Clinical Governance in Community Health Services: Development of a Clinical Indicator Framework

Discussion paper

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Summary

This discussion paper explores possible clinical indicators that could be employed as part of an overall clinical governance framework in the community health sector. The indicators outlined here follow the six dimensions of quality described in the Victorian Quality Council's *Better Quality, Better Health Care* framework. While potential indicators under all six quality dimensions are discussed – for example, adverse events for safety, use of care pathways for appropriateness – the focus of this paper will be clinical indicators for the dimension of effectiveness.

A multilayer approach to indicators within the dimension of effectiveness is proposed. The first layer of indicators can be termed 'discipline-specific', that is, process/outcome indictors that relate directly to a clinical discipline. The prototypical (and currently most developed) indicator set of this type in current use is Dental Health Services Victoria's community dental program indicators. Other potential indicator sets have been developed (primarily as outcome measures for clinical research purposes) that could be adapted for use in the clinical governance context. Other discipline-specific sets would require additional development in consultation with the professions. There is also potential for a clinical audit approach to quality of care for each discipline; for example, mapping adherence to good practice guidelines and/or comparisons of outcomes relative to initial treatment goals.

The additional layers of indicators discussed here are 'disease-specific' and focus upon chronic disease (e.g. diabetes, cardiovascular disease); given the current (and increasing) importance of this area of care, indicators relating to chronic disease represent an appropriate initial choice for clinical governance efforts. A variety of chronic disease initiatives in community health use process and outcome indicators in relation to specific disease states; for example, percentage of clients with acceptable HbA1c levels as an indicator for the successful treatment of type II diabetes. The commonalities between these indicator sets are explored here, and increasing experience with such initiatives (e.g. the Victorian Early Intervention in Chronic Disease Initiative) will assist in building capacity within community health to collect such information.

The final layer for the dimension of effectiveness proposes the use of an existing tool (the Assessment of Chronic Illness Care instrument) to provide an overarching indicator of system effectiveness. The tool itself is structured according to the Wagner model of chronic care and in research studies increased scores on the tool has been linked to improved outcomes for clients (in the form of clinical indicators such as HbA1c). The proposed use of the tool would provide individual community health services with an assessment of their overall organisational capacity for chronic disease care and assist in guiding overall quality improvement initiatives.

Overall, this discussion paper outlines potential clinical indicators for consideration in moving towards a clinical governance framework within community health. The validation and implementation of any such indicator framework will require further consideration, consultation and development within the sector.

Acknowledgements

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Introduction

The concept of clinical governance in the primary care and community health sector has received increased attention from within the sector as well as at a governmental level, particularly with respect to the opportunities it affords to improving the safety and quality of clinical practice (Swerissen & Jordan, 2005). The purpose of this discussion paper is to propose a potential framework of indicators that may be incorporated or adapted by individual Community Health Services (CHS) in implementing their own clinical governance system, with a focus on indicators that measure process and outcomes of clinical care and with consideration of other potential indicators that will supplement these principal indicators of appropriateness and effectiveness. The relationship between clinical governance and indicators will be discussed alongside the various features of indicators that should be considered in implementing a clinical governance framework at a local level.

Clinical governance in community health

There are several ways in which the concept of clinical governance may be defined; while such definitions usually describe 'the health system,' this is usually in relation to the acute sector, where clinical governance originated (Swerissen & Jordan, 2005). In the UK in recent years there has been a strong policy drive towards implementing clinical governance systems throughout the National Health Service (NHS); the *British Medical Journal* (*BMJ*) offered the following NHS-specific definition in 1998:

> Clinical governance is a system through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish (Scally & Donaldson, 1998).

Recently, definitions of clinical governance have moved towards incorporating system elements broadly applicable to all types of health care organisations, where clinical governance is:

> [A] governance system for health-care organisations that promotes an integrated approach towards management of inputs, structures and processes to improve the outcome of health-care service delivery where health staff work in an environment of greater accountability for clinical quality (Vanu Som, 2004).

In the Australian context, a common definition has been proposed by the Australian Council on Healthcare Standards (ACHS) to ensure consistency for the purposes of ACHS accreditation:

> Clinical governance is the system by which the governing body, managers and clinicians share responsibility and are held accountable for patient care, minimising risks to consumers and for continuously monitoring and improving the quality of clinical care (ACHS, 2004).

Alongside the emphasis on continuous quality improvement inherent in these definitions, there is the notion of increasing accountability for health care services (Buetow & Roland, 1999). In the UK experience, both continuous quality improvement and accountability have been pivotal in driving clinical governance, which has been attributed to the health system's need to address actual and perceived declines in the standards and quality of healthcare provision (McSherry & Pearce, 2002; Scally & Donaldson, 1998). In the Australian context, it has been argued that the high degree of professional autonomy and self-regulation traditionally enjoyed by the medical profession has, in recent times, been questioned by the

public and the media in light of the publicity surrounding various local and international medical disasters and inquiries, and a desire for greater accountability (Callaly, Arya, & Minas, 2005).

In the broader context, accountability of governmental (and thus agency) action is a cornerstone of the democratic system:

> In a democratic society, effective accountability to the public is the indispensable check to be imposed on those entrusted with public power […] The purpose of such measures is to hold governments, public officials and agencies to account for the manner of their stewardship […] (Kennedy, 1992).

In the current context, the accountability component strongly echoes that seen in corporate governance – the systematic approach to demonstrating appropriate controls and safeguards in the business world from which clinical governance has evolved (McSherry & Pearce, 2002). This resonance between clinical governance and corporate governance is important to the success of clinical governance, as noted in the *BMJ*:

> [I]f clinical governance is to be successful it must be underpinned by the same strengths as corporate governance: it must be rigorous in its application, organisation-wide in its emphasis, accountable in its delivery, developmental in its thrust, and positive in its connotations (Scally & Donaldson, 1998).

In recent times, there has been a shift towards more complex health interventions in the community setting; this integration of acute/sub-acute services with primary care and community health will require strong clinical governance to ensure quality and safety in the delivery of such care:

> [P]rimary health and community care providers […] will need to be able to demonstrate strong clinical governance for acute care providers to be willing to devolve clinical responsibility for the management of chronic illness and ambulatory care sensitive conditions to them (Swerissen & Jordan, 2005).

This integration of care and the need for good clinical governance systems within the sector to support it forms a major part of the Victorian Government Department of Human Services' (DHS) current community health policy, *Creating a healthier Victoria* (Department of Human Services, 2004). Stronger governance within the sector is seen as a key enabler to support the general delivery of effective primary healthcare services, as well as in the provision of community-based ambulatory care services. The policy vision for stronger clinical governance structures within the sector aims for CHS Boards of Management to have a clear understanding of performance expectations and a strong focus on monitoring performance measures and benchmarks (Department of Human Services, 2004). The policy proposes that the Victorian Quality Council's (VQC) framework for safety and quality in health services should provide the overview of the principles for clinical governance within the sector (Victorian Quality Council, 2003). While the VQC framework itself was developed primarily for large acute health services, the underlying concepts are applicable to health services of all types (Department of Human Services, 2004).

The policy outlines that the eventual framework developed for community health should include a focus on the 'measures and benchmarks' alluded to above, with structures put in place to report trend data on important quality and safety indicators; for example adverse events and client complaints. The importance of the relationship between healthcare quality and measurement is eloquently summarised by the following quote attributed to Florence Nightingale, c. 1875: "The ultimate goal is to manage quality. But you cannot manage it until you have a way to measure it, and you cannot measure it until you can monitor it," (Arah, Klazinga, Delnoij, ten Asbroek, & Custers, 2003).

The modern literature on clinical governance supports this adage, with performance indicators or measures used "to capture a variety of health and health system-related trends and factors," (Arah et al., 2003) and should "describe the performance that should occur for a particular type of patient or the related health outcomes," (Mainz, 2003a). The monitoring and evaluation of measures is of critical importance to the concept of clinical governance to ensure that accountability is explicit and tangible, such that the system and those working in it do not "live in an illusion that 'things around here are done well'," (Arya & Callaly, 2005). For the purposes of this discussion and proposed framework, the umbrella title of 'clinical indicators' will be used to describe this element of the overall clinical governance structure, and an overview of the features of clinical indicators is provided below.

Clinical indicators

Clinical indicators, particularly when discussed in the context of quality and clinical governance, are often viewed as measures of some aspect of care; for example:

> [Clinical indicators] can be measures of structure, process, and outcome, either as generic measures relevant for all diseases, or disease-specific measures that describe the quality of patient care related to a specific diagnosis (Mainz, 2003a).

> A clinical indicator [is] defined simply as a measure of the clinical management and/or outcome of care (Collopy, 2000).

> A clinical indicator is an objective measure of the clinical management and outcome of patient care at a point on the process-outcome continuum (NZ Ministry of Health, 2002).

Outside the clinical governance "quality improvement community," indicators are described as a boom industry; the culmination of "two decades of audit ambitions, accreditation aspirations and guideline mania," (Klazinga, Stronks, Delnoij, & Verhoeff, 2001). The public health view of indicators as stated here is an instrumental one, in which "indicators are management tools for health care services and health systems, and public health helps to relate indicators to what should be the ultimate cause of health care," (Klazinga et al., 2001).

The collection of data relating to clinical indicators can be viewed as the mechanism by which healthcare providers can reliably measure and report on aspects of clinical practice which will "determine current performance and identify quality improvement," (NZ Ministry of Health, 2002) and, in the public health system context, "ensure quality of care and efficient use of scarce government resources," (Tucker, 2002). In any discussion of clinical indicators, it is important to note what they are **not**. Clinical indicators are not an isolated exercise in data collection, as the value of clinical indicators lies in their use:

> The benefits to be gained from the use of clinical indicators **do not** lie in the collection of the data, but in how those data are used; that is, in the data analysis and the actions taken to achieve sustained improvements in clinical practice. Clinical indicators do not 'work' unless used effectively by clinicians and managers to bring about improvements (NSW Health, 2001).

Despite the consistent relation of the term 'indicators' to 'measurement' in the definitions provided above, it is also important to note that there is a subtle distinction between the two. The ACHS describes clinical indicators as "best seen as measures that screen for a process or outcome that may need reviewing"; that is, drawing attention to, 'flagging' or simply *indicating* that closer inspection to a particular area is required (ACHS, 2006). Further, in ACHS's view, while indicators form the basis for monitoring healthcare quality, in themselves:

> Indicators do not provide the answers; rather they are designed to indicate areas that may need addressing, usually demonstrated by trends or variations within the results. They are used to assess, compare and determine the potential to improve care (ACHS, 2006).

This distinction between indicators and measurements is of particular importance in the present context: in developing a framework for reporting to CHS Boards of Management, it is necessary to provide 'high level' indicators that will appropriately 'flag' an area for further investigation (e.g. by an internally-designated quality officer or a Board quality subcommittee or other responsible entity). Such indicators may not necessarily provide a Board of Management with *precise* measurements or information relating to quality areas, but rather a general overview of an area where their has either been (a) a departure from what is the 'normal range' for an indicator, or (b) where pre-determined target levels for indicators have not been met.

Features of clinical indicators

The key features of any type of clinical indicator have been variably described in the literature. Clinical indicators must be evidence-based, either from the literature or based upon expert/local consensus (ACHS, 2006; Mainz, 2003a, 2003b; NSW Health, 2001; NZ Ministry of Health, 2002) and acknowledged as representing an area that needs to monitored and reported (ACHS, 2006; Collopy, 2000; NSW Health, 2001). In addition, other key features that are often identified include:

- Meaningfulness of measurements to health professionals to ensure accurate collection and use, rather than rejection as another administrative/data collection exercise (Collopy, 2000; Dunckley, Aspinal, Addington-Hall, Hughes, & Higginson, 2005; NSW Health, 2001; NZ Ministry of Health, 2002);
- A regular cycle of review to ensure that the indicators remain relevant to practice and quality considerations (ACHS, 2006; NZ Ministry of Health, 2002);
- The process of measurement for each indicator should require minimal additional effort for practitioners (i.e. is embedded in rather than divorced from normal practice), or the data for the indicators should already be available within the organisation (Balding, 2005; Collopy, 2000; Degeling, Maxwell, Iedema, & Hunter, 2004; Dunckley et al., 2005; NSW Health, 2001; NZ Ministry of Health, 2002).

In terms of the number of indicators that should be considered, a balance must be found between comprehensiveness of reporting and onerous data collection and administration. The following quote is instructive:

> The list of indicators collected and reported does not necessarily need to be lengthy. A smaller number of indicators, that provide useful and relevant information about the quality of clinical care and upon which action can be taken, is far better than a large number of indicators that do not fulfil these needs (NSW Health, 2001).

Types of clinical indicators

A broad classification of the various forms of clinical indicators is as follows (Mainz, 2003a):

- *Rate-based or sentinel indicators*: rate-based indicators can be used to describe events that can be expected to occur frequently and can be compared on the basis of trends; sentinel indicators usually relate to undesirable events and are usually tied to risk management and/or investigative mechanisms.

