Innovative Care for Chronic Conditions

Meeting Report
30-31 May 2001

Noncommunicable Diseases and Mental Health
World Health Organization

...Committed to health care improvement
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Innovative Care for Chronic Conditions Meeting Structure

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Key Messages for Policy Makers:

Derived from expert discussions at the WHO Meeting on Innovative Care for Chronic Conditions

All chronic conditions share three features:

- They grow inexorably with development: no nation will escape.
- They deeply challenge our capacity and willingness to provide coordinated systems of care.
- Their burden can be dramatically reduced but ONLY if governments and health care leaders decide to do so.

The increasing burden of chronic conditions falls most heavily on the poor. Appropriate policies and programmes can vastly reduce the weight of the burden in terms of human suffering and economic loss.

Unidimensional solutions to complex problems don’t work:

- Access to medications is not enough to control the burden of chronic conditions. Health status and quality of life are not improved by medication alone.
- Chronic conditions require an evolution of health care from an acute “find it and fix it” model towards a coordinated, comprehensive system of care.

Invest in a health care system with a chronic care perspective. Governments and health care leaders can use the information presented in this report to help accomplish this goal.

The sooner governments invest in chronic care, the better. Without a system that assures ongoing support, technological advances will not stop heart disease, AIDS, diabetes, and other chronic conditions.
Setting the scene

Background

This meeting on innovative care for chronic conditions is part of a broader project dealing with the transformation of health care to better address the needs of patients with chronic conditions. WHO started thinking about the project in response to a number of challenges:

- The global disease burden has changed towards chronic conditions worldwide. Health systems haven't.
- For most major chronic conditions, highly effective interventions exist, yet patients do not receive them.
- Current health systems are designed to provide episodic, acute care. On the other hand, chronic conditions are lengthy and require continuity of care (mismatch).

To help address these needs, a project on Innovative Care for Chronic Conditions has been created by WHO's Department of Health Care for Chronic Diseases. The project involves reviewing innovative care for chronic conditions around the world through exploring, analyzing, and identifying innovative best practices and affordable health care models. These models will be synthesized and tested for their relevance in different health systems and country types. Following this evaluation, WHO will assist countries in the formulation and implementation of tailored strategies for comprehensively managing chronic conditions. This process will be completed in close collaboration with international organizations, institutions, and foundations.

Developing countries suffer the greatest impact of major chronic conditions. In developing countries, it is estimated that fully half of all required health care is due to chronic conditions.

Purpose of the Meeting

This was a 2-day informal, working group meeting. The purpose was four-fold:

- To share knowledge and experience on innovative care for chronic conditions
- To discuss ways to adapt existing models for different health systems
- To review a draft report on Innovative Care for Chronic Conditions
- To provide input on the further development of the WHO Project

Participants represented a mix of a) health services experts working on various aspects of improving chronic illness care; b) policy-makers; c) health care administrators; and d) representatives from the World Bank and from the International Council of Nurses.
The growing challenge of chronic conditions

Changing disease burden

The prevalence of chronic conditions, including noncommunicable diseases, mental disorders, and certain communicable diseases such as HIV/AIDS, is increasing dramatically. In developing countries, it is estimated that fully half of all required health care is now due to chronic conditions. By 2020, these conditions will contribute to more than 60% of the global burden of disease.

![Figure 1: The rising global burden of disease due to major chronic conditions. Source: Global Burden of Disease, Murray and Lopez, 1996](image)

There are clear determinants for this trend:

- Changing demographic trends and population ageing
- Changes in consumption patterns and risk behaviours
- Rapid urbanization and social disintegration
- Globalization (global marketing of public health risks)

Tobacco will cause more of them to die than any other single reason and health systems will not be able to afford long and expensive care in its wake.

*Dr Gro Harlem Brundtland, World Health Assembly 2001*
Costs of chronic conditions

The economic burden of chronic diseases is enormous. While developing countries account for the majority of the burden of major chronic conditions, they create significant costs for all countries.

- Chronic conditions disproportionately affect the poor and socially isolated
- Chronic conditions economically challenge patients, families, and governments
- Chronic conditions endanger the sustainability of health systems

Most cost of illness studies have been conducted in industrialized economies. Nevertheless, these data shed light on implications for developing countries.


