

QUALITY MANAGEMENT OF HEALTH CARE

AIM: To describe an approach to regional health management and planning. To explain the relationship between the development of pathways of care, casemix funding models, and the achievement of high quality treatment for all. To discuss the utility of a duty of care approach by the practitioner and client. To address the role of research and education in assisting the achievement of regional health improvement and sustainable development.

HEALTH RELATED SERVICE AND PLANNING IN REGIONAL CONTEXT

Quality management of health care is management which attempts to continuously improve the outcomes of its activity through a data driven and consultative approach to the identification and control of health and sustainable development risks. In Australia, the purchasers of health care and related services are principally area health service managers, related Commonwealth and State government organizations, local government and industries, including the insurance industry. Communities and service purchasers ideally should seek to effectively coordinate all services with the implementation of those aspects of national health and environment policy which are most relevant to achieving all community management objectives. This may best be done on an appropriate regional basis, through analysis of the health and environment related needs of communities and individuals. Contracts may then be offered to health care and other relevant service providers to meet community needs and related national and regional health and environment goals which have been identified and prioritised earlier. Ideally, all contractors are then monitored and the outcomes compared in order to identify the most effective performers. Prevention and rehabilitation related service and data collection needs to be linked to promote an improving understanding of all risks and how to treat them better.

As Duckett pointed out, however, all interactions between health professionals and clients or patients are complex power relationships which are often presented paternalistically as being entirely about 'caring' for the patients' interests. In reality, health professionals, like anybody else, may see primarily what they want to see, in order to pursue interests of their own, before all others. Quality management processes, which ideally respect and support the autonomous and informed decision making of consumers and communities, should therefore be multifaceted and guard against the tendency to professional domination of any service offered. Duckett suggests that measurements of quality of care should do this by incorporating two distinct elements – technical (cure) quality and satisfaction (care) quality. The latter is appropriately measured by the experience or satisfaction of consumers.

The Healthy Horizons framework for improving the health of regional and remote Australians was developed for the Australian Health Ministers Council in 1999. It notes that:

- Primary industries
- Environmental programs
- Local government
- Social services
- Sports, arts and tourism

are all involved in efforts to develop innovative and sustainable communities. It states that the best strategies are based on local leadership, local adaptations of ideas which have worked elsewhere, and suggests working jointly across industries, services and governments.

The stated goals of proposed regional programs are to:

- Improve highest health priorities first
- Improve the health of Aboriginal and Torres Strait Islander peoples living in rural, regional and remote Australia
- Undertake research and provide better information to rural, regional and remote Australia
- Develop flexible and coordinated services
- Develop needs-based flexible funding arrangements for rural, regional and remote Australia
- Achieve recognition of rural, regional and remote health as an important component of the Australian health system

Primary health care is basic to achieving and maintaining good health. It includes service from general practitioners, community nurses, Aboriginal health workers, allied health care professionals, pharmacists, home visiting services and family carers. It also includes those services and programs aimed at promoting the health of the community. The five national health priority areas are mental health, diabetes, cardiovascular health, injury prevention and control, and cancer control. Local programs to reduce smoking, develop community understanding about domestic violence and to improve safety on farms are also primary health care activities. All industries besides farming are also required, as a result of state OHS acts, to identify and control risks to health. The work and education requirements of welfare beneficiaries, including students, the unemployed, lone parents, those receiving disability support pensions, the elderly, and their carers, require particular consideration in this health and environment related context.

The planning principles the Council of Australian Governments (COAG) adopted to guide its own decision making should be noted by those involved in the regional planning process. You may remember from the first lecture on health promotion that these are:

- Any recommended solutions should be in the interests of Australia as a whole
- Regulation and management responsibility should be devolved to the maximum extent consistent with the national interest
- Inefficient Commonwealth/State divisions should be eliminated
- Intergovernmental arrangements should promote transparency to the electorate

In 2001 the Cape York Justice Study provided recommendations which are consistent with COAG principles and appears relevant for consideration by any community. It suggests that curbing alcohol, substance abuse and breaches of the law, especially violent offences should be priorities, and that a holistic, coordinated and consultative approach to government operation is necessary in each region. The report indicates that the main government departments where this should occur are:

- health
- education
- police
- judicial and correctional services.

