

Applying a health outcomes approach in a health service unit

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Abstract

An explicit focus on health outcomes has the potential to improve health if applied at the local level. However, clinical services require clear and practical support in the measurement and analysis of health outcome indicators. This paper suggests 12 steps for departments or services to take in promoting an outcomes orientation, based on our experiences in the Central Sydney Area Health Service. These include determining commitment at the service level, setting up a working group, specifying service consumers, their health problems and intervention processes, specifying desired health changes, consulting the literature and peers, identifying existing resources, pilot-testing and refining outcome measures, collecting data and responding to sub-optimal results with evidence-based interventions. The paper also reviews common criticisms of the health outcomes approach and key issues which have arisen in the course of applying these steps at the local level.

Introduction

An explicit focus on health outcomes has substantial potential for improving the health of populations and patients if applied systematically at the local level. However, when applying the health outcomes approach at the local level, several issues require further clarification to ensure that health is improved. This paper suggests 12 steps for developing and measuring health outcome indicators based on our practical experiences in Central Sydney, reviews some common criticisms and misconceptions of health outcomes, and offers reflections on emerging challenges.

What do we mean by health outcomes?

The New South Wales (NSW) Department of Health's first public declaration of a health outcomes approach was in 1992 (Frommer, Rubin & Lyle 1992). The stated objective to reorient 'planning, implementation and evaluation of health and related services towards optimal health outcomes within available resources' (Frommer, Rubin & Lyle 1992, p 135) was consistent with the long-standing national interest in health goals and targets (Health Targets and Implementation (Health For All) Committee 1988). The NSW definition of health outcomes was accepted by a meeting of the Australian Health Ministers in 1993 as 'a change in the health of an individual, a group of people or population, which is attributable to an intervention or series of interventions' (Australian Health Ministers' Advisory Council 1993).

A national commitment to better health outcomes was formalised in 1994 (Department of Human Services and Health 1994). NSW was relatively quick to develop outcome indicators for priority issues such as cancer (NSW Cancer Expert Working Group 1995), cardiovascular disease (NSW Coronary Heart Disease Goals and Targets Working Group 1995), injury (NSW Injury Expert Working Panel 1995) and mental health (NSW Mental Health Expert Party 1995), although some of these indicators require further refinement and many address process issues. While few area health services have as yet produced reports comparing local data with national (Rissel et al. 1995) or State targets (Kempton et al. 1995; Rissel et al. 1996), or examined health status differences between migrant groups (Rissel et al. 1996), the NSW Chief Health Officer's report presents data at a State level for priority health issues and notes changes in health outcome indicators over time, where possible (Public Health Division 1997).

Most recently, explicit performance-based funding contracts between the NSW Department of Health and area health services were initiated in the 1996–97 financial year to further focus on priority outcomes in NSW. Health outcome indicators were included in these contracts and are likely to become increasingly important measures of performance (O'Neill 1997).

Through this contracting process, and the previous identification of outcomes for priority health issues in NSW, it has become clear that health outcomes can be conceptualised at the level of populations, services, treatments and individuals, and each provides a complementary perspective. An hierarchical analogy can be made with human illness, where the problem can be considered at the molecular, physiological or epidemiological level. For example, Potter (1992) asks the question: What gets cancer – the genes, the cell, the organ, or perhaps even the population? All of these human components contribute to illness and our

understanding of a health problem, although each represents a different level of explanation and intervention. All levels of information are needed to inform the design of interventions to address clinical and population health problems more coherently. Therefore, health outcomes need to be conceptualised and applied at different levels to facilitate the implementation of interventions.

Why do we need to apply the health outcomes approach in our work?

There are several basic reasons why health outcomes need to become a routine part of health services. These reasons relate to accountability, professionalism and evidence-based medicine, and an emerging expectation that consumers of health services are fully informed of benefits, risks and costs.

Accountability

Publicly funded health services are ultimately accountable to taxpayers. This accountability means that there needs to be clear and explicit reasons why particular interventions and strategies are implemented (for example, 'the health outcomes to be achieved by this intervention are X and Y'). These reasons are not always evident, with historical factors (for example, 'we've always had this service here'), personal and professional interests (for example, 'every other hospital has a genetic service, so should we') and general resistance to change operating to maintain services that are no longer the most effective available. Budget reductions and the need for resource reallocation are a strong incentive for critically examining the effectiveness of current practice.

Professionalism and evidence-based medicine

Embracing evidence-based medicine underpins improvements in health outcomes and includes disinvesting in strategies which are known to be less effective than others. Therefore, a focus on health outcomes will be a critical ingredient for optimising cost-effective service delivery. As such, measurement of the outcomes of health interventions should be normal professional practice. Comparison of current practice against evidence-based interventions also is required.