- *Indicators related to structure, process or outcome*: structural indicators relate specifically to organisational features of care, and (in the acute setting) may describe such features as the proportion of senior specialists to junior doctors or access to specific facilities. Process indicators relate to what overall activities the service or practitioner undertook to achieve overall care objectives for clients; for example, the proportion of diabetic clients receiving regular foot care. Outcome indicators describe the effects of care on particular aspects of client health on an individual client or population basis; for example, the proportion of diabetic clients with acceptable HbA1c levels.
- *Generic or disease-specific indicators*: in the acute setting, a generic indicator may describe overall inpatient mortality; in the community health setting a generic indicator might include proportions of clients with risk factors such as smoking. Examples of disease-specific indicators may include the two previous examples related to diabetes clients.

Process and outcome indicators in clinical governance

In the context of clinical governance in community health, process and outcome indicators will have specific uses, advantages and disadvantages. While 'outcomes' are often considered "of prime interest" (Buchanan, Pelkowitz, & Seddon, 2006), process measures do have their advantages, and the two types of indicators should not be considered to be in competition with each other (Mant, 2001). Process indicators are considered to have greater sensitivity than outcome indicators in determining the quality of service provision (Crombie & Davies, 1998; Mant, 2001; NZ Ministry of Health, 2002), are thought to be intuitively easier to interpret (Crombie & Davies, 1998; Mant, 2001) and are generally easier and less costly to collect data for (Crombie & Davies, 1998; Rubin, Pronovost, & Diette, 2001a). Outcome indicators are often linked to measures that are important in their own right, whereas process measures are only of value when they have some link to outcomes (Crombie & Davies, 1998; Mant, 2001; Rubin et al., 2001a). The link between process and outcome is complicated, however, by the fact that failures of process do not necessarily result in poor outcomes (Crombie & Davies, 1998), with the classic example of heart attack patients who, despite poor care from a medical standpoint, are today still likely to achieve good outcomes (Brook, McGlynn, & Shekelle, 2000). In addition, the use of outcome indicators can be significantly confounded by factors outside clinical care, such as age, gender, co-morbidity, severity of disease and socio-economic factors (Buchanan et al., 2006; Mant, 2001). A study of primary care in the UK has shown that outcome indicators (admission to hospital) for asthma, diabetes and epilepsy are in large part associated with variables such as socio-economic factors (Giuffrida, Gravelle, & Roland, 1999).

The use of process indicators in conjunction with outcome indicators in the community health context can thus improve the meaningfulness of the relationship between indicators and service quality. In particular, the use of process indicators based upon practice guidelines, in conjunction with specific outcome measures, provides an overall picture of service quality. For example, studies of diabetes care in US primary and community health settings have employed both process and outcome measures and have shown poor compliance with diabetes care guidelines (process measures) and sub-optimal HbA1c or blood pressure control (outcome measures) (Bell et al., 2001; Chin et al., 2000).

Dimensions of quality

The overall approach to clinical governance in Victoria follows the aforementioned VQC quality and safety framework (Victorian Quality Council, 2003), as per the *Creating a*

healthier Victoria policy strategy (Department of Human Services, 2004). The VQC framework describes six dimensions of quality as such (Victorian Quality Council, 2003):

- *Safety*: the safe progress of clients through the system is a major objective of any level of service within the healthcare system; harm arising from care or the care environment should be avoided and risks minimised.

- *Effectiveness*: it should be a basic expectation that the services and treatment clients receive should produce benefits, i.e., the desired outcomes of treatment.

- *Appropriateness*: services and treatments clients receive should be selected based on the likelihood of producing the desired outcome; interventions themselves should not be under- or over-utilised.

- *Acceptability*: clients should be provided with the opportunity to participate in and provide feedback to the healthcare services they attend; services themselves should be responsive to such participation and endeavour to meet or exceed the expectations of informed consumers.

- *Access*: clients should be provided with access to health services on the basis of need, regardless of geography, socio-economic group, ethnicity, age or sex.

- *Efficiency*: health service provision must ensure that resources are allocated in such a way that maximises value for money; for example, the allocation of resources to services providing the greatest benefit for clients.

The VQC framework recognises that each dimension within this classification system is not a discrete entity – there is considerable overlap and interdependence between the dimensions. For example, a health intervention that is the most 'appropriate' will naturally reflect one that is safe and effective, and (usually) efficient.

Proposed elements of a clinical indicator framework

The following discussion of potential indicators for use in clinical governance in community health follows the VQC quality framework's six dimensions of quality described above. The individual elements of the framework will, in many respects, reflect information and/or reporting mechanisms that may already exist within individual CHSs (e.g. DHS-required incident reporting under the dimension of safety). In other examples, the suggested indicators may be either entirely new or represent significant extensions or modifications to existing procedures (e.g. client record auditing as a part of the appropriateness and effectiveness dimension). This discussion is mindful of the oft-cited reasons for non-acceptance of clinical governance initiatives – onerous data collection requirements – and as such this discussion attempts, wherever possible, to 'piggy-back' onto or extend *existing* systems and procedures. The proposed elements will be discussed primarily from the point of view of how information might be provided to the CHS Board of Management. For selected examples, potential draft indicator specifications have been provided (Appendix I) to assist the development of a standardised format for clinical governance indicators.

Dimension 1: Safety

Consistent with the VQC framework, harm arising from care *and* the environment in which it is provided should be considered under the dimension of safety. The proposed indicators for consideration that should be considered as constituting the safety dimension include:

- Incident monitoring and reporting;
- Adverse event reporting; and
- Other safety audit reporting (such as infection control or food safety).

For each of these indicators to contribute to the overall picture of the quality of service provided, it is considered that such monitoring be: (a) taken seriously by management and staff involved; (b) subjected to proper pattern analysis (where appropriate); and (c) "conducted within a program where a formal mechanism exists to correct problems," (Wilson, 1998). The indicators proposed in this section lie in the outcome end of the spectrum, with the exception of audit reporting, which will naturally focus on process as well.

Incident monitoring and reporting

Currently, DHS requires all direct services and some funded services to adhere to the management and reporting requirements for incidents set out in the *Incident Reporting: Departmental Instruction* (Department of Human Services, 2005b). Currently, the incident reporting instructions are being reviewed by DHS, and as such many of the details contained in the present instructions are subject to change. For the purposes of this discussion the broad concepts and categories will be considered as they currently stand, with the understanding that the finer detail of incident reporting will depend upon the form that the new instructions will dictate.

The current reporting instructions grade incidents according to impact on (and potential future risk to) clients, staff and the department. Category I incidents (e.g. serious assaults etc.) are the most serious and must be reported to DHS according to a strict protocol. Category II incidents (e.g. serious incidents that do not meet Category I criteria) and Category III incidents are less serious, involving some disruption to normal work/routine (e.g. minor property damage) that can be dealt with internally.

Community Health Services will undoubtedly have existing internal reporting structures, aligned to DHS reporting instructions, that inform Boards of Management of incidents that have occurred, although this may be selective (e.g. only Category I incidents). As part of this framework, it is proposed that for the dimension of safety the existing/forthcoming incident reporting structure be incorporated as an indicator of safety of clients and staff. This indicator would follow the "Trend Analysis" recommendations (section 8.2) of the current departmental instructions (or subsequent recommendations), with the additional statistical analysis and benchmarking elements recommended. Such Board of Management reports should encompass all levels of the incident reporting categories, with an additional 'other' category for those incidents that 'don't fit' the standard structure but are of local importance to the Board and/or are, in the judgement of CHS staff, notable. While the additional 'other' category would enable the reporting of incidents outside the traditional classification system, it should be noted that the *lack* of classification structure in this category may lead to erratic reporting, and Boards/CHS staff may wish to standardise this category according to local considerations.

A suggested specification for this indicator is detailed in Appendix I, but as previously noted there are ongoing efforts in this area towards the development of a standardised data set for incident monitoring for community health (and beyond), such as the current DHS Incident Information System (IIS) project conducted by the Quality and Safety Branch.

Adverse events reporting

A variety of definitions exist for 'adverse events', many of which are context-specific for the acute care sector. The 1990s Quality in Australian Health Care study used the following tripartite definition of adverse events when reviewing medical records (Wilson et al., 1995):

> An adverse event (AE) was defined as:
>
> (1) an unintended injury or complication which
>
> (2) results in disability, death or prolongation of hospital stay, and is
>
> (3) caused by health care management rather than the patient's disease.

This tripartite definition has been reduced to the more common definition used in the acute sector today: "an unintended injury or complication that results in disability, death or prolonged hospital stay and is caused by health care management," (NSW Health, 2001). A general definition of adverse events, one that is applicable to both the primary and community health sector as well as acute care, is an "incident in which unintended harm resulted to a person receiving health care,"(Australian Council for Safety and Quality in Health Care, 2003). Adverse event monitoring is of crucial importance to clinical governance, being a major component of the dimension of safety in any framework (Victorian Quality Council, 2003). Adverse event monitoring is increasingly considered as part of larger incident monitoring and reporting frameworks, and the previously mentioned IIS project has incorporated adverse events as clinical incidents, a definition that also captures 'near misses'.

The importance of adverse event management has been graphically illustrated in the acute sector; a recent study in Victorian hospitals has shown at least one adverse event occurring in 6.88 per cent of hospital admission episodes, with consequential increases in length of stay, costs and mortality risks (Ehsani, Jackson, & Duckett, 2006). Beyond the acute sector, the importance of adverse events and their management has been highlighted by the Bettering the Evaluation and Care of Health (BEACH) study of general practice where almost 1 per cent of GP-client encounters related to the management of an adverse event (Hargreaves, 2001).

Extrapolation of the results of the BEACH study indicates that approximately 927,000 GP-client encounters per year relate to adverse event management.

Reporting of adverse events in any healthcare context is often hampered by a culture in which admission of errors in clinical practice is not encouraged. Training, open disclosure and non-punitive cultures are considered to be essential to proper reporting of adverse events; it is a common finding in inquiries into healthcare safety that such cultures do not exist where serious problems occur (Hindle, Braithwaite, Travaglia, & Iedema, 2006). As such, it is essential that all levels of a healthcare service "create a culture where open disclosure, reporting and learning from errors and clear accountability for and participation in safety improvement are embedded and rewarded," (Victorian Quality Council, 2003).

Adverse event reporting will form an integral part of any clinical governance framework for community health. Established systems for reporting of adverse events (which may overlap with the risk management aspects of clinical governance) should be incorporated, and potentially administered in a general system that also manages incident reporting (see above). Such systems may already include a similar definition(s) of adverse events that are applicable across the various healthcare disciplines that are practised in community health. The reporting of this indicator at a Board of Management level would be substantially similar to that for incident reporting, and should be accompanied by a parallel indicator of how the actual events have been responded to. In a risk management context this may include performing a root-cause analysis for serious events; from a clinical practice perspective open peer-to-peer discussion of adverse events (and near-misses) may be a feature. Given the nature of practice in community health, reporting systems should (if not already doing so) also include adverse events noted that have occurred/likely to have occurred from external service providers. While not relating to the direct quality of care provided within the service, the rates/types of presentations that may be encompassed in this category would still inform clinical practice within the service. A suggested specification for this indicator is detailed in Appendix I.

Other safety auditing and reporting

The indicators for the dimension of safety should also include other relevant reporting structures that already exist within community health; for example, infection control. Regular auditing of sterilization and cleaning systems, staff training etc. should be reported as part of the indicator framework, with the 'red flag' for Boards of Management being any deviation from accepted standards. Depending upon the existing reporting system, 'infection control' may also include the rates of infection resulting from treatment – such incidents could equally be considered as adverse events. Other existing auditing and reporting structures that exist within an individual service that can be considered under this quality dimension might include equipment audits (of performance, maintenance and usage/training), food safety auditing and audits processes and performance of legislated/mandatory functions; for example, child protection. The creation of standardised processes and audit tools within the safety dimension would be extremely useful to the overall clinical governance approach, and a coordinated effort across the sector would ensure that a comprehensive and useful system is developed. Such systems would be incorporated as indicators in this framework in a manner similar to incidents and adverse events reporting, with high-level Board reporting of the performance of audits and the occurrence of problems, and with red flags examined in detail by responsible staff/subcommittees.

Dimension 2: Appropriateness

The dimension of appropriateness is perhaps most closely aligned to the process end of the indicator spectrum than the other VQC quality dimensions, as it focuses on the selection of interventions and care-based clinical practice guidelines designed to bring about the best possible outcomes for clients. In the current policy context of community health, the provision of proper care planning (and associated care pathways) is central to the concept of appropriateness.