In the USA, the costs of chronic obstructive pulmonary disease (COPD) related to direct medical care expenditures as well as to morbidity and premature mortality is estimated at US$ 23.9 billion. COPD costs an average of US$ 1,522 per person per year whereby the largest contributor is hospitalization. Sullivan SD, Ramsey SD, Lee TA. The economic burden of COPD. Chest 2000; 117 (2): 55-9S

In Finland, the total costs related to cardiovascular diseases in the age group 35-64 years amounts to US$ 1.9 million. Kiiskinen U, Vartiainen E, Pekurinen M, Puska P. Does prevention of cardiovascular diseases lead to decreased cost of illness? Twenty years of experience from Finland. Preventive Medicine 1997; 26: 220-226.

Costs significantly increase with the presence of complications. The International Diabetes Federation estimated the direct costs of treating a diabetic over a period of 3 years at approximately US$10,500. These costs rose to about US $44,500 for a person with diabetes, heart diseases and high blood pressure. The International Diabetes Federation. Diabetes health economics: facts, figures and forecasts. Leeds: IDF Task Force on Diabetes Health Economics, 1999.

For the case of mental disorders in the USA, an aggregate cost of $148 billion (at 1990 prices) was calculated. One of the most important findings, as illustrated in Figure 2, is that the productivity costs - the upper part of each block - nearly match or outweigh the direct costs - the lower part - for all mental disorders. Similar trends could be hypothesized for other chronic conditions. Rice DP, Miller LS (1995). The economic burden of affective disorders. British Journal of Psychiatry, 166: 34-42.
The costs of chronic conditions can also be viewed from the perspectives of patients and their families, health care providers, health care administrators, and governments (Box 1).

<table>
<thead>
<tr>
<th></th>
<th>Treatment Costs</th>
<th>Productivity Costs</th>
<th>Non-financial costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients and Families</td>
<td>Service fees</td>
<td>Work disability</td>
<td>Poor health outcomes; reduced quality of life</td>
</tr>
<tr>
<td></td>
<td>informal care giving</td>
<td>lost earnings</td>
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<tr>
<td>Health Care Providers</td>
<td>Resources put into inappropriate and</td>
<td>Reduced productivity</td>
<td>Frustration; reduced job satisfaction</td>
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<td></td>
<td>fragmented care strategies</td>
<td>due to time spent caring for poorly managed patients</td>
<td></td>
</tr>
<tr>
<td>Health Care Administrators</td>
<td>Resources put into inappropriate and</td>
<td>Reduced organizational quality and productivity</td>
<td>Dissatisfaction; feeling overwhelmed by unmet care demands</td>
</tr>
<tr>
<td></td>
<td>fragmented care strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governments</td>
<td>Provision of health care</td>
<td>Increased disability; premature death, and reduced productivity at population level</td>
<td>Inefficiency of system; increased prevalence of some disorders at population level</td>
</tr>
</tbody>
</table>

Box 1: The burden of mismanaged chronic conditions: a matrix

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Indirect costs of lost productivity may be the greatest economic burden of chronic conditions.

![Figure 2: The aggregate costs of mental disorders in the United States, 1990](source: Rice DP, Miller LS (1995). The economic burden of affective disorders. British Journal of Psychiatry. 166: 54-42.)

The costs of chronic conditions can also be viewed from the perspectives of patients and their families, health care providers, health care administrators, and governments (Box 1).
A closer look at current systems of care

Across the world, health care systems share these characteristics:

- **They are organized to provide acute illness care**
  
  While the global disease burden has been shifting towards chronic conditions, health systems have not evolved to meet this changing demand. Care is fragmented, focused on acute and emergent symptoms, and often provided without the benefit of complete medical information.

- **The patients' role in management is not emphasized**
  
  Despite the importance of patients' health behaviour and adherence to therapies for chronic conditions, they are not given essential information and skills to handle their conditions to the extent possible.

- **Follow up is sporadic**
  
  Typically, health systems do not have a long-term management plan for patients with chronic conditions to ensure the best outcomes. Instead, patients are left ill-equipped to manage their conditions until their symptoms become intolerable, thus necessitating an urgent visit. Within the health service system, reliable medical information is not available across providers or over time.

