and performance, covering the four scales above.

Responses to each item in the TCI are rated on a 5-point Likert scale, with higher scores indicating a healthier team climate. Research on the TCI has resulted in construct, discriminant and predictive validity of the four scale scores (Loo and Loewen, 2002).

A short version of the TCI has been developed by Finnish researchers, reducing the TCI to 14 items covering the same four scales as the original version. Preliminary evidence supports this short form as a viable instrument for assessing the TCI scales (Kivimaki & Elovainio, 1999).

Examples of use in Australia

Dr Judy Proudfoot and the Practice Capacity Research team at UNSW have been investigating the impact of practice capacity on the quality of chronic disease care. They have used the TCI to provide a measure of team climate and an assessment of the team’s strengths and weaknesses (personal communication).

The Centre for Health Informatics at UNSW has used the TCI to measure perceptions of support for innovation in hospital teams (Gosling et al, 2003; Westbrook & Gosling, 2002).

4.3 Quality Improvement Practices Index

The QI Practices Index (Figure 5) classifies teams based on their use of quality improvement practices (Lemieux-Charles et al, 2002). The index contains eight questions with the number of ‘yes’ answers being counted for each team member and then averaged to produce a team score. Scores can range between 0 - 8 with the higher scores indicating that the team is engaged in practices consistent with the quality improvement literature.

The QI Practices Index was developed for project teams and so may not apply to other types of
Figure 5: (Lemieux-Charles et al, 2002) Items included in the QI Practices Index

1. Project team sometimes get a clear statement of the area to work on and the expectations for what they are to achieve. When your team started were you given such a statement?
2. Project team sometimes uses a specific problem-solving method, such as a step-by-step guide, to help them do their work. Did your team use such a method to guide the way you approached your task?
3. Did your team make an actual change in the way some aspect of work gets done?
4. Did your team collect data to tell whether the change was an improvement?
5. Did your team attempt to understand the variations which exists in the way the work is carried out, and the reasons for these differences?
6. Did the team use existing data (numeric or non-numeric) from the organisation in understanding the issue?
7. Did the team collect new data about the issue, through such things as questionnaires, audits, interview, and measurements?
8. Did the team put in place a data collection system for ongoing monitoring or some aspect of the issue you were working on?

teams such as management, task forces and work teams (Lemieux-Charles et al, 2002).

See Table 4 on page 18 for Summary of tools to measure Team Work and Team Climate.

5 Other tools

It is also worth mentioning the RAND Improving Chronic Illness Care Evaluation data collection tools referred to earlier in this publication, although these are not validated. The tools contain two versions of a team member survey where de-identified aggregate feedback is supplied to each individual. Over time, results are compared with other participating teams and organisations for use in benchmarking and as a tool to assist in performance improvements. The version used in Wave 2 of the evaluation contains a teamwork section that has been adapted from an instrument developed in Toronto. This survey has sections on:

- Quality improvement in the organisation
- Perceptions of the Collaborative
- Teamwork survey.

The teamwork survey asks questions about the team, its work and its relationship with the rest of the organisation. Respondents are asked to assess the team’s effectiveness in making progress towards established goals as well as specific experiences with the Collaborative. Both surveys are freely available from http://www.rand.org/health/projects/icice/tools.html (RAND Health, 2006).

Summary

Organisational capacity to improve the quality of chronic care delivery will be vital to the success of the latest Government health initiatives. General Practitioners, Divisions of General Practice, primary care practitioners and researchers have a valuable role to play in ensuring the processes and systems are adequate to implement new prevention and management approaches. There is a significant need for organisational tools which can be used to stimulate internal development (Rhydderch et al, 2005) and contribute to valid measurement of various aspects of primary care projects, to the teams involved in administering and implementing the projects, and to management and organisational strategies.

In some instances, measurement of process may occur within a single GP practice, while in others it may cross organisation and agency boundaries. Alliances that cross health sectors are especially beneficial in tackling the broader determinants of health and well-being in communities (Gillies, 1998). Community oriented primary care requires practitioners with competence not only in delivery of primary care but also in prevention, epidemiology, ethics and behavioural science. Collaboration between practices and agencies can help overcome barriers to resources and time (McWhinney, 1998).