The definition of a 'care plan' will differ according to the forum in which it is being considered. Care (or treatment) plans may have been devised internally by the agency, and in some cases related to participation in specific agency programs (e.g. the Early Intervention in Chronic Disease [EIiCD] in Community Health Services Initiative). The term 'care plan' would also encompass the General Practitioner Management Plans (GPMPs) and Team Care Arrangements (TCAs) that form part of the new Medicare Chronic Disease Management (CDM) items.

Currently, accreditation standards for community health (such as those of the Quality Improvement Council [QIC]) include standards for care planning. For example, as part of the QIC accreditation, community health services are required to audit care planning in client records for evidence of complete care/management plans (agreed by clients), reviews of such plans and discharge/exit summaries. Boards of Management may wish to either use the existing care planning audits conducted as part of accreditation as an indicator of appropriateness, or extend such audits to a larger sample of records (or in conjunction with the additional client record audit elements described for the dimension of effectiveness below). The percentage of client records audited containing (a) care plans and (b) all other elements required for accreditation would form the likely indicator to report to Boards, with targets set for performance. For accreditation purposes the selection of records for auditing is random; however, if additional record audits are to be performed, agencies may wish to consider auditing records of clients designated as having chronic and/or complex care needs – by necessity, the targets for percentage of clients with care plans in this group should be higher.

In addition to care plans, agencies may wish to nominate particular care pathways that are of importance to their service. This would give a further process indicator of appropriate care within the agency. For example, an agency may wish to construct an indicator relating to a standardised pathway for newly-identified diabetic clients within the service, using a checklist of items/goals/services that (ideally) all clients would receive.[1] This pathway will naturally depend upon the services available within the agency, but could also include referrals to appropriate external services. For example:

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[1] Such a pathway could potentially be developed in conjunction with specialised programs such as EIiCD, in which clients are enrolled into a structured program.
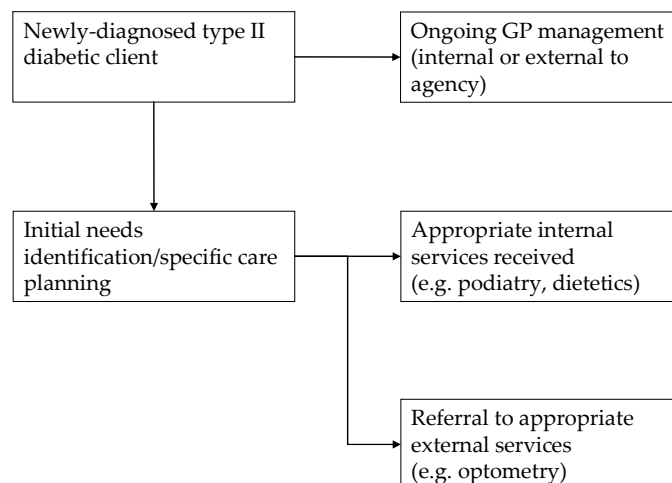
```
┌─────────────────────────┐          ┌──────────────────────────┐
│ Newly-diagnosed type II │─────────→│ Ongoing GP management    │
│ diabetic client         │          │ (internal or external to │
│                         │          │ agency)                  │
└─────────────────────────┘          └──────────────────────────┘
            │
            ↓
┌─────────────────────────┐          ┌──────────────────────────┐
│ Initial needs           │─────────→│ Appropriate internal     │
│ identification/specific │          │ services received        │
│ care planning           │          │ (e.g. podiatry, dietetics)│
└─────────────────────────┘          └──────────────────────────┘
                                     ┌──────────────────────────┐
                                     │ Referral to appropriate  │
                                     └────────────────────────→ │ external services        │
                                                                │ (e.g. optometry)         │
                                                                └──────────────────────────┘
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Figure 1: Hypothetical care pathway for type II diabetic clients.

In this example, an 'all or nothing' approach can be taken to the potential indicator: the percentage of such newly-diagnosed diabetic clients who have received *all* elements of the care pathway; that is, attended all internally-conducted services and referred to appropriate external services. The all or nothing approach provides the Boards of Management with a very comprehensive indicator of process, but it is not necessarily suitable for all disease conditions, where the types of services required may be different for certain groups of clients. An example of this situation would be mental health and wellbeing – as part of the SCTT Psychosocial Profile, the K-10 scale is administered to clients, with a recommendation that clients with a K-10 scale score of 16 be considered for mental health assessment. While the percentage of clients receiving such referrals/services would form a valuable indicator, the all or nothing approach to a pre-determined sequence of treatment may not be practical in mental health (where other judgement factors used in the referral process and the variation in the treatment pathways may be more prominent than in the diabetes example).

Dimension 3: Effectiveness

The quality dimension of effectiveness is based upon the expectation that clients should be able to receive treatment that produces measurable benefit; that is, the extent to which the desired outcome of therapy is achieved. In community health, effectiveness can be measured by way of outcomes achieved by specific disciplines/services, as well as for specific disease states (with chronic disease being the most important in this sense). A variety of indicators can be used to describe effectiveness, such as disease-specific outcome measures (with HbA1c levels in type II diabetes being a prototypical example), discipline-specific measures of outcomes (e.g. the current community dental indicator set) and/or a broader audit approach from a specific-discipline or multi-disciplinary approach, where the goals of therapy described in care plans are compared to actual documented outcomes. In addition, the overall effectiveness of the system in which care is undertaken can also be measured to provide an overarching indicator for consideration by Boards of Management. The interrelationship between these various approaches is outlined in Figure 2, and each will be discussed under this dimension.
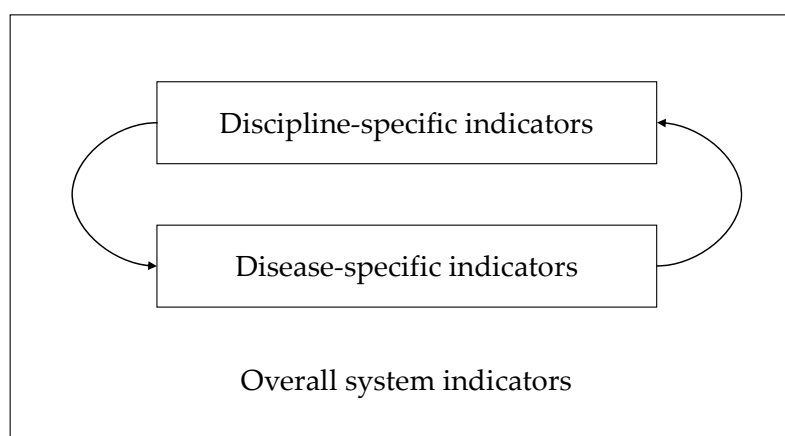
Figure 2: Discipline, disease and system indicators of effectiveness: diagrammatic interrelationship.

Disease-specific indicators

With the increasing emphasis on the prevention and treatment of chronic disease in the community, there have been major policy initiatives to support the role of community health services in providing specific services targeted to clients with chronic diseases. In Victoria, DHS has provided significant funds to the sector for the EIiCD initiative, which has been progressively deployed across the state. The EIiCD initiative is designed to provide community health services with the resources to assist clients with self-management of their chronic conditions at an early stage of the disease process, when such interventions should result in meaningful improvements for client health and wellbeing as well as reducing the burden that such diseases are expected to have on the health system in the future.

As part of the initiative, specific clinical indicators have been incorporated into the overall EIiCD evaluation framework (Swerissen, Taylor, Macmillan, & Lewis, 2006).[2] These indicators have been developed for the three major chronic disease states for which programs have been designed by EIiCD-funded community health services: type II diabetes, cardiovascular disease and chronic obstructive pulmonary disease (COPD). Broadly, the indicators address both risk/protective factors related to the disease (with obvious overlap between each disease state) as well as specific clinical markers related to the disease process.

The indicators have been developed from the nominal treatment targets for each disease state, and in the context of the EIiCD initiative evaluation they are envisaged to form markers of successful client management. For example, part of the evaluation will examine what percentage of diabetic clients had, at the time of enrolment, a HbA1c level greater than 7 per cent, which is used as a marker of target group engagement.[3] These measurements will then be tracked over time (e.g. 12 months) to determine the percentage of clients who have maintained or improved their clinical indicators (e.g. achieving or maintaining a HbA1c level less than 7%). This 'success rate' will in part determine the overall efficacy of the EIiCD

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[2] It should be noted that at the time of writing the clinical indicators have been incorporated into the evaluation framework, but are subject to continuing developmental work regarding the information technology infrastructure required to enable data collection at the service level. This will be a continuing process as the initiative and the evaluation proceeds.

[3] Enrolment of clients with clinical indicators within the acceptable range will, in the EIiCD context, reduce the target efficiency of the program.

approach; for clients, maintenance of appropriate clinical indicator levels will (likely) mean better health outcomes in future; for example, reduced future need for acute services.

In the clinical governance context, this approach would provide Boards of Management with an excellent tool to measure the overall quality of the services they provide to clients with chronic disease. The 'overall' nature of these indicators cannot be emphasised enough – successful management of chronic disease in community health requires a multidisciplinary approach, and thus such outcome measures are indicative of the total care provided to the client, as well as other factors (social, environmental, disease-state etc.).

The following section details the EIiCD clinical indicator set for cardiovascular disease, type II diabetes and COPD.

Cardiovascular disease

The EIiCD indicator set for cardiovascular disease consists of a number of components, including blood pressure, lipid levels and body mass index, as well as behavioural measurements of physical activity, smoking and nutrition. Blood pressure and lipid levels are to be measured clinically; body weight may also be measured by clinicians or self-report. The behavioural measures (and body weight) are collected via the EIiCD client survey.[4] The following dotpoints expand upon each indicator:

- *Hypertension treatment goals*: Table 1 (below) details the National Heart Foundation's current hypertension treatment goals.[5] As an indicator, the percentage of clients maintained at or below the blood pressure level appropriate for their condition could be monitored and compared over time.

Client type	Target (mmHg)
Adults ≥ 65 years (unless there is diabetes and/or renal insufficiency and/or proteinuria ≥ 0.25 g/day)	< 140/90
Adults < 65 years and/or Adults with diabetes and/or Adults with renal insufficiency and/or Adults with proteinuria 0.25 – 1.0 g/day	< 130/85
Adults with proteinuria > 1 g/day (in people with and without diabetes)	< 125/75

Table 1: NHF hypertension treatment goals (National Heart Foundation, 2004).

- *Lipid levels*: the National Heart Foundation's suggested target lipid levels are included in Table 2 (below).[6] As an indicator, the percentage of clients maintained against all of these levels, or simply the total cholesterol level, could be monitored over time.

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[4] The EIiCD client survey utilises standard health-related questions developed for use in a variety of tools, including the National Health Survey conducted by the Australian Bureau of Statistics; the relevant client survey questions are reproduced from the EIiCD client survey in Appendix II.

[5] Adapted from the National Heart Foundation (NHF) *Hypertension Management Guide for Doctors 2004*, table 5 p. 14 (National Heart Foundation, 2004). Note that the recommendation for all patients with diabetes is a blood pressure less than 130/85 mmHg; other clinical guidelines (as included below) specific to diabetes will recommend a lower level of 130/80 mmHg.

[6] Based on the NHF *Lipid Management Guidelines, 2001* (National Heart Foundation, 2001).

Lipid type	Target (mmol/L)
LDL cholesterol	< 2.5 mmol/L
Total cholesterol	< 4.0 mmol/L
HDL cholesterol	> 1.0 mmol/L
Triglycerides	< 2.0 mmol/L

Table 2: NHF lipid management goals.

- *Bodyweight*: weight reduction and/or the maintenance of a healthy bodyweight are well recognised as having positive impacts on blood pressure and overall cardiovascular risk. Current National Heart Foundation management goals for body weight are a waist circumference of ≤ 94 cm for males and ≤ 80 cm for females, with an overall body mass index (BMI) of < 25 kg/m2.[7] As an indicator, the percentage of clients with an appropriate BMI could be established and monitored over time.

- *Regular physical activity*: physical inactivity is an important risk factor for cardiovascular disease, and regular physical activity is itself cardioprotective. The current goal recommended by the National Heart Foundation is at least 30 minutes of moderate intensity physical activity on five or more days per week. The EIiCD client survey uses questions from the National Health Survey that attempt to delineate between intensity of exercise (walking, moderate and vigorous) and establish the frequency of such activity. As an indicator, the percentage of clients meeting the above criteria can be established and compared over time.

- *Nutrition*: healthy eating habits should be encouraged among clients with cardiovascular disease. Alcohol intake should be limited to two standard drinks or less per day for men or one standard drink per day for women. Low-salt diets are also recommended. The questions in the client survey relating to nutrition are designed to establish intake of fruit, vegetables, milk, alcohol and salt, and the percentage of clients giving responses within the healthy range can be determined and monitored over time.

- *Smoking cessation*: smoking cessation is an important lifestyle modification that reduces cardiovascular risk. The EIiCD client survey uses questions on smoking status and smoking history; from this information the percentage of non-smoking clients can be determined and monitored over time.

Type II diabetes

The clinical indicators described in the EIiCD evaluation framework relating to type II diabetes are described in Table 3 below. In terms of data collection, the blood glucose, HbA1c, urinary albumin excretion and albumin/creatinine ratio require laboratory data, which individual community health services may or may not have available (e.g. from in-house GPs).[8] Information regarding smoking status, alcohol intake and physical activity (along with other risk factors such as inadequate fruit and vegetable intake), and body weight data are collected by way of self-report using the client survey.

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[7] *Hypertension Management Guide for Doctors 2004*, p. 14-15 (National Heart Foundation, 2004). Note that these goals are based upon European populations and are not necessarily appropriate in all groups – for example, in Asian populations typically lower BMIs are necessary.

[8] In the context of the EIiCD initiative, it is hoped that where such data is not available within the service, there is a cooperative effort between the agency and the referring GP to coordinate such data collection, facilitated by agency key workers and practice nurses.

Indicator	Target
Blood glucose	Fasting level: < 6 mmol/L Random level: 4 to 8 mmol/L
HbA1c	≤ 7 %
LDL cholesterol	≤ 2.5 mmol/L
HDL cholesterol	≥ 1 mmol/L
Total cholesterol	< 4 mmol/L
Triglycerides	< 2 mmol/L
Cholesterol/HDL-C ratio	≤ 4.5
Blood pressure	130/80 mmHg or less (< 125/75 mmHg with proteinuria exceeding 1 g/day)
Body mass index	≤ 25 kg/m^2
Urinary albumin excretion	< 20 micrograms/minute timed collection < 20 mg/L spot collection
Albumin to creatinine ratio in morning urine	< 2.5 micrograms/mmol (males) < 3.5 micrograms/mmol (females)
Smoking	Zero
Alcohol intake	≤ 2 (≤ 1 for females) standard drinks per day
Exercise program	At least 30 minutes walking (or equivalent) 5 or more days per week

Table 3: List of clinical indicators relating to type II diabetes described in the EIiCD evaluation framework. The indicators themselves are taken from *Therapeutic Guidelines: Endocrinology* (Therapeutic Guidelines, 2004).

COPD

For COPD, the EIiCD clinical indicator set relies upon spirometry measures of the severity of the disease (Table 4), with the percentage of clients maintained within the mild severity category forming the primary measure of clinical management. Alternatively, this indicator could be used to monitor the number or percentage of COPD clients whose level of severity worsens (and/or remains unchanged) over time.

Spirometry result (PBd-FEV$_1$)	Severity
60 – 80 % predicted	Mild
40 – 59 % predicted	Moderate
< 40 % predicted	Severe

Table 4: COPD severity scale (Australian Lung Foundation, 2003).

As per the above EIiCD indicator sets for cardiovascular disease and type II diabetes, smoking status forms a very important indicator for COPD, with the percentage of non-smokers in the program being measured via the EIiCD client survey. Other potential indicators (less developed in the EIiCD context) include process measures of appropriate vaccination of COPD clients (e.g. percentage of COPD clients who have received their annual influenza vaccination) and the number of COPD clients maintained according to the Australian Lung Foundation's *Sail On* initiative. It would also be advantageous (although limited by onerous data collection) to monitor the number of co-morbidities of COPD clients in community health, as research suggests that in the primary health setting COPD clients are at an increased risk of pneumonia, osteoporosis, respiratory infection, myocardial infarction, angina, fractures and glaucoma (Soriano, Visick, Muellerova, Payvandi, & Hansell, 2005), and monitoring of the occurrence of such co-morbidities (in addition to spirometry) would provide more information regarding the progression of the disease.

Other health initiatives and chronic disease indicators

Similar approaches are being taken in other State and Commonwealth initiatives. The Queensland *Strategy for Chronic Disease 2005-2015* does not collect specific clinical indicators for disease states, but does also monitor risk factors (tobacco use, alcohol misuse, poor nutrition, physical inactivity, bodyweight etc.) as part of the evaluation framework for the overall initiative (Queensland Health, 2005). The Queensland approach relies heavily upon large-scale computer assisted telephone interviews (of both the general population and those identified with chronic disease through the initiative), as well as (for a subset of participants) direct measurements of BMI. The Office of Aboriginal and Torres Strait Islander Health of the Commonwealth Department of Health and Ageing's *Healthy for Life* initiative also utilises specific clinical indicators as part of the initiative's overall evaluation framework (Healthcare Management Advisors, 2006). The indicator set itself includes measures of both process and outcome. While the indicators used in this framework are specifically designed for use in Indigenous health (particularly the elements relating to maternal, antenatal and child health), those relating to chronic disease are broadly relatable (and similar to the EIiCD indicators). These include:

- Proportion(s) of Indigenous adults (aged 15 years or greater) diagnosed with (a) type II diabetes; and/or (b) coronary heart disease, who have a chronic disease management plan (*Healthy for Life* essential indicator 8). This indicator measures the total number of clients who have received the relevant GP care plans per the Medicare Chronic Disease Management items (MBS item numbers 721 and 723);

- Proportion of regular Indigenous clients diagnosed with type II diabetes (aged 15 years or greater):
    - Receiving HbA1c test in previous six months (*Healthy for Life* essential indicator 9 part I);
    - With last recorded HbA1c level less than or equal to 7 per cent (*Healthy for Life* essential indicator 9 part II);
    - Receiving a blood pressure test in the previous six months (*Healthy for Life* essential indicator 10 part I);
    - With last recorded blood pressure level less than 130/80 mmHg (*Healthy for Life* essential indicator 10 part II);

- Proportion of regular Indigenous clients diagnosed with coronary heart disease (aged 15 years or greater):
    - Receiving a blood pressure test in the previous six months (*Healthy for Life* essential indicator 11 part I);

    o With last recorded blood pressure level less than 140/90 mmHg (*Healthy for Life* essential indicator 11 part II).