The science of measuring outcomes is still advancing. Outcomes of many clinical services are not known, making estimates of cost-effectiveness difficult. Also, any one study of health service outcomes is unlikely to provide a definitive answer for other service providers to select the most cost-effective strategy. However, the systematic application of a critical analysis of research studies using hierarchical levels of evidence (where randomised controlled trials provide the strongest level

of evidence) will enable knowledge gained from a variety of contexts to be synthesised (National Health and Medical Research Council Quality of Care and Health Outcomes Committee 1995). Given the formalisation of evidence synthesis through the Cochrane Collaboration (a group synthesising results from randomised clinical trials) and other groups, evidence-based decisions about health services can and should be made.

Informed consumers

Clinical practice is probabilistic. Every day clinicians make comments to patients such as: 'Eighty-three per cent of patients survived this disease when given this treatment and therefore we expect your chance to be as good.' Outcomes of interventions should be known so that consumers can be fully informed of the risks involved in their treatment or the intervention in which they might participate. Informed consent by patients should be based on reasonable understanding of the risks involved in the intervention and the likely effectiveness. Outcomes studies conducted in a specific setting should compare the results against what others have reported. Consumers also could be interested in these results.

Implementing a health outcomes approach

To assist the application of a health outcomes approach at the local level, the Central Sydney Area Health Service Needs Assessment and Health Outcomes Unit has developed a model of practice. Twelve steps have been identified in a process of defining and measuring outcomes within a unit or service. The 12 stages are listed in Table 1 and are generally consistent with project planning principles (Hawe, Degeling & Hall 1990; Green & Kreuter 1991) and quality improvement procedures.

An outcomes approach generally requires a team effort, preferably multidisciplinary, to contribute a range of perspectives. Staff ought to be clear on the rationale for measuring outcomes, and how the results will be used. Reference to existing service objectives which mention patient outcomes can legitimise measuring outcomes. If the current service objectives are not very outcome-focused, it may be useful to review the service objectives. Not all personnel need to be actively involved at all stages, but key stakeholders should be engaged in the process if possible. A core group or committed individual to champion the process will increase the likelihood of success (Steckler & Goodman 1989).

Table 1: Stages in defining and measuring outcomes in a unit at the local level

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1. Discuss the concept and determine commitment in your team/unit.
 2. Set up a working party of those interested in a health outcomes approach.
 3. Specify your consumers, their health problems and your intervention processes.
 4. Specify desired health changes for the patient or community as a consequence of your health interventions and draft a list of outcome indicators.
 5. Consult the literature and your colleagues in other services/facilities about health outcome measures already identified or developed in your discipline or treatment/prevention area.
 6. Consolidate the results of your search with your draft list of outcomes and indicators.
 7. Identify existing resources to conduct outcome measurement and data collection in your unit.
 8. Pilot-test a small set of the most relevant, well-developed and validated measures.
 9. Refine your measures, finalise protocol and share with all team members.
 10. Use your health outcome indicators to obtain data on the health status of your patients before and after the intervention(s).
 11. Collate and analyse data at regular predetermined intervals and compare your results with colleagues or as published by others.
 12. Act on identified gaps to improve health outcomes by seeking evidence-based reviews of interventions and following their recommendations.
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Initial tasks

Setting up a working party of interested people follows initial conceptual discussions and statements of intent by team managers. Alternatively, an existing committee or group may take on the active leadership role to advance the health outcomes approach. Tasks of the working party include establishing mechanisms for keeping the rest of the staff informed of progress (for example, a regular agenda item at staff meetings) and assigning responsibilities and time frames for carrying out the remaining steps. A fundamentally important task is the clear specification of the 'core business' of the unit/service. Relevant questions which can be asked include: What groups of patients/clients are treated/worked with (including, for example, details of age, sex, ethnicity, main language spoken)? What are the presenting problems, diagnoses and prognoses? What are the major intervention processes? A clear understanding of what service or intervention is provided is helpful in identifying appropriate outcomes (changes in health attributed at least in part to health service interventions).

Identifying health service outcomes

Implicit in descriptions of what services provide is a consequence of that service. However, these consequences need to be made very explicit. What specific health-related changes are expected in your patients/clients as a consequence of your service intervention? Are there any changes specific to certain treatments or types of patients/clients? Some changes may already be routinely measured. Do they relate to the kinds of changes which the service aims to make? From those changes already measured and those which could or should be measured, an initial list of service/unit outcomes and outcome indicators can be generated. An outcome indicator is a specific measure for assessing progress towards a goal.

Another task of the working group is to consult with colleagues and search the published literature for existing outcome measures. Ideally, appropriate, valid and reliable indicators for your target group already exist, and considerable time and effort may be avoided. If some indicators are found, these can be added to the list of indicators currently or possibly able to be measured, and selection of health outcome indicators to be piloted can begin. Some questions which can influence this decision are: Which of the indicators are most relevant to the desired patient/client changes as a result of health service interventions? Which measures are most practical to introduce (assuming they are not already measured)? Which measures have been validated or used by other units/services against which your unit/service can be compared? Are there opportunities for the standardised collection of data?