- **Community services tend to be ignored**
  
  Health care is often poorly organized to make the best use of existing community programmes. This is especially problematic in low-resource settings, where primary care services lack the capacity to meet existing health needs, and could particularly benefit from community linkages to organizations such as consumer groups and nongovernmental organizations.

One unfortunate consequence of this system of care is that adherence to medications and other therapies for chronic conditions is very low. In developed countries, adherence is usually only 50%. This figure is much lower in developing countries around 20%. Poor adherence can be caused by a range of factors, including:
patients’ knowledge, attitudes, and skills; health care providers’ knowledge, attitudes, and skills, and the organization of the health service system.

The effectiveness of health interventions for chronic conditions is seriously jeopardized by low adherence. For example, adherence to antiretroviral drugs for HIV/AIDS between 80%-95% is associated with a 61% of failure rate of reaching the expected virologic outcome. In some marginalized populations, 80% of HIV patients reach less than 80% of adherence, which translates into a waste of more than 48.8% of the total health care investment for the total population, increased drug resistance, and early death.

Contrary to some concerns, overall health care expenditures decrease when adherence increases. Patient education results in improved health behaviours and health status beyond that achieved by usual care, and simultaneously reduces health service utilization. The substantial savings in reduced hospitalizations, unscheduled visits, medication use associated with complications, and many other health care services outweighs the relative increase in drug expenditures as a result of better adherence.
How can health systems respond to this challenge?

For outcomes to be improved, health policy and health system changes are essential. Effective treatment for chronic conditions requires a transformation of health care, away from a system that is focused on episodic care in response to acute illness, towards a system that is proactive and designed to meet the long-term needs of patients.

This perspective is captured in the following statement from a recent report released by the Institute of Medicine:

Current care systems cannot do the job. Trying harder will not work. Changing systems of care will.

*Crossing the Quality Chasm: A New Health System for the 21st Century; Institute of Medicine, 2001*

Improved care for chronic conditions is based on the following principles:

- Unidimensional solutions to complex problems don’t work. Chronic conditions require an evolution of health care from an acute “find it and fix it” model towards a coordinated, comprehensive system of care.

- Access to medications is not enough to control the burden of chronic conditions. Health status and quality of life are not improved by medication alone.

- What is needed: investment in a health care system with a chronic care perspective. Without a system that assures ongoing support, technological advances will not stop AIDS, diabetes, heart disease and other chronic conditions.

A number of strategies lead to improved clinical outcomes when they are applied comprehensively:

- Developing health policies and legislation that support these comprehensive care strategies.

- Reorganizing health care financing so that evidence-based care for chronic conditions is possible and supported.
Coordinating care across patient conditions, health care providers, and settings over time.

Reorganizing health systems to enhance the free flow of knowledge and information between patients and providers, and across providers.

Developing evidence-based treatment plans and supporting health care providers to implement them in a range of settings.

Educating and supporting patients to self manage their conditions to the extent possible.

Linking to resources in the broader community.

Monitoring and evaluating the quality of services and outcomes.

The key elements for better adherence are the same components for better chronic illness care: Communication, Continuity, Coordination, Comprehensiveness, and Community linkages. Research indicates that through the application of these strategies, adherence (as well as functional and clinical outcomes) will be improved.

An integrated approach to care for chronic conditions makes sense, given the frequent occurrence of multiple chronic conditions affecting one patient. As stated recently in the British Medical Journal:

No longer is each chronic illness: asthma, diabetes, arthritis, etc., being considered in isolation. Awareness is increasing that similar strategies can be equally effective in treating many different conditions.


The meeting group of experts discussed the comprehensiveness and usefulness of the Chronic Care Model developed by the MacColl Institute for Healthcare Innovation (USA) after looking into best practice experiences in chronic care.

The model calls attention to the need for systems change if patient outcomes are to be improved. These system changes are ultimately intended to bring about the development of informed, activated patients and prepared, proactive practice teams. Productive interactions between activated patients and prepared practice teams increase the likelihood of optimal functional and clinical outcomes (see Figure 3).