The *Healthy for Life* indicators themselves are similar to the work of the National Primary Care Collaboratives (NPCC). The NPCC indicator set (as part of the 'monthly measures') includes many of the above indicators, although with a 12-month (rather than six month) window (National Primary Care Collaboratives, 2006). The NPCC indicators for HbA1c use a 'finer grain' approach than either the EICD or *Healthy for Life* initiatives for HbA1c levels in type II diabetes, differentiating the proportion of clients with a last reported HbA1c of: (a) less than or equal to 7 per cent; (b) greater than 7 per cent but less than or equal to 8 per cent; (c) greater than 8 per cent but less than 10 per cent; (d) greater than or equal to 10 per cent or (e) not recorded. In addition to HbA1c indicators, the NPCC approach also uses blood pressure measurement (percentage of clients with last recorded blood pressure reading less than or equal to 130/80 mmHg) and cholesterol measurement (percentage of clients with last recorded total cholesterol level less than 4 mmol/L) for diabetes, with all readings to have been taken within the previous 12 months (in contrast to the *Healthy for Life* approach).[9] For cardiovascular disease, the NPCC approach differs substantially from EICD and *Healthy for Life*; while all three programs utilise an indicator of blood pressure (less than 140/90 mmHg), the NPCC indicator set also includes medication-related indicators, including:

- Coronary heart disease (CHD) clients treated with aspirin;
- CHD clients treated with a statin; and
- Clients who have experienced a myocardial infarction in the previous 12 months treated with beta-blockers.[10]

Discipline-specific indicators

In addition to targeted disease-specific indicators, there are a number of existing indicator sets that are specific to clinical disciplines. These indicator sets would provide Boards of Management with direct measures of effectiveness within an individual service, as opposed to the disease-specific indicators such as EIiCD which are reflective of broader multi-disciplinary care. The two most developed indicator sets discussed here are the Australian Therapy Outcome Measures (AusTOMs, for use in physiotherapy, occupational therapy and speech pathology) and the Dental Health Services Victoria (DHSV) community dental indicators.

AusTOMs

The AusTOM scales were developed by allied health academics at La Trobe University based upon the UK Therapy Outcome measures, and are designed to measure global therapy outcomes within the disciplines of physiotherapy (Morris, Dodd, & Taylor, 2004), occupational therapy (Unsworth & Duncombe, 2004) and speech pathology (Perry & Skeat, 2004). Recent studies of the AusTOM scales against existing European measures have supported the validity of the scales (Unsworth et al., 2004); while the measures have been designed partly to demonstrate outcomes in a research setting, the scales have potential application in the clinical governance context. As an indicator set, the AusTOMs provide a broad 'snapshot' of client progress as determined by the practitioner, with the scales themselves providing detailed criteria for making the outcome assessments. The content of

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[9] The NPCC indicator set for type II diabetes also includes the process indicator of the proportion of clients for whom a Medicare Diabetes Service Incentive Payment (SIP) has been claimed in the previous 12 months.

[10] The NPCC indicator set for CHD also includes an indicator that describes the raw number of clients who have had a myocardial infarction in the previous 12 months.

each AusTOM scale is extremely detailed, but the broad areas of measurement for each discipline are provided in Table 5 below. The ratings (as appropriate to age) for each area are against scales of (a) impairment of either structure or function; (b) activity limitation; (c) participation restriction; and (d) distress/wellbeing.

Discipline	Therapy outcome measurement area
Physiotherapy (Morris et al., 2004)	Balance and postural control Cardiovascular system-related functions Musculoskeletal movement-related functions Neurological movement-related functions Pain Respiratory system-related functions Sensory functions Skin functions Urinary and bowel continence
Occupational therapy (Unsworth & Duncombe, 2004)	Learning and applying knowledge Functional walking and mobility Upper limb use Carrying out daily life tasks and routines Transfers Using transport Self-care Domestic life – home Domestic life – managing resources Interpersonal interactions and relationships Work, employment and education Community life, recreation and play
Speech pathology (Perry & Skeat, 2004)	Speech Language Voice Fluency Swallowing Cognitive-communication

Table 5: AusTOM areas for physiotherapy, occupational therapy and speech pathology.

For use as an indicator, an initial assessment (admission rating) is required in conjunction with the final assessment (discharge rating). Indicators based on the AusTOMs may take the form of the absolute value of any change observed across a sample of clients, or the percentage of clients in whom a predetermined level of change has been achieved. For use in the clinical governance context, further work needs to be conducted to determine the methodology for collecting indicator data, as well as consideration of the practicalities of data collection (see discussion regarding BEACH-style methodology below).

DHSV indicators

DHSV has developed a specific indicator set for dentistry which, in the community health context, is associated with the Community Dental Program (CDP). The indicator set is already in place and is currently undergoing further development and benchmarking in line with the 2005-06 *Statement of Priorities* between the Minister for Health and DHSV (Department of Human Services, 2005a). Community Health Services will already be producing quarterly reports to DHSV on the following key dental indicators:

- Restorative re-treatments within 12 months;
- Repeat emergency treatment within 28 days;
- Unplanned return within 7 days following extraction;
- Repeat endodontic re-treatment within 12 months;
- Endodontic re-treatment within 12 months by extraction; and
- Denture remakes within 12 months.

Current reporting processes for the dental indicators include benchmarking at a local, regional and state-wide level. It is envisaged that, as part of the overall clinical governance framework, this existing (and developing) system of dental indicators is incorporated into any framework developed, and potentially used as a reporting model for other indicator sets. In addition to the monitoring and benchmarking of these indicators, DHSV has set targets within its *Statement of Priorities* for several indicators (e.g. denture remakes within 12 months) of 5 per cent.

General implementation considerations

The use of such discipline-specific clinical indicators such as the AusTOMs for *all* clients receiving a service is impractical—there is considerable time involved in the clinical assessment of outcome measures, which would detract from actual service provision. Considerable efforts have been made to develop the dental indicator set and its data collection/reporting processes are advanced relative to other data sets. For measures such as the AusTOMs, individual services may with to consider a deployment methodology similar to that of the BEACH study in general practice where, during a specified period of time, consecutive clients are assessed by practitioners involved in the exercise (Hargreaves, 2001). For other disciplines (such as counselling) outcome measures are more difficult to define, and a clinical audit approach (discussed below) could also be used pending the development of more sophisticated indicator sets. The discipline-audit approach might be used to determine the attainment of outcomes relative to individual goals described in care plans as a basic measure of effectiveness.

Application of effectiveness indicators in community health: an example

The potential application of clinical indicators relating to particular chronic disease states, such as type II diabetes, is of increasing importance to the community health sector in Victoria. The current policy environment, outlined in *Community Health Services – Creating a healthier Victoria* (Department of Human Services, 2004), "supports integrated and effective primary heath care," and the clinical governance approach will require the establishment of indicators that demonstrate the quality of care provided (in terms of clinical outcomes) and the areas in which further efforts must be made. As an example of a comparable situation in which clinical process and outcome data were collected in primary health care management, the Quality of Care in Diabetes study conducted in North Carolina with low-income clients is instructive (Bell et al., 2001). This study collected data from 429 diabetic clients from 11 agencies servicing low-income populations (community health centres, free clinics, primary care and public health clinics) using similar indicators to those described above. For the overall study group, the following results were observed (Table 6):

Indicator	% clients
HbA1c measurement – demonstration of at least one measurement during calendar year	52.6%
HbA1c control – level less than or equal to 9.5%	39.6%
Lipid measurement – demonstration of at least one measurement during calendar year	44.5%
LDL cholesterol control – level less than 130 mg/dL	23.5%
Nephropathy assessment – documentation of at least one measurement during calendar year	7.9%
Blood pressure measurement – documentation of any measurement of blood pressure during calendar year	77.9%
Blood pressure control – Systolic blood pressure less than 140 mmHg *and* diastolic blood pressure less than 90 mmHg	30.0%
Complete foot assessment – clients who received a visual foot examination, pedal pulse examination and pedal sensory exam during calendar year	3.3%
Dilated eye examination – documentation of eye examination performed during calendar year by either an ophthalmologist or an optometrist	6.5%

Table 6: Summary of results for indicators used in the North Carolina study of Quality of Care in Diabetes (Bell et al., 2001).

In the quality improvement and clinical governance context, such findings might suggest to the responsible Board of Management that a review of clinical processes relating to the provision of certain assessments (nephropathy, ophthalmic and podiatry in this case) is required in order to assure the quality of service provided to diabetic clients. Secondary quality improvement activities in this case may seek to increase the numbers of clients achieving certain levels; for example, increasing the percentage of clients who have received a HbA1c test in the previous 12 months.

Clinical audit

Records audits were described above under the dimension of appropriateness in the context of providing an indicator of the provision of appropriate care planning. An extension of the auditing process into clinical audits would provide process and outcome measures of effectiveness of care, especially in those disciplines where a standardised indicator set is yet to be developed. Clinical audit "compares actual practice to a standard of practice" and identifies deficiencies (NZ Ministry of Health, 2002); as such, it is considered a basic quality improvement method for assessing and improving effectiveness in practice (Seddon & Buchanan, 2006). In some settings, clinical audit is often likened to clinical research, as they are both viewed as activities that aim to improve the quality of health care. This view is only partly correct:

> Clinical research is […] directed at filling the gap between what is known and what needs to be known to provide high quality healthcare (i.e. extending the frontiers of "current professional knowledge") while audit measures the gap between contemporary best practice for a particular clinical management and what actually happens in a particular service (Seddon & Buchanan, 2006).

The use of audits to assess effectiveness of systems as a tool to guide continuous quality improvement is considered to be a major component of any clinical governance framework (Johnston, Crombie, Davies, Alder, & Millard, 2000; Taylor & Jones, 2006), and has strong links with the dimension of appropriateness (where audits of client records for care plans has already been discussed).

There are numerous options for the use of clinical audits as indicators for clinical governance in community health. Large-scale clinical auditing to determine effectiveness of practice is not a practical option, and so Boards of Management may wish to nominate areas they would like to see audited; for example, an extension of the appropriateness audit above in which the initial goals listed in care plans are compared to eventual outcomes, or discipline and/or disease-specific audits of records for effectiveness. An example of a discipline- and/or disease-specific audit is the 1999 English study of three types of audits in physiotherapy, examining (1) the type/extent of measurement used for joint and muscle strength; (2) management of lower back pain; and (3) intervention effectiveness in lower back pain and total knee reconstruction (Turner et al., 1999). This study audited 1254 records from clients attending both acute and outpatient services over a two-year period, demonstrating that initial assessments were recorded in 86 per cent of cases with other required documentation recorded less frequently, indicating overall a failure to follow documentation standards and perform outcome measurement, and considerable scope for quality improvement initiatives. Similar auditing methodology could be used to assess other disciplines and/or discipline/disease pairs; for example, auditing of podiatry client records against the Australian Podiatry's *Basic Foot Screening Checklist* or the overall *Australian Podiatric Guidelines for Diabetes* (Australian Podiatry Council & Diabetes Australia, 1997).[11]

Such use of general guidelines or recommendations as the basis for the audit process has been used successfully in the Australian context, with a quality of care audit of diabetic clients conducted in general practice, which included as an indicator the provision of retinal and foot examinations (process-based indicators) as well as metabolic indicators (Ward, Lin, Heron, & Lajoie, 1997). This audit study found that while 93 per cent of clients had their blood pressure measurement recorded in the previous 12 months, only 27 per cent of clients had an appropriate HbA1c level, 37 per cent had received a retinal examination in the past 12 months and 32 per cent received a foot examination. This study is also notable from a clinical governance perspective in that in addition to the auditing of client records, the clients themselves were given self reported quality of life, service utilisation and satisfaction questionnaires as part of the audit study. The analysis of the questionnaire data and the audit data found that those clients attending their general practitioner frequently (more than six times in six months) were **no more** likely to have had HbA1c testing than those clients attending infrequently. While the addition of targeted questions to audit procedures would increase the workload on services, Boards of Management may wish to incorporate such an approach into future iterations of their clinical indicator framework. If this approach were to be taken, additional information technology and other resources would be required to coordinate the audit process and standardise data collection for community health services; potentially this can be explored in the context of the development of the client information systems in the healthSMART initiative.

In addition to decisions on audit types, individual services and their respective Boards of Management will need to decide upon an appropriate audit cycle as part of their clinical

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[11] A method of quality assessment for audit criteria in angina, asthma and type II diabetes and review by expert panels is described by Campbell et al., (2002).

indicator framework. A typical audit cycle usually includes the following elements (Seddon & Buchanan, 2006):
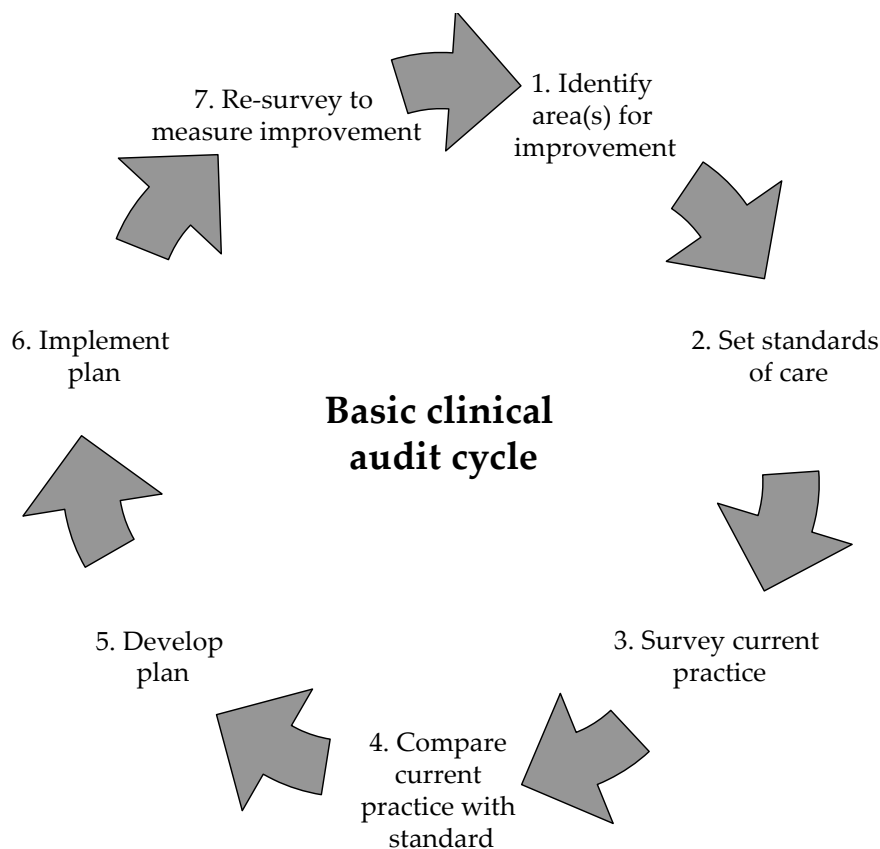

Figure 3: Basic clinical audit cycle, adapted from Seddon & Buchanan (2006).

From the above points in the audit cycle, Boards of Management and/or clinical staff would nominate an area for audit (point 1); relative standards would then be identified (e.g. specific tools or professional guidelines, treatment goals etc. [point 2]) and client records would be identified and audited (point 3). The indicator(s) reported to the Board of Management are collated as part of the framework (point 4), and responded to as appropriate (points 5 and 6) and rechecked after an appropriate time period (point 7). A hypothetical example might encompass the auditing of client records for (a) care plans and (b) goals achieved relative to those outlined in the care plan. The standard of care that the Board may wish to set would be the presence of a care plan for *x* per cent of chronic and/or complex clients, along with standard measures for chronic disease management (e.g. appropriate body mass index measurement). Identification and auditing of client records takes place, and the data collected is collated into summary indicators (percentage of client records with documented care plans, percentage of nominated/specific goals achieved etc.). Where the presence of care plans is below the desired/appropriate levels, quality improvement initiatives can be designed over time to bring positive change in the indicator when re-auditing takes place (e.g. over a 12-month period).

It should be noted that in determining the audit to be conducted and the interpretation of the results, there must be consideration of the potential variability in the information contained in client records. In a study across general practices in the UK primary health sector (auditing care of high-risk clients and of cardiovascular disease), the study was limited in examining

certain indicators due to information technology deficiencies (McColl et al., 2000). Any audit of clinical practice must have regard to both the clinical relevance of the data set as well as the practicalities of data collection (Mason, Ingham, & Parnham, 2005).

System indicators: practitioner assessment of organisational effectiveness