If no measures have been reported in the literature, then you may have to generate your own. Support from someone experienced in questionnaire/instrument development should be involved at this stage. Several texts are available (for example, DeVellis 1991) and many books on evaluation also cover this topic (for example, Green & Lewis 1986). Aspects of questionnaire design to be considered include technical issues such as validity and reliability, as well as practical issues such as mode of delivery (whether face-to-face or written questionnaires).

Data collection

New data collection procedures or activities may require additional resources or a redirection of existing resources. Existing data collection procedures may need to be modified. Someone needs to record the relevant patient/client information, which may need to be entered onto a computer database. Computer hardware and technical skills may be required. Is staff time available? At what time points can and should patient/client data be collected (for example, pre-treatment, three to six months after treatment?) If this kind of activity is relatively new to the

unit/service, then a smaller scale to begin with is highly recommended. Either data for fewer outcome indicators should be collected or fewer patients/clients for a shorter period should be included in assessments. A pilot test for a short period (say, one to three months) may help refine the instruments, the procedures involved, and patient and staff reaction, and help give some early feedback on whether the data are easy to interpret and useful. Some flexibility may be needed as the inevitable bugs are worked through.

Systematic data collection, having gone through its preparatory paces, can then begin. It may be a one-off exercise or could be the beginning of new routine monitoring. Perhaps only a sub-sample of people will be included to keep data collection manageable. Whatever the scale, the most important aspect of a health outcomes approach is that the results are used to inform staff about possible areas where practice could be changed to improve health. The data might demonstrate an already high level of achievement or identify new priorities. Results may also reveal new information about clinical sequelae. For example, a recent laryngectomy outcomes project followed up patients at one, three and six months. Staff previously had been informing patients that after about a month they would begin to adjust to their new condition at home, but the outcomes project identified that the majority of patients were still in hospital at that time and it took about three months for things to settle down! Patients are now being told not to expect a return to normal too soon, and considerable patient anxiety about slow healing has been alleviated (Armstrong et al. 1997).

Another example, from general practice in the Canterbury local government area, illustrates how data were collected as a part of a needs assessment informed service provision and will serve as a baseline for future evaluation. Canterbury has a high proportion of residents who speak Arabic at home. In practices with Arabic-speaking general practitioners and receptionists, receptionists identified and asked all Arabic-speaking patients to fill out a questionnaire while waiting to see the general practitioner (90% of patients spoke Arabic). Among other identified health needs, male smoking was found to be high (34%) (Rissel, Ward & Lesjak, under review). Subsequently, a project officer was employed by the Canterbury Division of General Practice to organise training in brief smoking interventions for Arabic-speaking general practitioners. Future evaluation will repeat the initial survey.

Reporting results

Results need to be widely disseminated through the professional peer-reviewed literature to all participating clinicians or to those who have a professional interest, and to managers of similar or related services. Discussion of the findings

and their implications for practice by staff able to make decisions about the service should be conducted.

Responding to results with evidence-based intervention

Having carefully identified areas where health outcomes could be improved, it is important that changes in interventions are based on the best available evidence. Levels of evidence have been categorised according to an hierarchical taxonomy (National Health and Medical Research Council Quality of Care and Health Outcomes Committee 1995). Specifically, randomised controlled trials provide the strongest scientific evidence of causality (Elwood 1988), and interventions with stronger evidence of their effectiveness should be used in preference to those where the evidence is less strong.

Key issues arising from local applications

Many staff have reported that they appreciate the value of identifying and acting on health outcomes but are unsure where to start. We have found that a framework for working through the health outcomes approach is useful to clinical staff. There are several broader issues that can arise when the health outcomes approach is considered critically. These are discussed below.

Causality

A health outcomes approach does not seek to attribute causality, as is commonly perceived (Rissel, Ward & Sainsbury 1996). Evidence for causality should be built up over time from previous research and evaluation, taking into account the study design of research projects (Woolf et al. 1990). The measurement of health outcomes resulting from health service-related interventions typically involves observational and descriptive data collection. Cohorts of patients (usually without a control group) may be followed up to observe longer term changes, but this appears to be infrequent. These study designs provide only weak evidence of causality and limited generalisability. Research that addresses issues of causality or shows that an intervention caused a specific change is typically not part of routine evaluation of patient or population outcomes and is rarely undertaken by staff without extensive technical support and appropriate resources, for example, support from externally obtained grants. Rather, monitoring of what happens to patients or subgroups of a population might detect changes within that group which suggest that patient or individual health is better or worse, possibly related to a health intervention. If there is inconsistent and unreliable information that an intervention is having an impact on a health

outcome indicator, then careful planning and appropriate resources should be allocated to a research project designed to attribute causality of the health outcome to the intervention using a prospective controlled design.