In this model, there are six focal areas for improving chronic care:

- **The Community: Resources and Policies**

The performance of health care systems can be improved if linkages are made to community resources relevant to effective chronic illness care. These linkages may be made through resource directories, referral paths and joint programmes. Community resources that support care for chronic illness, including both governmental
programmes and programmes of community-based voluntary organizations, are needed to augment health care services, but health care organizations are often poorly organized to make use of existing community programmes or to stimulate their development.

- **The Health System: Organization of Care**

Health care systems can create an environment in which organized efforts to improve health care for chronic illness take hold and flourish. Critical elements include a coherent approach to system improvement, leadership committed to and responsible for improving clinical outcomes, and incentives to providers and patients to improve care and adhere to guidelines (including non-financial incentives such as recognition and status).

- **Self-Management Support**

Effective self-management support helps patients and families cope with the challenges of living with and caring for chronic conditions in ways that minimize complications, symptoms and disability. Successful self-management programmes rely on a collaborative process between patients and providers to define problems, set priorities, establish goals, create treatment plans and solve problems along the way. The availability of evidence-based educational skills training and psychosocial support interventions are key components of a delivery systems self-management support structure.

- **Delivery System Design**

Effective chronic illness care requires more than simply adding additional interventions to an existing system focused on acute care. Rather, it necessitates basic changes in delivery system design. Effective care often requires clear delegation of roles and responsibilities from the physician to other professionals who are full part of the caring team (e.g. nurses, health educators) and who have the knowledge and time to carry out the range of tasks required to manage complex chronic conditions. Effective care also implies the use of planned visits, continuity of care and regular follow-up.
Effective chronic illness care programmes operate in accord with explicit guidelines or protocols, preferably evidence-based guidelines, whose implementation is embedded in routine practice supported by reminders, effective provider education, and appropriate input and collaborative support from relevant medical specialties.

Clinical Information Systems

Timely information about individual patients, and populations of patients, with chronic conditions is a critical feature of effective programmes, especially those that employ population-based approaches. The first step is to establish a disease registry for individual practices, which includes information about the performance of important elements of care. Health care teams that have access to a registry can call in patients with specific needs and deliver planned care, can receive feedback on their performance, and can implement reminder systems.
The model has been successfully used to improve care of chronic conditions such as diabetes, asthma, congestive heart failure, depression and geriatrics in more than 300 health care organizations in USA.
Models and experiences of innovative care

Cases from different countries presented at the meeting demonstrate successful implementation of one or more components of innovative care for chronic conditions. The performance of health care systems can be improved if linkages are made to community resources relevant to effective chronic illness care. These linkages may be made through resource directories, referral paths and joint programmes. Community resources that support care for chronic illness, including both governmental programmes and programmes of community-based voluntary organizations, are needed to augment health care services, but health care organizations are often poorly organized to make use of existing community programmes or to stimulate their development.

The Islamic Republic of Iran has been successful in implementing innovative, community-based care throughout the country.

The Islamic Republic of Iran: Community-Based Care

The health policy of the Islamic Republic of Iran has been based on primary health care since 1979 with particular emphasis on the expansion of health networks and programmes in rural areas. In both towns and villages, the first point of contact between the public and the health system is the health centre. However, in the villages, the health centre performs its functions with the help of a large number of Health Houses, which effectively become the first point of contact. Each Health House serves a population of about 1500, and the responsibility in the Health Houses is given to behvarz (health workers). Rural health centres consist of general practitioners, midwives and dentists and their responsibility is to supervise, support and accept referrals from the Health Houses. Urban health centres mainly perform their functions with the help of Health Posts. Each Health Post serves a population of 12,000. Presently, there are more than 13,000 Health Houses, 2,100 Rural Health and Treatment Centres and 1,850 Urban Health Centres active throughout the country.

District hospitals in towns offer services to referred cases from rural as well as urban health centres. District hospitals are responsible for specialized, hospitalized and outpatient curative services.
Clear standards and guidelines on diabetes and hypertension have been integrated recently in many areas. One of the main activities in both the Health Houses and the Health Posts is the case finding and follow-up especially in what is related to tuberculosis, malaria and mental disorders. Recently, hypertension and diabetes were also included in some areas.