The study suggested that each community develop simple action plans, and that a coordination unit established in the Queensland Premier's Department should help prioritise and cost them, in order to assist development of an effective whole of government approach to community health and environment problems. It noted that it is counterproductive to adopt grand plans and complex schemes. As community action plans are developed in each community, they can

gradually be integrated into a simple, cohesive plan. The Cape York Justice Study also suggested a framework for the development of regionally pooled funds – a management concept previously discussed in these lectures in relation to Kendig and Duckett's recommendations for the provision of all services for the elderly. Why should younger community members be treated differently? For example, an Aboriginal community in NSW has already begun a community based planning process, which centres on implementation of the national Aboriginal fishing strategy. Accordingly the community explored training and development options with the local TAFE college and a local accountancy firm, to ensure the management committee is skilled in reading financial statements and able to make informed decisions about administration of project funds.

The Cape York Justice study suggested that the coordination unit in Premiers should ensure that objectives and ideas cease to be expressed in general terms, and that programs and activities are focused, coordinated, related to available resources, and feasible in the communities. It should ensure that money is expended directly for the benefit of communities and that new organizations or structures are not created or funded unnecessarily. It should also assist communities to review current governance arrangements with a view to simplifying or dismantling them where appropriate. Agencies with funding intentions would submit their annual budget to the director of the coordination unit who would assess priorities, rationalise and integrate intentions, and submit a consolidated budget request through to the Premier. Funds would be provided for agreed purposes, in line with the budget approval process, and made directly to relevant agencies or the coordination unit. Agencies would be accountable for expenditure of funds and for the outcome of activities to their respective directors-general and Ministers. They would provide similar plain English progress reports to the coordination unit. The coordination unit requires the authority and flexibility to divert funds at short notice between agencies, during the year. It should report annually to each community as well as to the Premier. No advisory group or other expedient should be interposed between the coordination unit and the communities, or between the coordination unit and government responsibility for the communities.

PATHWAYS OF CARE AND THE REHABILITATION PROCESS

In any regional planning context, organizations need to manage the throughput of their ongoing functions, and also special projects. As a result of the Medicare structure, key diagnostically related (Casemix) data is currently collected on a regular basis from both private and public sector health care providers. Casemix funding focuses on the efficiency of service throughputs, not the effectiveness of interventions. To complement this focus, a framework for area health service management related to improving the quality of health services in NSW has been established, with the performance areas of safety, effectiveness, appropriateness, consumer participation, efficiency and access. An electronic patient record is currently under national development. The NSW Health Council is developing a unique patient identifier. Hospitals have been at the forefront of these changes. The extension of more consistent and appropriate data collection and related funding principles to all health and environment services is essential for improving the hospital/community interface. This is necessary for improving the identification and reduction of all risks to individuals and communities and for cost-effectiveness. The concept of 'pathways of care' has the potential to become an important aspect of evidence-based care for all health and related services. However, in the hospital context, pathways of care apply a predominantly medical model of diagnosis and treatment. The application of pathways in a community context needs to be much broader and more flexible, in order to deal effectively with the apparently diverse yet shared experiences of chronic pain, disability and other problems which are the lot of many. Developing appropriate treatment pathways is now a major task.

In the hospital setting, pathways are a simple recording tool that enables a care team to manage and audit its care for clients as individuals and groups, in order to continuously improve upon their current practices. The first stage in development of a pathway is the selection of a client group or case type by a team involved in the provision of health care. Once this has been done a time frame is set. It might commence when the patient arrives in the hospital emergency department and could end at the point of discharge from the hospital. In a community based context the commencement and concluding service points would be defined in accordance with expectations about the kind of aims, treatment and related cost of services provided to the average kind of client groups. Key points in the delivery of care are then mapped out on an hour by hour, day by day, or on another appropriate basis. The development of pathways of care provides a means for evaluating treatments and their cost in relation to individuals and groups of clients. Although the care plan is devised for a group of clients, it will be applied to clients individually and consultatively. The outcomes or goals of care for individuals, and the methods and responsibilities related to their attainment are mapped out within the previously agreed parameters for the client group. Outcomes may be for the client to achieve, for the staff to achieve on behalf of the client, or may be other process outcomes that should be attained. Achievement of the goals is then monitored in order to analyse patient progress.