The effectiveness of care for chronic disease management by community health can be measured by way of process and outcome indicators for disease states (discussed above) as well as by way of practitioner assessment of the service's ability to provide chronic disease care. This practitioner assessment would thus form an indicator of quality of service provided *by the system* in such an important area. In the UK, practitioner assessment (via survey) has been used in assessing organisational effectiveness in a clinical governance context (Taylor & Jones, 2006). For use in community health, the Assessment of Chronic Illness Care (ACIC) tool could be included into a clinical governance framework. The ACIC tool is a short survey of clinical practitioners that focuses upon the *organisation* of care, rather than process or outcome (Bonomi, Wagner, Glasgow, & Von Korff, 2002). The ACIC itself is based upon the six areas of system change of the Wagner Chronic Care Model (CCM) (Wagner et al., 2001; Wagner, Davis, Schaefer, Von Korff, & Austin, 1999), which:

> …views the health system as part of the larger community. Effective chronic illness management requires and appropriately organized health care system linked with necessary resources available in the broader community (Wagner et al., 1999).

The ACIC tool has been used to directly evaluate the implementation of the CCM (Kaissi & Parchman, 2006), and the CCM itself will become more prominent in Victoria through DHS's Integrated Chronic Disease Management (ICDM) initiative as well as the EIiCD initiative.

In the context of a clinical governance indicator, the ACIC tool could be administered to practitioners on a regular basis (e.g. 6- or 12-monthly), and the results for each of the six subscales being reported to the Board of Management in the form of support ratings for each organisational element. The ACIC scale ranges from 0 to 11, and divided into four support ratings: little support (0 to 2), basic support (2 to 5), good support (5 to 8) and full support (8 to 11); each component of the subscales contains descriptors for the levels of support designed to standardise responses and increase reproducibility.[12] By way of an example of the application of the ACIC in the quality context, a slightly modified version of the tool has been used in the Northern Territory to evaluate the stage of development of community health centre's chronic illness care and the quality of care provided to type II diabetic clients (Si et al., 2005). It was found that while many of the centres under study were in the low- to mid-range of development, higher scores for organisational influence, delivery system design and clinical information systems were associated with increased control of clinical indicators of diabetes (HbA1c, blood pressure and total cholesterol in this case). The relationship between the ACIC and actual clinical outcomes demonstrates that in the clinical governance context the tool can potentially provide Boards of Management with valuable information regarding a core service, and that quality improvement activities focused on system-related elements (and monitored over time by improvements in ACIC scores) will result in better clinical outcomes for clients. A proposed indicator specification for the use of the ACIC tool is provided in Appendix I.

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[12] The full ACIC tool is freely available for use and is reproduced in Appendix III.

Dimension 4: Acceptability

The dimension of acceptability in this framework will primarily consist of direct measures of client satisfaction with services. Two broad indicators will be used to report on acceptability: the Primary Health Care Consumer Opinion Survey (PHCCOS) as well as compliments/complaints received by the service.

PHCCOS

The PHCCOS is a survey tool designed to collect information regarding client satisfaction with the service environment, the services provided and the degree to which any special needs (physical disability, cultural/linguistic background) were accommodated by the service. Currently, DHS requires CHS participation in distributing the survey to a sample client group and to integrate the findings of the survey into their activities (Department of Human Services, 2006a).

The sixteen items of the PHCCOS, in the context of the VQC dimensions of quality, can be separated into elements related to the dimensions of acceptability and access. The utility of the PHCOSS will thus be considered in two parts in this framework. The elements of the PHCOSS that are relevant to the dimension of acceptability include:

- *Satisfaction with centre environment* (questions 12(a) to 12(g)): this section of the PHCCOS measures client satisfaction with waiting times, information regarding appointments, waiting room environment, provision of information about other services available, amount of time spent with health professional, attitude of staff and cost of service;
- *Satisfaction with service provision* (questions 13(a) to 13(f), and questions 14 and 15): this section measures client satisfaction with various aspects of the professional service they received that day (e.g. information provided, concern shown, skill, assistance with health problem, ability to self-manage as a result etc.); and
- *Satisfaction with provision for special needs* (questions 16(a) to 16(c)): this section measures client perception of the service's responsiveness to any special needs, such as cultural/linguistic requirements and physical disabilities.

Satisfaction with service environment and provision

For the first two domains (satisfaction with environment and service provision), the standard reporting of results for the PHCCOS (results being prepared by AIPC for DHS in the ongoing PHCCOS project) includes a percentage breakdown in terms of satisfaction rating for each subquestion posed in the survey, similar to the example below for PHCCOS question 12(a):

	Very satisfied	Satisfied	No opinion	Dissatisfied	Very dissatisfied
How satisfied were you with the waiting time to get an appointment?	60%	30%	4%	3%	3%

Table 7: Example client satisfaction results for question 12(a) of the PHCCOS.

Perhaps of greater utility for the purposes of an indicator reported to the Board of Management, the AIPC-generated data report contains an overall 'domain score' for both satisfaction with the environment and with service provision. This overall score relates to the percentage of 'very satisfied' across all relevant items within the domain; for example

	Very satisfied	Less than very satisfied
Satisfaction with service provision	45%	55%

Table 8: Example domain score for overall satisfaction with service provision from the PHCCOS.

Reporting of the overall domain scores as indicators of acceptability for the Board of Management is likely to be more suitable than reporting individual items for each section of the survey. Over time, benchmarking of these scores would be possible to determine any change in acceptability; alternatively, Boards of Management may wish to set satisfaction targets to be achieved over time. 'Red flags' associated with the domain score could be further investigated by responsible quality officers/Board subcommittees in the first instance by determining which particular item(s) within the domain are being scored at lower levels of satisfaction.

The proposed indicator specifications for acceptability of service environment and provision are detailed in Appendix I.

Satisfaction with provision for special needs

Item 16 of the PHCCOS relates to the provision of services to clients with special needs. The three sub-items relate to: (a) problems due to language spoken; (b) cultural sensitivity and (c) provision for physical disabilities. The response types for these items are 'yes-no-not applicable' for all clients; the reporting of results for these PHCCOS items provides the following breakdown of responses:

- For item 16(a) (difficulties encountered relating to language other than English), responses are broken down into percentage of clients whose first language is not English; from responses in this category, the percentage of clients answering 'yes' or 'no' to experiencing difficulties is reported.
- For item 16(b) (sensitivity to cultural background), responses are broken down into the percentage of clients identifying themselves as being from a culturally and linguistically diverse (CALD) background; from responses in this category, the percentage of clients answering 'yes' or 'no' to the question is reported.
- For item 16(c) (difficulties for physically disabled clients), responses are broken down into the percentage of clients identifying as having a physical disability; from responses in this category, the percentage of respondents answering 'yes' or 'no' to the question is reported.

Unlike the previous two accessibility-related sections of the PHCCOS, there is no 'summary indicator' that would serve to concisely report to Boards of Management on performance on these items. It is recommended here that the percentages of clients (of the relevant types) reporting difficulties for each item are reported to Boards of Management as the indicators of performance on these items; for example, the clients identifying themselves as being from a CALD background, the percentage reporting that the service **was not** sensitive to their cultural background. Over time, it will be possible to benchmark performance on these indicators; Boards of Management may also wish to nominate percentage targets for each. Red flags for these indicators would be related to indicators higher than the benchmark/target. For the language and cultural PHCCOS items, more detailed investigation of red flags for these indicators would involve examination of the demographic results contained in the PHCCOS data reports, which will provide information about cultural background/main

language spoken, which may assist in identifying which group(s) of clients may not be provided for by the service.

The proposed indicator specifications for provision for special needs are included in Appendix I.

Compliments and complaints

> Complaints are a vital form of consumer feedback that provides unique and valuable information to an organisation concerned with quality improvement and risk management (Health Services Review Council, 2005).

The above quote is taken from the recent Health Services Review Council (HSRC) *Guide to Complaint Handling in Health Care Services*, which provides a model for complaints handling in Victoria. Similar to the Victorian Quality Council's framework, the HSRC complaints handling model has been designed for the acute sector; however, the broad principles and procedures it recommends are applicable to *all* health care providers and is designed to build upon existing systems and processes within organisations. The principles outlined by the *Guide* envisage a system of complaints handling and resolution that is integrated into the whole of the organisation, one where (Health Services Review Council, 2005):

- Complaints are used to identify gaps in the quality of the service;
- Investigation of complaints is collaborative; and
- Information is shared among management teams, administrators and consumers.

While the focus is on complaints and their handling, the *Guide* also indicates that health care services should create a system where clients are encouraged to give feedback – whether that feedback represents complaints or compliments. The *Guide* outlines what key features should be present in a health care feedback system, including (Health Services Review Council, 2005):[13]

- *Accessibility*: clients (and staff) are encouraged to give feedback via a system that makes it easy to do so;
- *Responsiveness*: the system is both receptive to complaints and treats complaints seriously (regardless of perceived unreasonableness or triviality);
- *Transparency and accountability*: the handling of complaints by the organisation is clear and open to staff and clients;
- *Privacy and confidentiality*: the service respects the privacy of clients making complaints; and
- *Reporting*: systems must exist to report on the outcomes and analysis of complaints. This includes reporting back to those who have made the complaint (where they have identified themselves), to staff (those involved and, where necessary, other staff where broader issues are involved) and to the quality/management systems within the organisation.

Many community health services will already have a complaints (and compliments) system in place, and may have already styled their system on the HSRC *Guide*. Assuming that such systems are in place (and being developed where they are not), indicators of activity should be incorporated into the accessibility dimension of the organisation's clinical governance framework. Such indicators reported to the Board of Management would relate to both the process and outcomes of complaints, for example:

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[13] A similar guide to handling of complaints in the context of health care organisational quality management is that by NSW Health (2001).

- The number of complaints received within a given reporting period (e.g. quarterly);
- Where complaints are not immediately handled/resolved (e.g. within several days), the percentage of complainants who received an acknowledgement that their complaint is being handled as efficiently as possible (where complainants have identified themselves);
- The percentage of complaints not investigated or resolved within a certain timeframe (e.g. 21 days); and
- Percentage breakdowns of the areas (clinical, administrative or other) from which complaints have arisen and (where possible) the types of issues raised by complaints (e.g. clinical treatment received, administration aspects etc.) and a potentially also a rating of the seriousness of/risk posed by the complaint.

As with other suggested indicators within this framework, benchmarking of complaints handling may be possible as data becomes available. In this instance, Boards of Management may wish to set definitive targets for the handling of complaints; for example that 90 per cent or more complaints are investigated and/or resolved within 21 days of receipt.

In terms of compliments received by a service, handling and reporting would be quite different to that of complaints; a potential indicator to report in this instance might be a complaints-to-compliments ratio, where the number of complaints received in a given time period is divided by the number of complimentary pieces of feedback received in the same time period. The feedback system will naturally vary between services (e.g. a 'suggestion box' system through to formal satisfaction surveys) but its summary and analysis should form a quality indicator to be reported as part of a clinical governance framework. New and/or redesigned feedback systems should give consideration to the broad framework of the HSRC *Guide*.

Dimension 5: Access

The two major elements of the quality dimension of access that should be reported to Boards of Management in a clinical governance context relate to demographics and demand:

- *Demographics*: the VQC framework indicates that a health service "should offer equitable access to health services for the population they serve". For community health, there are considerations of both geography (catchment areas) and social factors (age, sex, ethnicity and socio-economic status) when defining the 'population served', which is often specifically targeted to certain groups in the local area (with low socio-economic groups being of particular focus). It is therefore necessary to provide Boards of Management with some indication of how this aspect of the service is being delivered, in terms of what groups have used the service and how representative this is of the local population and/or targeted groups. This information is also of use when interpreting clinical indicators relating to effectiveness, given the relationship between demographic factors and overall health outcomes.
- *Demand*: indicators relating to demand management should also be reported to Boards of Management on a routine basis. The most obvious measure in this category would be that of service utilisation waiting times.

The suggested indicators for this quality dimension of the framework will reflect these two aspects of access.

Demographic-type indicators of access

Considerable demographic data is routinely collected by CHSs, particularly associated with the use of the Service Coordination Tool Templates (SCTT) which is in turn captured by the

SWITCH software system. Important demographic information that can be accessed via SWITCH includes:

- Age and sex
- Country of birth, preferred language and need for interpreter services
- Indigenous status
- Pension status, health care card holder status, DVA entitlement etc.
- Living arrangements and accommodation
- Employment status

Overall summary data relating to each of these demographic variables can, in the first instance, be compared to data for the local area available from the Australian Bureau of Statistics (ABS). Such comparisons would enable services to determine if their client base is representative of the local population (e.g. in terms of age or country of birth) and in certain circumstances determine if they are meeting any client type targets (e.g. in terms of socio-economic variables such as employment status). Two potential examples of the use of such indicators would be:

- *Country of birth*: summary client data can be used to identify percentages of total clients with a particular country of birth. Using the ABS Basic Community Profiles (BCP), this percentage can be compared against the composition of the local area.[14] For example, 19 per cent of the clients of the service may have been born in Italy, compared to a resident population in the area of only 4 per cent. This may indicate that the service has been particularly successful in engaging with/providing services for that particular group and/or there are fewer services in the area responsive to that segment of the community. The reverse situation – very few clients (e.g. 0.5%) from that group – may indicate a lack of engagement by the service with the group which may need to be investigated further. Similar comparisons can be made for indigenous status, language spoken at home and (to a limited extent) living arrangements and accommodation.

- *Employment*: the ABS Basic Community Profiles give data on the total number of employed and unemployed persons in an area, as well as total labour force/not in labour force. These figures can be approximately compared to the SCTT classifications of employed, unemployed and 'home duties/other' (for those not in the labour force) although the exact classifications for these categories are not entirely comparable.[15] For services that are targeting particular socio-economic groups (e.g. the unemployed, health care card holders) such data may form a useful indicator of how the service is engaging with these groups. For more specific data sets (for example, the percentage of health care card holders in an area) different data sets are required.[16]