Some of the important factors for the success of PHC in the Islamic Republic of Iran include: the establishment of the Ministry of Health and Medical Education, which combines responsibility for provision of health services and medical training; and the active involvement of the community in the planning and implementation of health services, mainly through the health councils in rural areas.

In the last 15 years, life expectancy has increased by 13 years for males and 15 years for females. Similarly, maternal and infant mortality rates have decreased to less than of the prevalence rates fifteen years ago. Primary health care coverage has increased to more than 90% in 1997 after being negligible in the early 80’s. These achievements have been made even in the presence of a demographic and epidemiological transition.

Figure 4: Levels of service delivery and referral chain in the Islamic Republic of Iran
In Hungary, a community-based approach has also been used. In this case, the strategy is focused upon improving healthy behaviour among young women. A range of settings and media are used to reach this portion of the population.

A health care programme has been initiated, built on the concept that by changing the health behaviour of young women today, the prevalence of chronic conditions in the future can be reduced. The target population is young women either in school or working. The health promotion and disease prevention programmes are multi-level, and initiated in schools, for families, and in communities. Education of health care professional students, teachers, district nurses, family doctors and other medical doctors enables the programme to disseminate knowledge of women’s health at a wide range in the community.

The overall project is comprised of:

- School based programmes
- Community programmes
- Public health care programmes
- Professional programmes
- Media programmes
- Internet programme

These programmes offer relevant health information, provide skills training to initiate and maintain healthy behaviours, and encourage the use of self-management strategies.

Outcomes that will be assessed include rates of health-enhancing (e.g., exercise) and health-compromising (e.g., smoking) behaviours, and health care provider behaviour (e.g., number of depression cases recognized and successfully treated).
Government policy formulation and implementation is another important strategy for disseminating effective care. For example, The Philippines has capitalized upon its national health sector reform to advance innovative care for a range of chronic conditions. Its strategies are comprehensive and focused on changing systems of care.

The Philippines: National Health Sector Reform

Increasing life expectancy, urbanization, and lifestyle changes have brought about a considerable change on the health status of The Philippines. Globalization and social change has influenced the spread of noncommunicable or lifestyle/degenerative diseases by increasing exposure to risk. As the country’s per capita income increases, the social and economic conditions necessary for the widespread adoption of risky behaviour gradually emerge. This in turn has brought a considerable challenge to the country’s health policy and health system to address emerging lifestyle/degenerative diseases amidst the unfinished agenda of communicable diseases.

The Health Sector Reform Agenda of the Philippines Department of Health is seeking to improve health services and ensure more efficient delivery of Public Health Programmes, especially to the under-served population by instituting health sector reforms in the entire health system.

With regard to chronic conditions, reform activities have focused upon:

- Guidelines and clinical pathways
- Surveillance systems
- Registry systems
- Community-based approaches
- Research Health financing

These activities have been tailored to the unique needs of different noncommunicable conditions, cardiovascular disease, cancer, diabetes, asthma, and musculoskeletal disorders.
In Ghana, the Ministry of Health has been a key player in improving chronic illness care.

Private industry, the Ministry of Health, and tertiary academic institutions have collaborated to initiate a national diabetes management programme. The main goals of the programme were to increase access to diabetes care, enhance the quality of diabetes care, and to facilitate the sustainability of the programme. The targets attained in three years included:

- Extension of diabetes care to all regional and 63% of district health facilities
- Enhancement of the quality of diabetes care by adopting a team approach
- Development of clinical guidelines and educational resource materials for health care personnel
- Empowerment of people with diabetes through education and provision of resource materials
- Ownership of the programme by the Ministry of Health
- Establishment of diabetes registries at health facilities
- Establishment of a diabetes advisory board

Multidisciplinary diabetes care is now available to the majority of Ghanaians. The programme is being extended to remaining districts and it is hoped that the programme will eventually be expanded to include other chronic conditions.
New treatments are turning many forms of cancer into chronic conditions, rather than fatal diseases. Since 1999, the United Kingdom’s National Health Service has made remarkable improvements in the continuity of care for cancer patients.