Recording individual variations to planned treatment according to the specific needs of the particular client, provides an important tool for analysis of the efficacy of the pathway, in order to improve it. The carers must have freedom to depart from a pathway which was developed for an average group, if there is evidence that this is best for the individual client. In each case, decisions about the appropriate application or modification of the pathway should include the client, and sometimes family members, employers, or others, as appropriate. The recording and evaluation of these deviations is vital for the ongoing development of Casemix style funding. Variation does not mean a failure in care. Its documentation provides information which can shed light on how to improve future care outcomes for certain types of clients. It assists the establishment of realistic aims, related treatments and costs for the broader group of clients as well as the individual. Pathways should reduce patient uncertainty and delays, making them and their families partners in the care, and providing more shared knowledgeable about its requirements. They eliminate duplication and unexplained variations in practices of care providers. They enable the development of better quality care through providing the mechanism for effective audit of care and comparison of the outcomes of different team approaches in relation to goal setting, outcome monitoring and variance tracking. The development of pathways is consistent with the process of action research, which establishes aims and then analyses the effectiveness of strategies established to meet them. It is also consistent with the quality cycle and feedback loop. It describes what the health team does, and helps iron out unexamined variability and risks in order to provide better care.

There are many tools which attempt to measure clients' reaction to their treatment. Perhaps the most well known of these is the SF-36 short questionnaire which was recently used in the Commonwealth coordinated care trials. It is widely respected as being the most valid, reliable and responsive of the generic measures of health outcome of those available. An expert working group considered that it was appropriate for use with non English speaking background people. However, it was thought to be unsuitable for Aboriginal populations, especially in remote areas. An example of cultural inappropriateness might, for example, be the question about whether the person's health limits their ability in daily activities such as climbing flights of stairs. Other questions mention activities such as vacuum cleaning, playing golf and bowls. It is very important to have instruments appropriate to the group assessed, and also to gain cross-group comparison wherever this is reasonable. My general worry about many of the questionnaires I

see is that their set but lengthy format provides the client with little or no power to register what they really think. Balancing these conflicting requirements is new and difficult.

Information about service providers and their treatment outcomes ought to be publicly available to ensure informed consumer choice, comparability in health care outcomes and the best deployment of taxpayers resources. However, it is important for personal information about clients to be kept confidential. If it is not, people might be subject to exploitation, harassment or humiliation. On the other hand, this problem has been somewhat reduced by the passage of Commonwealth and state discrimination legislation. Health practitioners need reliable information about clients' problems in order to ensure a broadly informed approach to treatment. Privacy issues covered in organisational codes of practice should include the collection, storage and security of personal information, access to and alteration of personal information, and its disclosure. In general, availability of clients' personal information should depend upon legitimate use of the information collected and on personal consent to its use. It is difficult to see why any person of any age or mental capacity should be denied truthful information about their personal situation or treatment. This is a fundamental aspect of transparency requirements.

THE HEALTH AND WELFARE ORGANISATION AND THE DUTY OF CARE

The need to develop national health standards, supporting pathways of care, and related systems for establishing quality management across institutional and community based contexts has increased as a result of the introduction of national competition policy and prospective payment systems like Casemix. The Australian Council on Healthcare Standards develops Evaluation and Quality Improvement (EQUIP) audit standards for a variety of health related institutions. By 1996 it had accredited almost 700 public and private hospitals, day surgeries and nursing homes. Standards were also developed for other community-based facilities. Institutional self-assessment is an important way of ensuring standards are maintained and that the duty of care owed by institutions and individual practitioners is being appropriately carried out. Public information which is provided on a regular basis about the standards attained by each institution is a vital tool for their comparison. Key performance indicators of service quality which are currently being used in hospitals are:

- The rate of emergency patient re-admission within twenty-eight days of separation
- Rates of hospital acquired infection
- Rate of unplanned return to theatre
- Patient satisfaction; and
- The proportion of beds accredited by the Australian Council on Healthcare Standards.