While demographic data of this type are (by necessity) static in nature, they can provide useful benchmarks in the population of clients utilising the service. Boards of Management may wish to examine such data (if not doing so already) as part of the overall clinical governance framework as a measure of quality and accessibility of their service to the community they serve.

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[14] 'Local area' in this context would usually be considered to be the local government area (LGA) which the community health service is based; however, catchment areas may vary from this standard. It is possible to collate data from ABS community profiles on the basis of geographic units smaller than/different to the LGA by using statistical local areas (SLAs).

[15] More contemporary data is available at http://www.workplace.gov.au/lmip/ which gives data on various aspects of employment/unemployment (e.g. duration of unemployment); however, the geographical units used to organise this data are far larger than the typical local area serviced by a community health service.

[16] For statistics on health care card holders and other benefit payments within a local area, refer to http://www.humanservices.gov.au/publications/electorate_data/cl.htm (data only available at the federal electorate level).

In addition to comparisons with datasets from the wider community, a useful CALD indicator obtainable from SWITCH data would be the proportion of total clients requiring interpreter services. Changes in this indicator over time may form a red flag for quality and accessibility; for example, sustained increase in interpreter services (or particular languages) that will require additional resource allocation.

Demand-type indicators of access

Potential indicators relating to waiting times could be adapted from the demand management data submitted to DHS alongside the quarterly data as per the July 2006 *Waiting Time Measurement within Community Health Services: Practice Guidelines* (Department of Human Services, 2006c), mindful that community health demand management reporting is currently under review (Department of Human Services, 2006b).

In general, demand management data represents a direct indicator of the time taken for clients to access particular services. The current DHS practice guidelines require the reporting of the time between initial needs identification and (a) comprehensive/service specific/specialist assessment and (b) service provision. Waiting times are further categorised into levels of priority (urgent, routine and low). Reporting of waiting times in accord with DHS guidelines as an indicator of access should form part of the overall clinical governance framework within the service, with appropriate benchmarking/targets set over time.

In addition to the formal demand management data, the PHCCOS data contain a potential indicator of access in the form of question 6 (visits to the service in a 12-month period). The percentage of clients accessing the service three or more times per year may form an indicator of access;[17] for services with large numbers of chronic and/or complex clients, a decrease in this percentage may indicate that clients with complex needs are not able to access necessary services in a timely manner.

Dimension 6: Efficiency

Providers of health services must ensure that resources are allocated in a way which maximises value for money and benefit for clients. Efficiency in a broader context is the attainment of desired effects with a minimum of waste. In this respect the dimension of efficiency intersects with the previous dimensions—appropriateness and effectiveness, for example—as representing 'desired effects'. In terms of basic service provision, a measure of efficiency is thus 'do not attends' (DNA) – appointments not kept by clients. DNA appointments represent a potential 'waste' of service time if arrangements are not made to fill the available appointment. Large DNA numbers can potentially reduce the ability to provide services to clients in a timely manner, and thus create demand management considerations. Demand management indicators (mentioned above) will also have an efficiency dimension to their interpretation by Boards of Management as an additional marker of less efficient service provision. Likewise, DNA numbers may have cross-dimensional interpretation – large DNA numbers within a specific service may also indicate that clients are not successfully engaged with that particular aspect of service, and thus have an acceptability aspect.

Boards of Management may also wish to consider traditional financial measures of efficiency (e.g. costs per client/service provided) as an additional system of indicators under the broader heading of efficiency (utilising existing governance systems).

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[17] This percentage would be the combined total percentage of clients reporting visiting the community health service either three to five times per year and those reporting visiting five or more times per year, as per the PHCCOS response options for question 6.

Additional framework elements for consideration

Beyond the potential indicators outlined above, a comprehensive clinical governance framework for community health will need to encompass and monitor other key aspects of activity such as health promotion and services for children, youth and adults. Health promotion indicators would need to address the specific areas of activity (e.g. smoking cessation) as well as integrated approaches. For children and family services, the *Children, Youth and Families Act 2005* (Vic) requires adherence and monitoring of a variety of performance standards and the framework developed as part of the *Every Child Every Chance* program should also be considered by Boards of Management as part of the overall clinical governance approach.

Summary: considerations for developing indicators at a service level

In the development and implementation of any clinical performance measure, several key steps have been identified as critical to ensuring validity and usefulness (Mainz, 2003b; Rubin, Pronovost, & Diette, 2001b). The following summarises how these steps for clinical performance measures in general are potentially applicable in the context of clinical governance in community health:

- *Definition of audience and purpose of measurement*: in general, the selection of a measure requires consideration of the audience—clinicians, administrators and the public have a shared interest in quality, but the type/detail of information required by each differs. For clinical governance, the audience will be the Board of Management of individual community health services, as well as staff, DHS and the community served. The purpose of the measures used will be to provide Boards of Management with an indication of the quality of service provided for the purposes of good governance and quality improvement.

- *Choice of clinical area to evaluate*: the choice of area in general will depend upon many factors such as volume, costs, risk etc. In the community health setting this will also be a factor—given limited resources, intensive quality improvement efforts will be best spent in areas of high volume (e.g. services for diabetic clients or the aged) and/or high risk.

- *Assessment team*: in general, this will require expertise in measurement, the clinical area in question and in project administration. In the clinical governance context, a partnership will be required between Boards of Management and staff to administer any quality measures, with quality managers and/or staff responsible for quality playing a key role in the collection, interpretation and dissemination of information as well as carrying out subsequent quality improvement activities. Clinical expertise would be potentially augmented by individual community health services forming partnerships with other services to form panels with expertise to decide upon (for example) clinical audit protocols within their disciplines for use within each contributing service.

- *Selection of aspect of care or criteria for measurement*: one major consideration under this heading will be the feasibility of measurement, within which data collection abilities will be a factor. Beyond the specialised context of initiatives such as EIiCD (with key workers employed to coordinate the provision of services), the collection of self-reported measures via client surveys and clinical data such as HbA1c levels will be limited by factors such as staff time, coordination of data sources and information technology capabilities (for the recording and retrieval of data). The aspect of care for measurement will also take into consideration the VQC framework: for a given community health activity – podiatry, for example – measurement may be taken from the perspective of:
  - *Safety* – for example, an audit of infection control practice or monitoring the rate of adverse events within the podiatry service);
  - *Appropriateness* – clients receiving podiatry care as outlined in individual care plans;
  - *Effectiveness* – audits of the attainment of goals relative to care plans;
  - *Acceptability* – client satisfaction with the provision of service;
  - *Access* – waiting times for podiatry services; and
  - *Efficiency* – the numbers of DNAs for the podiatry service.

- *Measure specifications*: the unit(s) of analysis, the intended sampling frame (and exclusions) and the methodology for data collection must be defined in the specifications

for indicators used. Some examples of specifications are provided in Appendix I for reference. For clinical governance purposes, Boards of Management will require clearly defined specifications regarding each indicator to aid interpretation; for staff, specifications will provide the framework in which they contribute to the overall clinical governance scheme. In the case of clinical audits (where the protocol itself has already been defined) the specification will guide the systematic application of the protocol; for example, clients that should be excluded from the audit, such as clients 'new' to the service for whom outcomes of services received are not yet apparent.

- *Preliminary testing*: following the selection of measures, a training phase will be required to establish the appropriateness of the specification and methodology, as well as providing staff with the opportunity to familiarise themselves with the process and to provide feedback.

- *'Scoring' specifications*: the definition of what will constitute 'acceptable performance' for any given measure will be complex and contestable, particularly in the absence of benchmarks to guide interpretation of measures and/or expectations. In the initial phases, Boards of Management may be required to set arbitrary targets for performance against which actual performance will be measured.

In total, the application of indicators for clinical governance in community health will require a careful and thoughtful approach to both the mechanics of data collection as well as the interpretation of that data. The deployment of indicators should involve a multi-level consultation process between Boards of Management, staff (both clinical and administrative), clients (where appropriate) and external stakeholders and experts. The use of effectiveness indicators, such as the dental indicator set or those described for the EIiCD initiative, is either already occurring or in the process of development; such data sources should be harnessed by Boards of Management as an important component of their clinical governance structure, current or future.

Appendix I: Suggested indicator specifications

The following section provides a guide to how specifications for individual clinical indicators might be developed in individual community health services. The specifications that follow are based on some of the potential indicators described above, and with consideration to the steps required in the development of any measure of clinical quality and performance (Rubin et al., 2001b).

For the purposes of developing a suitable indicator framework in community health, an important component of each indicator will be the red flag. With the development of a framework that is routinely administered within a service, a system of red flags are necessary in order to alert the Board of Management to any given indicator out of the normal/acceptable range and thus avoiding 'flooding' Boards with large amounts of unnecessary indicator data. The overall clinical governance program within the service should locate responsibility for detailed consideration of the data with particular groups/individuals; for example, quality subcommittees, quality managers or particular staff members. As such, in the event of a red flag for a given indicator, Boards of Management will be able to appropriately delegate responsibility for (a) determining the detailed nature of the problem; and (b) performing activities necessary to correct immediate problems and/or implement appropriate quality improvement activities. Follow-up of red flags would thus be reported to Boards at a later time to satisfy governance responsibilities.

Incident monitoring and reporting	
Quality dimension	Safety
Objective and rationale	To report to Board of Management the frequency of incidents relating to the safety of clients/staff occurring within the service during a given period.
Definitions	*Incidents/categories of incidents:* refer to DHS instructions to funded services regarding the reporting of incidents.
	'Other' incidents: incidents that do not 'fit' under DHS reporting instructions but are, in the opinion of staff/management, of sufficient local importance that they should be reported on a routine basis.
Indicator data	Frequency data obtained from internal processes for incident reporting, including those Category III incidents not reported to DHS under the current departmental instructions.
	'Other' category data obtained from internal incident reporting processes which indicate that these incidents do not 'fit' under departmental categorisation.
	Frequency data reported according to appropriate time unit (monthly, quarterly etc.).
	Historical data also presented (e.g. previous two years), with mean frequencies calculated for appropriate time periods; that is, average number of incidents per quarter for previous 2 years to streamline reporting.
Red flag	Sudden or sustained increase in incidents (at any category) reported. Raw frequency data can be investigated further by responsible staff and/or Board subcommittee to determine specifics that may require further action; for example, incident reports cross-tabulated against specific services/units within the CHS to determine any pattern to the increase; further investigation other local factors that may be contributing to observed increase.

Adverse events reporting	
Quality dimension	Safety
Objective and rationale	To report to Board of Management the frequency of adverse events occurring within the services during a given period and the handling of such events.
Definitions	*Adverse event:* an incident in which unintended harm resulted to a person receiving health care.
Indicator data	Frequency data reported to the Board of Management derived from the number of adverse events reported within the service by clinicians.
	Differentiation in reports between adverse events suspected/confirmed as arising from care within the service, and suspected/confirmed events occurring as a result of care from other providers.
	Frequency of follow-up, root-cause analysis or internal peer-to-peer clinical discussion of reported adverse events should also be reported to the Board of Management as an indicator of how practice staff have dealt with individual adverse events reported.
	Historical information (e.g. previous two years) regarding adverse events should also be reported in a similar manner to indicator 1.1 as a benchmarking tool to contextualise the number of adverse events reported.
Red flag	Boards of Management should make individual decisions regarding the red flag status of this item. Similar the previous indicator, a sudden or sustained increase in adverse events reported should be considered to be a red flag, but Boards may also wish to tie the red flag to the number of incidents that have been appropriately followed up, analysed and/or discussed by responsible staff/Board subcommittees.

ACIC Practitioner Assessment of Organisational Effectiveness	
Quality dimension	Effectiveness
Objective and rationale	To provide an indicator of the organisation's effectiveness in providing chronic disease management services from the perspective of the 'on-the-ground' clinical staff.
Definitions	*ACIC tool:* the Assessment of Chronic Illness Care tool; a survey based upon the Wagner Chronic Care Model (Bonomi et al., 2002). *Clinical staff:* all clinical practitioners from all disciplines within a healthcare service engaged in the delivery of care to clients with chronic disease.
Indicator data	ACIC tool administered to all clinical staff on a routine basis (e.g. 6- or 12-monthly). Results are collated and reported to the Board of Management as an effectiveness indicator for chronic disease care. More sophisticated data analysis (e.g. tests for statistically significant difference) possible over time as more data is collected from clinical staff.
Red flag	Boards of Management may set individual targets for elements of the ACIC (e.g. minimum of 'good support' for the community linkages subscale) as appropriate for their services. At a minimum, all ratings of 'little support' should be considered for further improvement by Boards of Management.

Client satisfaction with service environment and provision	
Quality dimension	Acceptability
Objective and rationale	To provide Boards of Management with an indicator of client satisfaction with elements of the service environment.
Definitions	*PHCCOS:* Primary Health Care Consumer Opinion Survey.
	Domain score: the overall score for the service environment domain of the PHCCOS.
	Service environment: PHCCOS items: 12(a) waiting time; 12(b) appointment information; 12(c) waiting room comfort; 12(d) service information; 12(e) time spent with professional; 12(f) reception staff attitude; and 12(g) cost.
	Service provision: PHCCOS items: 13(a) information provided by professional; 13(b) professional's concern; 13(c) discussion with professional; 13(d) self-management opportunities offered; 13(e) professional skill; 13(f) extent visit assisted; 14 improvement in understanding; 15 assistance in managing problems.
Indicator data	The PHCCOS is routinely administered to CHS clients as part of the DHS PHCCOS project, with results reported by AIPC.