The United Kingdom: Better Cancer Care

The NHS Modernization Agency, part of the English National Health Service, supports health communities through a variety of programmes and projects. Two of their main goals are to promote excellent care across the NHS and to support the redesign of care processes for the benefit of patients. The agency is an excellent example of how central government can play a catalytic and supporting role to design better ways to deal with the problems that patients with chronic conditions face every day (poor clinical outcomes, waiting lists, bureaucracy and delays procuring referrals and hospital admissions, and inappropriate use of hospital services) and to spread best practices nationally.

The Cancer Services Collaborative (CSC) started in 1999. Since then, it is estimated that the project has saved 400 years of waiting time for patients with breast, lung, bowel, prostate, and ovarian cancer. The team identified more than 200 ways of improving services, and many of the improvements have been made with relatively little new resources. Although this project was confined to cancer services, many of the lessons learned are being applied to a range of chronic conditions.
Improving care for chronic conditions can be particularly challenging in low-income, poorly-resourced settings, yet is perhaps most important in these contexts due to the need to be efficient with available resources. In one such clinic, located in the Eastern Cape of South Africa, innovators designed and implemented a multidimensional approach to improving adherence to treatment.

Republic of South Africa: A multi-faceted strategy designed to improve adherence to anti-tuberculosis treatment

The incidence of tuberculosis (TB) in South Africa is very high, and the prevalence is exacerbated by the HIV epidemic. The efficacy of TB therapeutic regimens is well documented, however the benefits of drugs are only tenable when TB patients adhere to the recommended dosing schedules. Approximately 20% of smear positive TB patients fail to take 2/3 of the recommended course of treatment, a factor leading to the disappointing cure rate of 57%. Patient non-adherence to therapy, despite a policy of directly observed therapy, is cited as the major barrier of the TB Control Programme achieving its goal.

Previous research has indicated that patients receive little support from health professionals in coming to terms with their diagnosis of TB, and in completing the long, and often difficult, course of therapy. It has been suggested that improving treatment outcomes will involve improving support for patients.

To address this issue, a feasibility study is underway in the large urban primary health care clinic of Zwide. Zwide is situated in the municipality of Port Elizabeth and manages the care of over 400 smear positive TB cases per annum. The control clinic is Kwazakhele.

The intervention consists of:

- In-service training designed to assist primary health staff to implement a shift towards a more patient-centred approach
- In-depth interview with the newly diagnosed patient
- An educational booklet for the patient
- Pre-packed medication designed to facilitate patient and staff monitoring of drug adherence
- Regular project meetings to monitor the implementation of the intervention
- The development of a system of community-based support for TB patients

The effects of the intervention are being evaluated both quantitatively and qualitatively, but analyses are not yet complete. However, it appears that the intervention has been well accepted by all stakeholders, and that there is a 10% improvement in smear conversion rates.
The primary care clinic is the dominant context for health care delivery for chronic conditions. Multidisciplinary teams serve important roles in these settings, chiefly through the introduction of more comprehensive approaches to care.

**The Netherlands:**

Shared care arrangements, developed to meet the needs of patients with chronic conditions, are quite common in the Netherlands. They combine the efforts of a range of care agencies and professionals in order to integrate all aspects of care demands of people with chronic illnesses. For older patients with diabetes, projects have been implemented in which specialized nurses coordinate care and provide patient education about the disease, all within the primary care clinic.

**USA:**

Kaiser Permanente in Sacramento, California, a division of one of the main managed care organizations in USA, provides primary-care based care for chronic conditions using multidisciplinary teams made of physicians, nurse practitioners, physical therapists, clinical health educators, and psychologists with behavioural medicine expertise. The integration of behavioural scientists in the teams is felt particularly important to provide appropriate and successful care for chronic conditions. The roles of the behavioural medicine specialists are mainly: triage of mental disorders (e.g., severe anxiety and depression), reduction of unhealthy behaviours (e.g., smoking, sedentary lifestyle, poor nutrition), and support of self-management in patients with chronic conditions. Although the psychologists provide direct patient care services, one of their key functions is to educate and support their clinical colleagues in identification and management of behavioural and mental health problems in patients with chronic conditions. Examples of clinical targets include glucose screening and control; and renal, lipid, and retinopathy screening for patients with diabetes. Asthma targets include reducing the percentage of patients at high risk for acute events.
Disseminating Innovative Care

The Breakthrough Series (BTS) has been used to enhance the successful implementation of innovative care for chronic conditions. Studies have demonstrated that, by using the BTS approach, improvement can be achieved both in well and less well resourced settings.

