

Continuous quality development: a proposed national policy



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The object of a national policy for continuous quality development is joint action to make it an obligation and a permanent part of health professionals' activities at all levels in the health care system.

Continuous quality development: a proposed national policy

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TARGET 31

QUALITY OF CARE AND APPROPRIATE TECHNOLOGY

By the year 2000, there should be structures and processes in all Member States to ensure continuous improvement in the quality of health care and appropriate development and use of health technologies.

ABSTRACT

This document introduces the concept of continuous quality development (CQD): a dynamic process using the best outcomes of care continuously to raise the overall quality of care. It presents a model framework for a national policy for CQD, based on the Danish health care system. The principles of CQD are described, along with a definition of quality in health care and the roles of the principal actors in the process. The document specifies the responsibilities for CQD activities at the national, regional and local levels, and those of health care providers at all levels. It concludes by illustrating the principles described with examples of activities in Denmark and programmes of the WHO Regional Office for Europe.

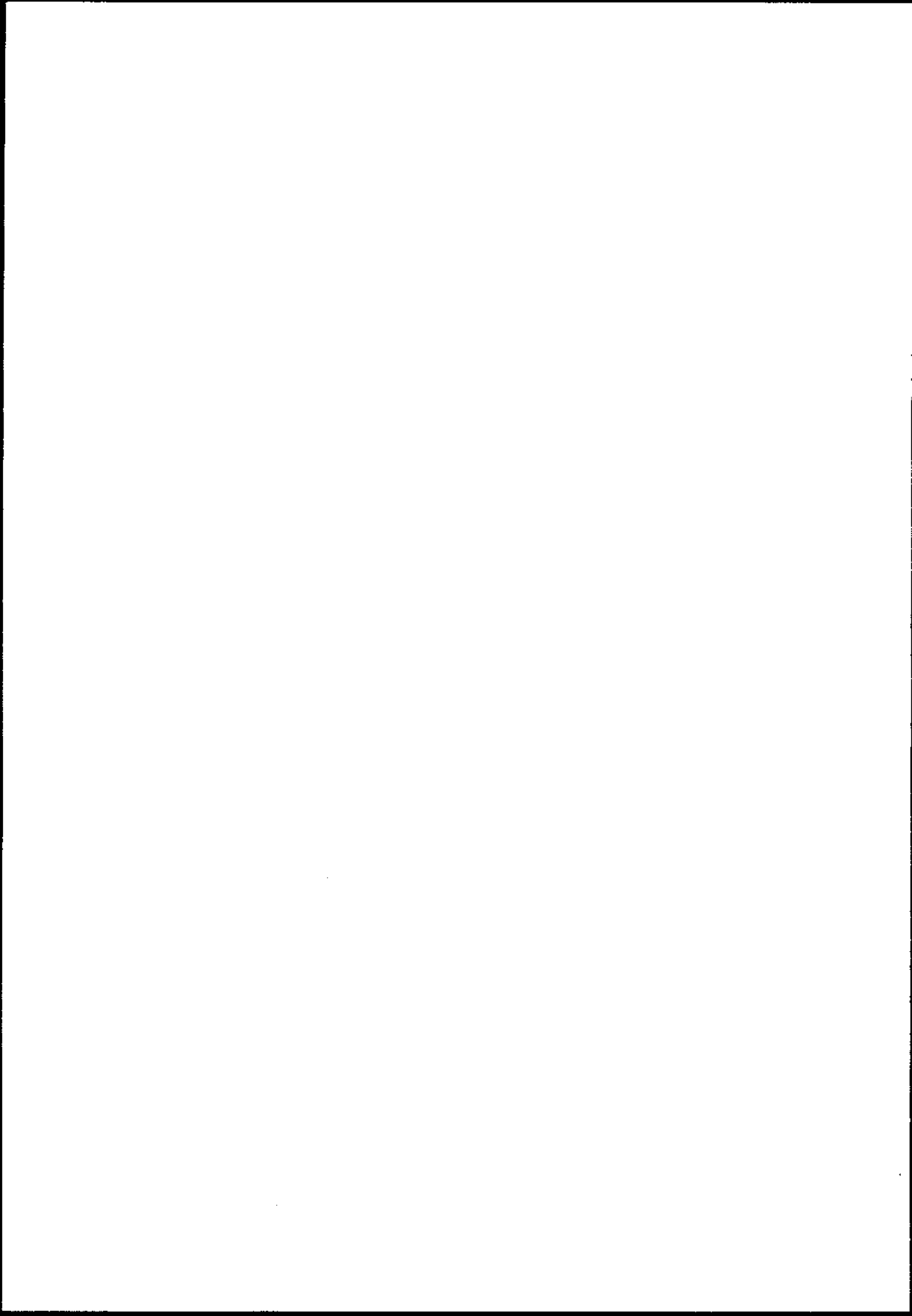
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Foreword