	The statistical reports generated include the percentage of responses at each satisfaction level for all PHCCOS items, as well as an overall domain score (percentage of 'very satisfied' ratings) for either domain of the survey, which forms the indicator to be reported to the Board.
	Over time, the reporting of previous scores will be possible to allow benchmarking of performance on this indicator.
Red flag	Boards of Management may wish to benchmark this indicator against previous performance as data becomes available. Alternatively, a pre-determined level for this indicator could be decided upon. Reporting of these indicators at a lower level than the benchmark/nominated target would constitute a red flag, to be investigated by the responsible quality officers/Board subcommittee by closer examination of ratings for individual survey items.

Client satisfaction with provision for special needs	
Quality dimension	Acceptability
Objective and rationale	To provide Boards of Management with an indicator of client satisfaction with the service's provision for special needs
Definitions	*PHCCOS:* Primary Health Care Consumer Opinion Survey *Special needs:* the special needs included in the PHCCOS include provision of services for (a) clients whose first language is not English; (b) clients of differing cultural backgrounds; and (c) clients with physical disabilities.
Indicator data	The PHCCOS is routinely administered to CHS clients as part of the DHS PHCCOS project, with results reported by AIPC. The statistical reports for item 16 of the PHCCOS provide a breakdown of clients identifying themselves as having (a) linguistically diverse background; (b) culturally diverse background; and (c) physical disabilities. The indicators reported to the Boards of Management should be the percentages of these identified clients reporting: (a) 'yes' to language problems encountered; (b) 'no' to sensitivity to cultural background; and (c) 'yes' to problems encountered because of physical disability. Over time, the reporting of previous scores will be possible to allow benchmarking of performance on this indicator.
Red flag	Percentages for any of the indicators greater than benchmark and/or targets set by management. Detailed investigation of such red flags might include further inspection of the demographic data provided by the PHCCOS; for example, for red flags relating to cultural sensitivity, the demographic data for country of birth that is captured by the PHCCOS could be used to determine any change in the client group that may not be currently accommodated for by the service and would be a target for quality improvement initiatives.

Appendix II: EIiCD client survey questions

The following question templates are taken from the EIiCD client survey and relate to the collection of data for specific risk factors for the type II diabetes, cardiovascular disease and COPD indicator sets. Refer to main discussion regarding the relevance of questions to each set; these questions were originally designed for use in the National Health Survey.

1. **In terms of your body weight, do you consider yourself…**

   ❑ Acceptable weight   ❑ Underweight   ❑ Overweight

2. **How much do you weigh? (Please give your answer in *any* of the boxes below)**

   | | kilograms | OR | | pounds | OR | / | stones/pounds |

3. **How tall are you without shoes? (Please give your answer in *any* of the boxes below)**

   | | centimetres | OR | / | feet/inches |

4. **In the *last two weeks*, have you walked for sport, recreation or fitness?**

   ❑ No – please go to question 5

   ❑ Yes ⟶ **(a) How many *times* did you go walking *in the last two weeks*?**

   (b) What was the total number of hours you spent walking *in the last two weeks*?

5. ***Apart from walking,* in the last two weeks did you do any *moderate* exercise which caused a *moderate* increase in your heart rate or breathing?**

   ❑ No – please go to question 6

   ❑ Yes ⟶ **(a) How many *times* did you do any moderate exercise *in the last two weeks*?**

   (b) What was the total number of hours you spent doing moderate exercise *in the last two weeks*?

6. ***In the last two weeks,* did you do any *vigorous* exercise which caused a *large* increase in your heart rate or breathing?**

   ❑ No – please go to question 7

   ❑ Yes ⟶ **(a) How many *times* did you do any vigorous exercise *in the last two weeks*?**

   (b) What was the total number of hours you spent doing vigorous exercise *in the last two weeks*?

7. **Do you currently smoke?**

    ❏ No – please go to question 8

    ❏ Yes ⟶ **Do you smoke regularly (e.g. at least once a day)?**   ❏ Yes   ❏ No

8. **Have you *ever* smoked regularly** (e.g. **at least once a day)?**

    ❏ Yes   ❏ No

9. **What type of milk do you *usually* consume?**

    ❏ Whole   ❏ Evaporated/sweetened condensed

    ❏ Low/reduced fat   ❏ None of these

    ❏ Skim   ❏ Don't know

    ❏ Soy

10. **How many serves of *vegetables* (fresh, frozen or tinned) do you *usually* eat each day?**

    ❏ 1 serve or less   ❏ 2-3 serves   ❏ 4-5 serves

    ❏ 6 serves or more   ❏ Don't eat vegetables

11. **How many serves of *fruit* (fresh, dried, frozen or tinned) do you *usually* eat each day?**

    ❏ 1 serve or less   ❏ 2-3 serves   ❏ 4-5 serves

    ❏ 6 serves or more   ❏ Don't eat fruit

12. **How often do you add salt to your food *after* it is cooked?**

    ❏ Never/rarely   ❏ Sometimes   ❏ Usually

13. **How long ago did you *last* have an alcoholic drink?**

    ❏ 1 week or less   ❏ More than 1 week to less than 2 weeks

    ❏ 2 weeks to less than 1 month   ❏ 1 month to less than 3 months

    ❏ 3 months to less than 12 months   ❏ 12 months or more

    ❏ Never   ❏ Don't remember

Appendix III: ACIC tool template

The six subscales of the freely-available ACIC tool are reproduced below (Bonomi et al., 2002).

Part 1: Organization of the Health Care Delivery System. Chronic illness management programs can be more effective if the overall system (organization) in which care is provided is oriented and led in a manner that allows for a focus on chronic illness care.

Components	Little support	Basic support	Good support	Full support
Overall organizational leadership in chronic illness care	…does not exist or there is little interest.	…is reflected in vision statements and business plans, but no resources are specifically earmarked to execute the work.	…is reflected by senior leadership and specific dedicated resources (dollars and personnel).	…is part of the system's long term planning strategy, receives necessary resources, and specific people held accountable.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Organizational goals for chronic care	…does not exist or are limited to one condition.	…exist but are not actively reviewed.	…are measurable and reviewed.	…are measurable, reviewed routinely, and are incorporated into plans for improvement.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Improvement strategies for chronic illness care	…are ad hoc and not organized or supported consistently.	…utilize ad hoc approaches for targeted problems as they emerge.	…utilize a proven improvement strategy for targeted problems.	…include a proven improvement strategy and are used proactively in meeting organizational goals.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Incentives and regulations for chronic illness care	…are not used to influence clinical performance goals.	…are used to influence utilization and costs of chronic illness care.	…are used to support patient care goals.	…are used to motivate and empower providers to support patient care goals.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Senior leaders	…discourage enrolment of the chronically ill.	…do not make improvements to chronic illness care a priority.	…encourage improvement efforts in chronic care.	…visibly participate in improvement efforts in chronic care.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Benefits	…discourage patient self-management or system changes.	…neither encourage nor discourage patient self-management or system changes.	…encourage patient self-management or system changes.	…are specifically designed to promote better chronic illness care.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Part 2: Community linkages. Linkages between the health system and community resources play important roles in chronic illness management.

Components	Little support			Basic support			Good support			Full support		
Linking patients with outside resources	…is not done automatically.			…is limited to a list of identified community resources in an accessible format.			…is accomplished through a designated staff person or resource responsible for ensuring providers and patients make maximum use of community resources.			…is accomplished through active coordination between the health system, community service agencies, and patients.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Partnerships with community organizations	…do not exist.			…are being considered but have not yet been implemented.			…are formed to develop supportive programs and policies.			…are actively sought to develop formal supportive programs and policies across the entire system.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Regional health plans	…do not coordinate chronic illness guidelines, measures, or care resources at the practice level.			…would consider some degree of coordination of guidelines, measures, or care resources at the practice level but have not yet implemented changes.			…currently coordinate guidelines, measures, or care resources in one or two chronic illness areas.			…currently coordinate chronic illness guidelines, measures, and resources at the practice level for most chronic illnesses.		
Score	0	1	2	3	4	5	6	7	8	9	10	11

Part 3: Self-management support. Effective self-management support can help patients and families cope with the challenges of living with and treating chronic illness and reduce complications and symptoms.

Components	Little support			Basic support			Good support			Full support		
Assessment and documentation of self-management needs and activities	…are not done.			…are expected.			…are completed in a standardized manner.			…are regularly assessed and recorded in standardized form linked to a treatment plan available to practice and patients.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Self-management support	…is limited to the distribution of information (pamphlets, booklets).			…is available by referral to self-management classes or educators.			…is provided by trained clinical educators who are designated to do self-management support, are affiliated with each practice, and see patients on referral.			…is provided by clinical educators affiliated with each practice, trained in patient empowerment and problem-solving methodologies, and see most patients with chronic illnesses.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Addressing concerns of patients and families	…is not consistently done.			…is provided for specific patients and families through referral.			…is encouraged, and peer support, groups, and mentoring programs are available.			…is an integral part of care and includes systematic assessment and routine involvement in peer support, groups, or mentoring programs.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Effective behaviour change interventions and peer support	…are not available.			…are limited to the distribution of pamphlets, booklets, or other written information.			…are available only by referral to specialized centres staffed by trained personnel.			…are readily available and an integral part of routine care.		
Score	0	1	2	3	4	5	6	7	8	9	10	11

Part 4: Decision support. Effective chronic illness management programs assure that providers have access to evidence-based information necessary to care for patients--decision support. This includes evidence-based practice guidelines or protocols, specialty consultation, provider education, and activating patients to make provider teams aware of effective therapies.

Components	Little support	Basic support	Good support	Full support
Evidence-based guidelines	…are not available.	…are available but are not integrated into care delivery.	…are available and supported by provider education.	…are available, supported by provider education and integrated into care through reminders and other proven provider behaviour change methods.
Score	0　　1　　2	3　　4　　5	6　　7　　8	9　　10　　11
Involvement of specialists in improving primary care	…is primarily through traditional referral.	…is achieved through specialist leadership to enhance the capacity of the overall system to routinely implement guidelines.	…includes specialist leadership and designated specialists who provide primary care team training.	…includes specialist leadership and specialist involvement in improving the care of primary care patients.
Score	0　　1　　2	3　　4　　5	6　　7　　8	9　　10　　11
Provider education for chronic illness care	…is provided sporadically.	…is provided systematically through traditional methods.	…is provided using optimal methods (e.g. academic detailing).	…includes training all practice teams in chronic illness care methods such as population-based management, and self-management support.
Score	0　　1　　2	3　　4　　5	6　　7　　8	9　　10　　11
Informing patients about guidelines	…is not done.	…happens on request or through system publications.	…is done through specific patient education materials for each guideline.	…includes specific materials developed for patients which describe their role in achieving guideline adherence.
Score	0　　1　　2	3　　4　　5	6　　7　　8	9　　10　　11

Part 5: Delivery system design. Evidence suggests that effective chronic illness management involves more than simply adding additional interventions to a current system focussed on acute care. It may necessitate changes to the organization of practice that impact provision of care.

Components	Little support	Basic support	Good support	Full support
Practice team functioning	…is not addressed.	…is addressed by assuring the availability of individuals with appropriate training in the key elements of chronic illness care.	…is assured by regular team meetings to address guidelines, roles and accountability, and problems in chronic illness care.	…is assured by teams who meet regularly and have clearly defined roles including patient self-management, education, proactive follow-up, and resource coordination and other skills in chronic illness care.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Practice team leadership	…is not recognized locally or by the system.	…is assumed by the organization to reside in specific organizational roles.	…is assured by the appointment of a team leader but the role in chronic illness is not defined.	…is guaranteed by the appointment of a team leader who assures that roles and responsibilities for chronic illness care are clearly defined.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Appointment system	…can be used to scheduled acute care visits, follow-up and preventive visits.	…assures scheduled follow-up with chronically-ill patients.	…is flexible and can accommodate innovations such as customized visit length or group visits.	…includes organization of care that facilitates the patient seeing multiple providers in a single visit.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Follow-up	…is scheduled by patients or providers in an ad hoc fashion.	…is scheduled by the practice in accordance with guidelines.	…is assured by the practice team by monitoring patient utilization.	…is customized to patient needs, varies in intensity and methodology (phone, in person, email) and assures guideline follow-up.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Planned visits for chronic illness care	…are not used.	…are occasionally used for complicated patients.	…are an option for interested patients.	…are used for all patients and include regular assessment, preventive interventions, and attention to self-management support.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Continuity of care	…is not a priority.	…depends on written communication between primary care providers and specialists, case managers, pr disease management companies.	…between primary care providers and specialists and other relevant providers is a priority but not implemented systematically.	…is a high priority and all chronic disease interventions include active coordination between primary care, specialists, and other relevant groups.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Part 6: Clinical information systems. Timely, useful information about individual patients and populations of patients with chronic conditions is a critical feature of effective programs, especially those that employ population-based approaches.												
Components	**Little support**			**Basic support**			**Good support**			**Full support**		
Registry (list of patients with specific conditions)	…is not available.			…includes name, diagnosis, contact information, and date of last contact either on paper or in a computer database.			…allows queries to sort sub-populations by clinical priorities.			…is tied to guidelines which provide prompts and reminders about needed services.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Reminders to providers	…are not available.			…include general notification of the existence of a chronic illness, but do not describe needed services at time of encounter.			…include indications of needed service for populations of patients through periodic reporting.			…include specific information for the team about guideline adherence at the time of individual patient encounters.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Feedback	…is not available or is non-specific to the team.			…is provided at infrequent intervals and is delivered impersonally.			…occurs at frequent enough intervals to monitor performance and is specific to the team's population.			…is timely, specific to the team, routine, and personally delivered by a respected opinion leader to improve team performance.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Information about relevant subgroups of patients needing services	…is not available.			…can only be obtained with special efforts or additional programming.			…can be obtained upon request but is not routinely available.			…is provided routinely to providers to help them deliver planned care.		
Score	0	1	2	3	4	5	6	7	8	9	10	11
Patient treatment plans	…are not expected.			…are achieved through a standardized approach.			…are established collaboratively and include self-management as well as clinical goals.			…are established collaboratively and include self-management as well as clinical management. Follow-up occurs and guides care at every point of service.		
Score	0	1	2	3	4	5	6	7	8	9	10	11

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