This issue of FOCUS on... has described some measurement tools that can be used in this endeavour. As a first step, it will be important to determine which aspect of practice or organisational process is most crucial to the success of a particular strategy. Some of the tools that have been outlined in this edition focus on the patient, others on the provider and yet others on teams or primary care structure and organisation of management. Prospective users are encouraged to communicate with others who have used the particular tools under consideration. Wherever possible, details and cost of the tools have been included.
<table>
<thead>
<tr>
<th>Tool</th>
<th>Type</th>
<th>Function</th>
<th>Reliability and Validity</th>
<th>Usefulness</th>
<th>Use in Australia</th>
<th>Available from</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP</td>
<td>Qualitative case study comparison using observation and interview</td>
<td>Understanding complexities of practice or organisation</td>
<td>No psychometric data has been published</td>
<td>In depth understanding from multiple perspectives</td>
<td>Framework for ACIC and others</td>
<td>(Centre for General Practice Integration Studies, 2005)</td>
</tr>
<tr>
<td>BTS</td>
<td>Short term collaborative</td>
<td>Improve quality and reduce costs</td>
<td>No psychometric data has been published</td>
<td>Good results obtained in reduction of costs, waiting times and hospital stays</td>
<td>NPCC</td>
<td>Relevant evaluation instruments from <a href="http://www.rand.org/health/ICICE">http://www.rand.org/health/ICICE</a></td>
</tr>
<tr>
<td>CCM</td>
<td>Conceptual framework</td>
<td>Change approach from acute care to preventative</td>
<td>No psychometric data has been published</td>
<td>Attractive and plausible. Combined with BTS measures change in chronic illness management</td>
<td>Whitehorse Division of GP (Kelly &amp; Azzopardi, 2005)</td>
<td><a href="http://www.improvingchroniccare.org">http://www.improvingchroniccare.org</a></td>
</tr>
<tr>
<td>ACIC</td>
<td>28 item survey completed pre and post CCM based collaborative</td>
<td>Extent to which elements of CCM are being utilised</td>
<td>Unknown</td>
<td>PACIC can be used to check pt perception against providers &amp; to determine strengths and weaknesses of service delivery</td>
<td>ABCD – Menzies and Whitehorse Division of GP (Si et al, 2005;Kelly &amp; Azzopardi, 2005)</td>
<td>(RAND Health, 2005)</td>
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<tr>
<td>Mapping approaches</td>
<td>Process mapping</td>
<td>Multi methodologies often using nominal groups, focus groups or participatory research</td>
<td>Defines processes and activities within a project or organisation</td>
<td>NSW health (2002)</td>
<td>There is a lot of information on the web about each one but no single source with all the details. A trained facilitator or coordinator is needed.</td>
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<tr>
<td>Concept mapping</td>
<td></td>
<td>Development of a conceptual framework</td>
<td>GP Integration Index – University Melbourne (Batterham et al, 2002)</td>
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<tr>
<td>Value stream mapping</td>
<td></td>
<td>Improves flow and reduces wasteful processes</td>
<td>Flinders Medical Centre (2004)</td>
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<tr>
<td>Patient care mapping</td>
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<td>Identifies patient problems on their journey through health systems</td>
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</table>
## Table 2: Summary of tools to measure Chronic Care Management Approaches

<table>
<thead>
<tr>
<th>Tool</th>
<th>Type</th>
<th>Function</th>
<th>Reliability and Validity</th>
<th>Usefulness</th>
<th>Use in Australia</th>
<th>Available from</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACIC</td>
<td>20 item patient</td>
<td>Patient perception of degree to which elements of CCM are used</td>
<td>Preliminary work has been undertaken</td>
<td>Complements the ACIC</td>
<td>not known</td>
<td><a href="http://improvingchroniccare.org/tools/pacic.htm">http://improvingchroniccare.org/tools/pacic.htm</a></td>
<td>Free of charge</td>
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<tr>
<td></td>
<td>questionnaire</td>
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<tr>
<td>PAM</td>
<td>22 item patient</td>
<td>Extent patients feel able to self manage</td>
<td>Established</td>
<td>Useful for projects designed to increase consumer engagement</td>
<td>not known</td>
<td><a href="http://www.uoregon.edu">http://www.uoregon.edu</a></td>
<td>Free of charge upon registration</td>
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<td></td>
<td>questionnaire</td>
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<td>PCP</td>
<td>22 item likert scale</td>
<td>Patient satisfaction with GP or primary care provider</td>
<td>Established</td>
<td>Additional qualitative questions would determine patient preference</td>
<td>not known</td>
<td>(Bidaut-Russell et al, 2002)</td>
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<tr>
<td></td>
<td>questionnaire</td>
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<tr>
<td>PCAS</td>
<td>Survey of patient and</td>
<td>Aspects of the overall doctor patient relationship</td>
<td>Reliable. Validity has not been extensively</td>
<td>Widely used in primary care in the US and Canada</td>
<td>Universities of</td>
<td><a href="http://www.tufts-nemc.org/icrmps/programs/default.asp">http://www.tufts-nemc.org/icrmps/programs/default.asp</a></td>
<td>Free of charge</td>
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<td></td>
<td>doctor</td>
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<td>studied outside the US.</td>
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<td>project</td>
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<tr>
<td>PCAT</td>
<td>Survey of patient and</td>
<td>Useful in measuring the strength of the doctor patient relationship in</td>
<td>Validity and reliability established.</td>
<td>Examines quality of general practice based on established principles of</td>
<td>not known</td>
<td><a href="http://www.jhsph.edu/hao/pcpc/tools.htm">http://www.jhsph.edu/hao/pcpc/tools.htm</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>doctor</td>
<td>primary care.</td>
<td></td>
<td>primary care</td>
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<tr>
<td>GPII</td>
<td>50 item model</td>
<td>Measures the level of GP integration in particular settings</td>
<td>Validity and reliability appropriate to</td>
<td>Especially suited to the Australian general practice context</td>
<td>Universities of</td>
<td>Further information can be obtained from the University of Melbourne: <a href="mailto:d.dunt@unimelb.edu.au">d.dunt@unimelb.edu.au</a></td>
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<tr>
<td></td>
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<td>current stage of development of index.</td>
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<td>Melbourne and</td>
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</table>
### Table 3: Summary of tools to measure Continuity of Care