Professional territorialism

Measurement of health outcomes is not intended to support professional territorialism. Some professional groups or advocates of certain interventions may wish to use an outcomes study to demonstrate that their contribution is more than or as valuable as that of another professional group. Improvements in patient outcomes are typically the result of a combination of components of health services. Identifying the relative contribution of specific components may become important in identifying areas for change in the future. But, at the moment, measuring patient outcomes should be the priority.

Validity of measurement

The basic philosophy of health outcomes is that changes resulting from health service intervention should be measured and reported. Typically, positive changes are expected. Examples of positive changes might be the prevention of ill-health or an increase on a scale assessing capacity to perform activities of daily living. The measurement of this change is a core issue for health outcomes. Firstly, the change must be meaningful clinically as well as being meaningful to the patient (Woolf et al. 1990; Vimpani 1995). Statistically significant and expensive improvements that mean the patient can still not perform favourite activities may not be perceived as worthwhile by patients or health services (Benjamin, Peretto & Greene 1995), especially if there are side-effects. Also, criteria used to define what is a valid measure of health need to be developed. The World Health Organization's definition of health as 'not merely the absence of disease or infirmity but is a positive state of physical, mental and social well-being' (Last 1995) reminds us that we need to keep a bio-psychosocial model of health in mind when developing outcome measures.

Participation and equity

Assuming that valid measures of health outcomes can be determined, there are at least three other major concerns that have been expressed about outcomes. The first relates to the lack of community outcomes, where the unit of analysis is the community, and community is considered as a sociological entity rather than a population serving as a denominator for calculating disease rates (Rissel 1996). A related concern is the lack of consumer input during the development of initial national goals and targets and in developing outcome indicators to focus activity

(Baum 1995). A third concern is that a focus on health outcomes may widen health inequities by focusing on the easier gains (Hall, Birch & Haas 1996), and other social inequities may follow if social and community values are not taken into account (Mooney, Jan & Seymour 1994). For example, people with low literacy or from a non-English-speaking background may be excluded from outcomes projects if they are perceived to be hard to work with or too labour-intensive or expensive. Finally, what is currently measured in health is largely historical accident. For example, we have State/Territory-based population cancer registries but have no comparable systems for chronic diseases such as heart disease and diabetes. Cancer incidence is measured routinely in Australia but not stroke, incontinence, depression or maintenance of breast feeding at six months post-partum.

However, potential problems such as widening inequities, lack of community input, and dimensions and health gains irrelevant to patients are not inherent to outcomes. Consumers or consumer representatives could be involved in selecting health outcome indicators or collecting data to measure them at a local level. Consumer groups were included during extensive consultation for the 1993 Australian goals and targets (Nutbeam, et al. 1993). Identifying health status differentials by income (Mathers 1994) or ethnicity (Donovan et al. 1992) begins to address issues of equity.

Cross-cultural issues

In addition to the potential pitfalls of focusing on health outcomes discussed earlier, there are other challenges ahead. One of these is dealing with cross-cultural issues, especially those that emerge when working with people from a non-English-speaking background where low literacy or poor health is evident (Parker et al. 1995; Williams et al. 1995). Do the measures used to measure outcomes translate meaningfully? Is literacy in either English or another language a barrier? Is an interpreter required? Differences in health outcomes of people able to speak English and those not able to speak English may widen if due attention is not paid to cultural issues, or the difference may be a measurement artefact.

Education and staff training

While the principle of health outcomes is not new, its application to regular practice is not yet extensive. Health professionals will require training in order to apply health outcomes routinely. Some recent work with mental health staff on health outcomes suggests that specific job-related training and supervision,

using meaningful, valid and reliable data collection instruments, would be more helpful than theory and concept training (Crocker & Rissel, in press).

Costs

The issue of resources for supporting a health outcomes approach needs to be addressed. There are obvious costs for units and services involved in staff time identifying existing outcome indicators, collecting and analysing data, and possibly hardware costs. Similarly, time for staff to reflect on unit or service objectives can be difficult to find. Benefits compared with costs may not be obvious initially, and some reward or incentive scheme may be helpful. Perhaps if services could keep any monies saved through implementing changes based on evidence and health outcomes, rather than it disappearing into general funds, there would be an incentive to reduce more inefficient practices. Management support for projects assessing health outcomes is likely to encourage staff.

Conclusion

Despite challenges, it is possible to assess health outcomes at a local level. Movements towards evidence-based health care and outcome-based funding are inevitable, and practical processes for working through the measurement of outcomes will become crucial to assist health care workers.

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