The Institute for Healthcare Improvement (IHI) developed the Breakthrough Series in the USA in 1995. It brings together groups of health care organizations that share a commitment to making major, rapid system changes to specific aspects of care. These Collaboratives consist of 20 to 40 health care organizations working together for six to eight months on improving a specific clinical or operational area. Under the guidance of an IHI panel of national experts, team members study, test, and implement the latest knowledge available to produce rapid improvements in their organizations. A Collaborative is an intensive effort of health care professionals making significant changes that improve clinical outcomes and reduce costs. At the end of each Collaborative, a conference is organized to disseminate the techniques participants used to make breakthrough improvements.

Figure 5: The IHI Breakthrough Series Model

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To date, the BTS collaborative model has been applied to diabetes, congestive heart failure, depression and asthma, showing compelling improvements in operational and clinical outcomes. The keys to success appear to be:

- Clarity on improvement goals; usually in the realms of clinical improvement, performance achievement, worker satisfaction, and organizational viability
- Use of the Chronic Care Model (see page 8) to plan changes
- A learning process embedded in the change process
- A planned programme to implement changes
- Some coaching and external expertise: guidance that is based on evidence
- Clear leadership
- Some local experimentation to test changes before full implementation
- Motivation of health care providers

**How is this relevant for developing countries?**

Strategies for effective dissemination of innovative care approaches may depend on the health care resources available in different settings. Different approaches may be required, depending on the scope and quality of services, the training of health care providers, and the availability of computers and other technological infrastructure.

**Common issues**

Regardless of level of resources, there is a common need to implement health system change in order to cope with the needs and demands presented by chronic conditions. Meeting participants uniformly believed that models and strategies presented in this meeting are applicable to most countries, no matter their level of resources. Some participants noted that comprehensive care approaches may be most relevant for developing countries, because of their pronounced resource constraints.

**In relation to community and government involvement**

It is important to secure government commitment, particularly in settings with low levels of resources. The relative importance of national vs. district or local government involvement will depend on the country's health system.

Community involvement was also felt to be of crucial importance. Some of the barriers to increasing community involvement in dealing with chronic conditions locally are:

- Financial status of the households and communities.
- Cultural attitudes towards chronic conditions (sometimes they are not seen as important as acute conditions by the community).
- Political commitment to mobilize the community.
Discontinuity of community mobilization policies.

Scarcity of innovators and energizers within the communities and health systems to launch and maintain these experiences.

Lack of financial and non-financial incentives within the health system to cooperate with the community.

To ensure success, it is important that governments and communities:

- Plan the sustainability of the project from the beginning.
- Build capacity at local level.
- Anticipate and plan for eventual discontinuity of policies or leaders supporting the projects.
- Tackle the usual reluctance of central governments to devolve power.
- Educate people and communities so that they can make informed and genuine decisions on prioritizing care, when they have the power to do that.
- Avoid the stigmatization that identifying cases of particular diseases can produce and try to modify those negative social attitudes.
- Collaborate with international donor agencies and national governments to address the double burden of disease where relevant, based on recognition of the common strategies and issues.

In relation to self-management

Self-management is equally relevant for all resource levels, though probably even more relevant in those settings with less access to formal resources. Tailoring of self-management supporting tools and measures of the cultural and living standards of households are crucial. Self-management can also be supported by the use of communication technologies such as the telephone, the internet and other telemedicine initiatives. The experience of the South Africa TB control programme demonstrates the usefulness of having allied professionals and lay members of the community as conveyers of self-management.

In relation to the redesign of health systems and decision support

Relying on the community mobilization and resources becomes more critical as the level of resources of the health system shrinks. The role and potential of the community was expressed in many of the less developed countries experiences presented in the meeting (e.g., the organization of community cooperatives to make bulk purchases of needed drugs and equipment for diabetics in The Philippines).