<table>
<thead>
<tr>
<th>Tool</th>
<th>Type</th>
<th>Function</th>
<th>Reliability and Validity</th>
<th>Usefulness</th>
<th>Use in Australia</th>
<th>Available from</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCCS</td>
<td>47 item scale</td>
<td>Patient perception of continuity of care</td>
<td>Preliminary results show internal consistency and moderate construct validity</td>
<td>Developed from a providers perspective</td>
<td>not known</td>
<td>(Dolovich et al, 2004)</td>
<td>Available free to researchers</td>
</tr>
<tr>
<td>UPC</td>
<td>Based on administrative or billing data</td>
<td>The number of visits to a 'usual' provider in a given period over the total number of visits to similar providers.</td>
<td>Highly correlated with the Continuity Of Care Index (Reid et al, 2002)</td>
<td>Relatively simple to analyse. Because it specifies a 'usual' provider, it is potentially useful in examining the role of a GP or case manager in patient care.</td>
<td>not known</td>
<td>(Reid et al, 2002)</td>
<td>Free to use</td>
</tr>
<tr>
<td>RDI</td>
<td>Audit of Transfer and referral documents</td>
<td>Communication between nurses</td>
<td>Content validity</td>
<td>Instrument can be generally applied to a variety of discharge settings. Can be used to compare completeness of information transfer in different contexts.</td>
<td>not known</td>
<td>(The General Practice Psychiatry Program Research Group, 2006)</td>
<td>Free in article</td>
</tr>
<tr>
<td>GPAQ latest version</td>
<td>18 item patient survey</td>
<td>Covers access, interpersonal aspects of patient care and continuity of care</td>
<td>Established</td>
<td>Practice nurse version also available.</td>
<td>The Practice Capacity Research team at UNSW used the General Practice Assessment Survey (GPAS) from which the GPAQ is derived. <a href="http://www.cgpis.unsw.edu.au/">http://www.cgpis.unsw.edu.au/</a></td>
<td><a href="http://www.gpaq.info">http://www.gpaq.info</a></td>
<td>Free of charge to practices</td>
</tr>
</tbody>
</table>

### Table 4: Summary of tools to measure Team Work and Team Climate

<table>
<thead>
<tr>
<th>Tool</th>
<th>Type</th>
<th>Function</th>
<th>Reliability and Validity</th>
<th>Usefulness</th>
<th>Use in Australia</th>
<th>Available from</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPA</td>
<td>Group observation using standard format</td>
<td>Group behaviour and group interaction and doctor / patient communication</td>
<td>N/A</td>
<td>Useful for research on doctor-patient interaction</td>
<td>Various Australian University departments</td>
<td>(Jones et al, 2004)</td>
<td></td>
</tr>
<tr>
<td>QIPI</td>
<td>8 question index</td>
<td>Classifies teams based on their use of QI practices</td>
<td>Not known</td>
<td>Useful for project teams</td>
<td>Not known</td>
<td>(Shi et al, 2006)</td>
<td>Free</td>
</tr>
</tbody>
</table>


Shi, L., Starfield, B., & Xu, J. (2001). Validating the Adult Primary Care Medical Projects' Cross Sectional


The Primary Health Care Research and Information Service is an independent academic unit based at Flinders University in South Australia in the Department of General Practice. It is funded by the Australian Government Department of Health and Ageing.

PHC RIS contributes to improved primary health care policy and practice by increasing the exchange of information about Australian general practice and primary health care research, evaluation and development, among primary health care researchers, policy advisors, and the Divisions of General Practice Network.

We aim to:

Generate, manage and share information and knowledge that will inform, influence and enhance Australian primary health care practice, policy and research.

Create a better understanding of primary health care activities and research, improve access to data and information and enhance knowledge and information sharing.

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