Access indicators have also been developed which relate primarily to waiting times and variations in clinical intervention rates. The concerns that the casemix approach will encourage early patient discharge should be partly reduced by the greater influence and accountability for the patient's welfare, which is required of health practitioners. The approach should be flexibly extended, with any appropriate modifications, across all areas of community-based care.

THE PRACTITIONER'S DUTY OF CARE

In Australia the requirements placed on health professionals are established in professional registration acts. However, such prescriptive legislation does not apply to all health workers. It would be preferable to provide all practitioners and their clients with a general legislated duty of care, similar to that placed upon employers and workers under State OHS Acts. Supporting

pathways of care would normally be used to assist the implementation of the duty of care. This is how codes of practice are already used under OHS acts. The approach is also consistent with an evidence-based approach to treatment, and with its continuous improvement. A legislated duty of care would promote integrated health management, based upon the consultative identification, prioritisation and treatment of risks to clients, workers, and populations. It would be less rigid than a prescriptive legislative approach, and more in keeping with the requirement for flexible treatment to meet each individual's need. The hallmark of the responsible practitioner should be the flexibility to act on the basis of very broad evidence about a particular situation, rather than to be blindly rule bound. Actions should be justified in terms of the practitioner's knowledge of general standards, and evidence about the specific needs of the particular client.

The idea that consumers have an entitlement to the health provider of their choice is of very limited value if it is not accompanied by a right to comparative information about the outcome of health service provider performance. Currently, although the Australian hospital system appears to have comparative advantages in regard to equity and cost, data about the quality of its treatment outcomes is far less likely to be available in Australia than in the US system. The evidence is that treatment quality may be poorer in this country. The quality Australian health care study defined quality care as 'the absence or lowering of adverse patient events or occurrences'. The study reviewed over 14,000 patient admissions in 28 hospitals in NSW and South Australia over a three-year period and found 16.6% of admissions involved an adverse event. Half of these were assessed as highly preventable. The researchers compared this situation with the Harvard medical practice study, a review of over 30,000 inpatient medical records from 51 acute-care hospitals in the US, which showed that adverse events occurred in 3.7% of hospitals and that many of these were the result of substandard care.

THE PRACTITIONER'S LIABILITY

As Australia follows the US route of increasing pressures for competition in health service provision, there is a commensurate need for the development of legislated duty of care requirements supported by data driven risk management, which provides those who fund and consume health services with clear and reliable information on the outcome of all treatments. However, the compensation and professional indemnity review of health care found inadequate accessible information for both health professionals and health care consumers on risks, benefits and treatment options in health care. It noted the undertaking of many quality directed activities, with few of them being data driven and few involving an information-action-monitoring cycle that could lead to improved health care over time. The review also found a lack of meaningful performance information upon which consumers could base their choice of health care provider and upon which health care institutions could grant practising rights to ensure provision of quality care to clients. The task force on quality in Australian health care came to similar conclusions. It thought a study of information technology was needed to improve links between health care providers, with special attention to hospitals, general practice, pharmacies and home and community care. This has been followed by the development of the electronic patient record.