In relation to information systems

Information systems are important for all health systems. In settings where computers are scarce, information systems can be paper-based (see Figure 6).
In all cases, information systems should be designed in all settings to serve equally the needs of:

- Patients: to support self-management strategies helping patients to make choices, set up care plans and treatment objectives in agreement with their carers, assess progress and support follow-up and adherence to treatment and care plans.
- Providers: to help providers in their daily practice to identify patients and track their risks, improve adherence to care plans and protocols, follow-up patients proactively, assess progress, support auditing of their practices and allow access to evidence when needed.
- Governments and planners: to help them understand and monitor new trends in the community, make projections and inform policies.

There are well known principles for designing information systems that also apply to chronic conditions. Information systems should only collect data that is useful. They should be simple, selective and clearly linked to programmes goals.
What WHO is doing to advance the agenda

WHO has in its possession the essential building blocks for advancing innovative care for chronic conditions.

We have a clear understanding of the issue.

We know that trying harder will not work, but formulating and implementing NEW systems of care will.

We have good information from which to build.

- We have highly effective biomedical and behavioural interventions for most major chronic illnesses
- We have reasonable evidence how to change health policies and delivery systems to improve care
- We have action-oriented improvement strategies to accomplish the changes

We have a Network of Innovators.

Through strategic partnering with experts from around the world, we can capitalize upon the excellent work that has been accomplished to date. We are also able to collaborate with governments, nongovernmental organizations, and other international organizations working in the same content area.

Future activities for the project include:

A WHO Global Report on Innovative Care for Chronic Conditions

This report will bring together the best evidence on innovative care for chronic conditions, around the world. It will also provide a framework and key recommendations for implementing these strategies in different health systems and resource contexts.
A Web-Based Observatory

This Internet-based resource centre will provide information and useful resources on innovative care for chronic conditions. It also will provide an opportunity for interested parties to join web discussion boards on different topics.

A Specialized Project on Adherence to Long-Term Therapies

Given the importance of adherence to effective care for chronic conditions, suboptimal levels of compliance with long-term therapies (50% or less), and the fact that this issue has been largely overlooked in health systems improvement, a specialized project on Adherence to Long-Term Therapies has been launched by WHO. This project will release a report of its main findings and recommendations in early 2002.

Action at the Country Level

Innovative Care implementation strategies will be tested in a selected sample of developing country health care systems. Following refinement of the model, technical assistance will be provided to countries in the formulation and implementation of innovative care approaches.

Additional information about WHO activities in this content area can be accessed at: http://www.who.int/ncd/chronic_care/index.htm
Participant Comments from the Meeting

Professor Albert G.B. AMOAH, Associate Professor, Vice Dean, University of Ghana Medical School
Very useful meeting in helping move the chronic care agenda forward.

Dr Don BERWICK, Institute for Healthcare Improvement
You've whetted my appetite for this work.

Dr Judy DICK, Health Systems Research Unit, Medical Research Council
Excellent workshop. Highlights were the improving chronic illness care model, Breakthrough series, and some discussions around the report, which were useful.

Dr Maria KOPP, Director, Institute of Behavioural Sciences
A most inspiring, innovative meeting

Dr Ingrid MUR-VEEMAN, University of Maastricht, Department of Health Organization Policy and Economics
The meeting was well structured and highly productive.

Dr Desiree M. NARVAEZ, Medical Officer VII, National Centres for Disease Prevention and Control, Department of Health
Useful for countries in all settings.

Ms Jean PENNY, National Redesign Leader, National Patients Access Team
Really helped to understand health care around the world.

Dr Maryse PIERRE-LOUIS, Lead Public Health Specialist, The World Bank
I would like to commend the team for gathering high-level professionals from different backgrounds and various agencies to provide feedback on and debate the important health challenge posed by chronic diseases and care. The WHO team did an outstanding job at making each participant very much at ease throughout the process.

Dr Sheri D. PRUITT, Director, Behavioural Medicine Division, The Permanente Medical Group
Thank you for organizing a stimulating and challenging meeting, and for bringing together such a diverse group of experts in chronic care.
Professor K. Srinath REDDY, Professor of Cardiology
It addressed a major area of health care, which does not usually receive policy makers' attention even though it affects a large number of people over a long part of their lives.

Dr Ed WAGNER, The Centre for Health Studies, Group Health Cooperative
The meeting was well organized. Small group activities fostered relationships and often generated useful ideas.
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