The report on compensation and professional indemnity in health care indicated that as consumer expectations rise, doctors are increasingly likely to be sued at common law by people who allege that their treatment was negligent. According to one study, 55% of Australian obstetricians and gynaecologists surveyed had legal action initiated against them, whilst 42% reported having a complaint made against them. For other specialisations the risk was less, but still substantial. Approximately 95% of legal actions for medical negligence were settled out of court, and almost half the overall cost of actions was taken up in legal fees. The common law legal avenues open to the person who has been injured by their health care, and to the provider who has treated them,

leave much to be desired. The patient or their grieving family usually has little or no information about what apparently went wrong with treatment. In general, the injured patient is unlikely to be compensated or to receive rehabilitation as a result of their injury. If compensation is provided as a result of court action, the emotional and financial cost for both parties will probably be enormous. Resolution of the case will usually take many years. The fear of litigation may generally prevent doctors communicating honestly, fully and sympathetically with a patient after treatment has unintended consequences. Many complaints appear to be motivated by what is regarded by the patient as remote, secretive, or unrepentant behaviour by doctors after their treatment has not led to expected results.

Doctors and some other health care professionals currently have access to professional indemnity cover through membership of mutual defence organizations but this does not afford the quality of protection that insurance affords both the employer and the injured person when accidents and injuries occur at work. Medical defence organizations generally provide services to their members, which may include legal costs for civil liability and disciplinary proceedings, advice on medico-legal matters, and assistance with hospital and employment disputes. There are no requirements for mutual defence organizations to adopt the accounting, prudential and reporting requirements that insurance companies are subject to. All medical defence organizations retain an exclusive discretion whether they will indemnify the negligent acts of a member and, if so, for how much. The recent collapse of the insurer HIH, which took on the business of medical defence organizations, in part demonstrates the problems of this approach. The review of professional indemnity arrangements concluded that professional indemnity cover should be required for all health care providers, not merely those who are registered, and that the cover should be compulsory rather than discretionary, and fully funded from premiums covered for this purpose, without any cross subsidy. This appears to have substantial professional support and was also supported by the Law Reform Committee of the Parliament of Victoria. It is generally consistent with the approach that has been taken to workers compensation premiums, although only employees and not the self-employed are required to have workers compensation cover.

In 1994, a Professional Standards Act was passed in NSW and the Commonwealth established similar legislation. The act provides a risk management related organisational focus for doctors and professionals in health and other industries. It enables the creation of schemes to limit the civil liability of professionals, to facilitate the improvement of their occupational standards, and to protect the consumers of services provided by such people. The legislation also establishes a professional standards council to supervise the preparation and application of schemes, and to assist in the improvement of occupational standards and protection of consumers. The Act does not apply to liability for damages arising from death or personal injury, or negligence in acting for a client in a personal injury claim. However, the Council has the function of encouraging and assisting the development and improvement of occupational standards related to codes of ethics, codes of practice, quality management, risk management, resolution of complaints, voluntary mediation and occupational education.

THE HEALTH CARE COMPLAINTS COMMISSION

The final report on compensation and professional indemnity in health care recommended that all states establish complaint mechanisms similar to those available in NSW under the Health Care Complaints Act, which established the independent Health Care Complaints Commission (HCCC). Anybody with a complaint about treatment may go to the Commission. Its aims include facilitating the maintenance of standards of health services, promoting the rights of clients by providing mechanisms for resolution of complaints, and providing an independent mechanism for assessing whether disciplinary action should be taken against health practitioners

covered by health registration acts. The establishment of a comparatively powerful and independent Commission is better than the complainant having to go down the adversarial common law courts with their concerns. A person may feel forced down this route simply to penetrate the veil of secrecy when authorities have closed ranks behind the practitioner, whether or not this was justified. It is also better than the person having to take their complaint to a professional body of practitioners for resolution because professional bodies are not in a position to act objectively towards their own members. However, an independent complaint handling mechanism must work and not be a toothless tiger or it becomes beside the point.

The HCCC is the complainant in all disciplinary inquiries. This is similar to the powers WorkCover inspectors have to prosecute under OHS acts. If the person complained against is subject to professional registration, the matter is heard either by a registration board, a professional standards committee or a tribunal. A professional standards committee consists of three members, including two practitioners and a lay person. A tribunal consists of four members and is chaired by a district court judge or legal practitioner in addition to the groups represented on a professional standards committee. Patient support officers have been appointed in the Sydney metropolitan and Hunter regions to assist people resolve problems they encounter with health services at the local level. Complaints potentially provide an important mechanism for the general identification and control of risks to workers and consumers. The provision of inspection, investigation and prosecution rights to appropriately trained representatives of health consumer groups may be an effective way of further improving health standards. This would be consistent with the rights already afforded to representatives of trade unions under state OHS acts.

A health care provider may face a variety of risk management expectations. Purchasers, employers, and suppliers of goods and services in health care and other industries ideally should take a consistent national legislative approach to the duty of care which ought to be shown towards workers, consumers and members of the public. There is related need for supporting information, consultation, training, inspection, audit and dispute resolution services. Prosecution requirements and penalties for breach of duty of care are also necessary. So are insurance systems which promote effective risk management and rehabilitation data gathering. It is likely that a comprehensive duty of care legislative approach would provide a better way of ensuring client and public health and safety than is currently afforded by numerous state based professional registration acts which are, nevertheless, far from comprehensive in their coverage.

RESEARCH TO ASSIST HEALTH AND ENVIRONMENT IMPROVEMENT

Australia cannot compete with low wage economies and must therefore develop and market high value added services and goods, such as those related to health and environment protection, education, communication and financial services. As publicly funded institutions, universities should critically support the pursuit of national and regional health and sustainable development goals, in preference to serving more sectional interests. Health inquiries have pointed out the difficulty of establishing quality management when self-management by occupational elites is equated with pursuit of the community interest. The National Expert Advisory Group on Safety and Quality in Australian Health Care accordingly advised that health ministers should lead the way with a contractual approach to developing a safety and quality enhancement ethos throughout the health and education systems.

Award of public research funds to universities has traditionally occurred on the basis of academic and professional peer review and selection of investigator-initiated proposals. However, the Health and Medical Research Strategic Review recently adopted definitions from the World

Health Organization and consequently stated that the national research effort should encompass three kinds of research. Fundamental research generates knowledge about problems of scientific significance. The review suggested that peer judgment of investigator-initiated proposals is the best way of doing this. Strategic research generates knowledge about specific health needs and problems. The review thought that a range of processes is necessary to identify priorities for special attention. Research for development and evaluation creates and assesses products, interventions and instruments of policy that seek to improve on existing options. The review stated that Australia should develop its focus on the prioritised creation and assessment of interventions and policy.

If tertiary research and education were more effectively coordinated and aimed at assisting the competitive development, delivery and evaluation of services and products, this would be integral to the national sustainable development process, and also to the implementation of university functions. Universities could provide research and education services to assist implementation of regional health, environment and sustainable development goals established in consultation with industry and community stakeholders. This would be consistent with the necessity to avoid being driven by commercial interests and with World Conference on Science recommendations, which recently addressed the role of science in reducing social inequality. Support for government and industry partnerships to undertake a coordinated approach to national research and development was also provided by the recent national review of business programs. It recommended that all government funding for business should be focused and delivered through the five key programs of investment, innovation, exports, business competitiveness and sustainable development.

The achievement of regional and national development requires high levels of research coordination and transparency so that the comparative outcomes of research services and products may be effectively and widely identified, to assist their continuous improvement. Increased transparency would also encourage more accountability for the use of public funds than is normal in either private sector or collegiate cultures. From a public interest perspective, protection and extension of the traditional freedom of speech enjoyed by academics should be a high priority. Perfect information is vital for the perfect operation of the market and for the perfect identification and control of risk. Ready access to information also drives the effective development of science, evidence-based services, and democratic accountability. The right to independent inquiry, speech and publication therefore require preservation and a general extension in the community interest. Providing academics and professionals with a legislated duty, not merely a right, to seek and disseminate the apparent truth is vital to ensuring that narrowly vested interests do not distort, silence or otherwise inappropriately control research and education which is funded by the taxpayer, supposedly in the interests of the community.

EDUCATION TO SUPPORT COMMUNITY DEVELOPMENT AND RESEARCH

Teaching is a core function of the university and undergraduate students are often strongly vocationally oriented in their aspirations. Education should meet their interests by also meeting the requirements of potential employers and communities in a manner which is flexible and cost effective. The National Expert Advisory Group on Safety and Quality in Australian Health Care called for a national effort to improve education and training of health providers and administrators to improve their readiness to work in a team environment. They advised that curricula for continuous quality improvement should be included in all undergraduate, postgraduate and continuing education and training. They specified that health ministers should support national actions for safety and quality related to strengthening the consumer voice and learning from incidents, adverse events and complaints. The public interest lies in a broad and

flexible approach to education, which teaches research and critical skills, and meets individual interests as well as specific vocational competencies.

The development of workplace based and distance education is central to this process. However, the current arrangements for university curriculum management and occupational registration are under academic and professional control. This means that they do not meet the needs of students, industry and the broader community as effectively as they meet the narrower collegiate or professional interest. Current university management practices identify students as the university's primary customers, but do not usually engage employers, clients, or other community representatives on the subject of curriculum, its appropriate delivery, and its ideal outcomes. The relationships between academics and professional practitioners also drive establishment of practical education placements, to the detriment of more broadly planned and effective systems to facilitate contact between communities and all those who might teach or learn with them. For example, traditional health education practices promote a focus on student learning in hospitals, rather than with general practitioners or other relevant members of the community. These academic and professional placement practices may thus promote a widening gulf between those who see career advantages in long periods of theoretical education and research, and communities outside these institutions whose primary goal is to gain continuing access to a variety of well organized, practical and cost-effective assistance for a diverse range of community and individual problems.

Taxpayer support for the development and delivery of a range of education and community service functions may now be available as a result of the recent inquiry into the law and administrative practices related to charities. The inquiry specifically addressed the purposes of charities in regard to the advancement of health, education, social and community welfare, religion, culture, the natural environment and other purposes beneficial to the Australian community. The WHO has developed an approach to community-based rehabilitation, which may also assist the practical education of tertiary students and the provision of more effective services to individuals and communities. The aim is to facilitate the rehabilitation and equalization of opportunities of all people with disabilities. The strategy is implemented at the grass roots level through the combined efforts of people with disabilities, their families and communities, and health, education, vocational and social services. Research has also stressed the need for assisting rehabilitation related self employment and business development through provision of help with assessing business potential, development of the business plan, applying for financing, business review and follow-up. To be effective, however, any expenditure related to governance also needs to be coordinated with the administration of key national and regional health, environment protection and sustainable development goals. There should be benefits in coordinated design and management of government and industry owned funds to ensure they are competitively administered to assist achievement of national, regional and industry objectives. Universities can assist the effective implementation of harm prevention, community development and rehabilitation processes through a much broader and better-coordinated process of research and education, including student placement for a practical component.

CONCLUSION

A broad approach to regional planning should be taken in the name of health. This includes a broader and more effective approach to service provision than the current concentration on public health analysis and resources in regard to medical treatments. The concept of 'pathways of care' has the potential to become an important aspect of regional and evidence based health and related care and quality management. In the hospital setting, pathways are a simple recording tool that enables a care team to manage and audit its care for clients as individuals and groups, in order to

continuously improve upon current treatment practices. The development of pathways in a community context needs to be more broadly undertaken, in order to deal effectively with the extremely diverse yet shared experiences of chronic pain and disability, which exist in many communities. Although the Medicare system appears well designed to achieve equity and cost containment, there is not yet a related approach to the planning and collection of data about regional health and environment planning and service delivery. In addition there is an absence of linkages between quality assurance processes and programs or practices aimed at improving health and preventing harm. A consistent duty of care approach towards protection of workers, consumers and the public should be explored to rectify these problems. In an international economy moving towards free trade, its highly developed health and education services should provide Australia with a natural comparative trade advantage. However, in order for this potential to be tapped, research and higher education should be harnessed on a regional and industry basis in support of national and international goals to promote health, environment protection and related sustainable development. Reform of systems to place university students in practical education are vital for assisting universities in their education, service and research interactions with regional communities.

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