Continuous quality development is becoming a key term in the health services of the 1990s. Several reasons lie behind this. Patients and the population are increasingly aware of the quality of health services, and demand its improvement. Politicians and health care authorities require the documentation of quality, as well as its continuous development. These demands are made at a time of limited opportunities to ensure high quality by raising the health services budget. In short, the interests of the community require the achievement of as much health as possible within the existing framework of the health services.

Continuous quality development is a valuable tool to increase the quality of health services. Its essence is that quality goals are set on the basis of patients' and the community's wishes and expectations. People work through a continuous and systematic process towards goals that are continuously upgraded.

The WHO Regional Office for Europe has adopted continuous quality development in health services as the subject of one of the regional targets for health for all.

This document presents a model for a national policy to support the implementation of continuous quality development in health care at all levels.

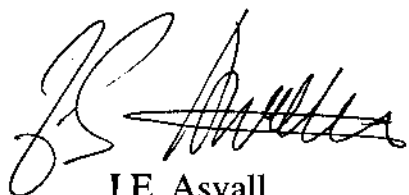
The Danish Ministry of Health, the Danish National Board of Health and the programme for the quality of care and technologies in the Regional Office cooperated on the design of the model. It is based on the experience in Denmark and at the international level in the field of quality development. The model comprises:

- a definition of quality and the main components in health care*
- a description of the basic principles of continuous quality development*
- an identification of the main actors, responsibilities and activities at all levels in a country's health services.*

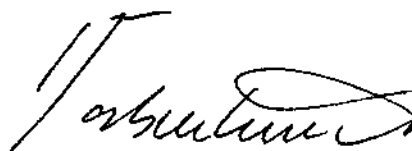
The model provides a policy that the Member States of the WHO European Region can adapt to their needs and circumstances.

Nevertheless, the model describes only the framework of the policy, leaving countries the important task of completing the structure with concrete planning, organization and implementation.

It is our hope that this model will inspire and support the implementation of continuous quality development at all levels of the health services, to the benefit of the health of the people of the European Region.



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Executive summary

Continuous quality development (CQD) is a must in health services: countries should include it in their national health policies as a means of raising the quality of care. This document presents a model that can furnish the framework for a national policy for CQD; countries can adapt the model to their special circumstances and needs. The principles of CQD should form the basis of activities at all levels in the health services.

1. The essence of CQD is making use of the best results of care in a continuing process that comprises:

- setting goals for quality;
- assessing quality and identifying the best results;
- improving quality by analysing and using know-how to achieve the best results; and
- follow-up (continuous application of the process).

2. Patients' experience should be taken into account.

3. Activities at the local level are the core of CQD, which should be an integral part of the daily work of all categories of staff.

4. Health care providers are the key actors. Responsibility for CQD lies with all individuals involved, but ultimately rests with managers at all levels of the health care system.

5. Successful CQD should be based on self-assessment and self-regulation, rather than control and legislation.

Every level of the health services has responsibilities for quality development. At the national level, health care authorities are responsible for the development

and implementation of a national policy on quality development. Their responsibilities include:

- research
- the identification of national health priorities and quality goals
- the establishment of databases
- appropriate feedback
- legislation and nationwide coordination.

At the regional level, health care authorities should:

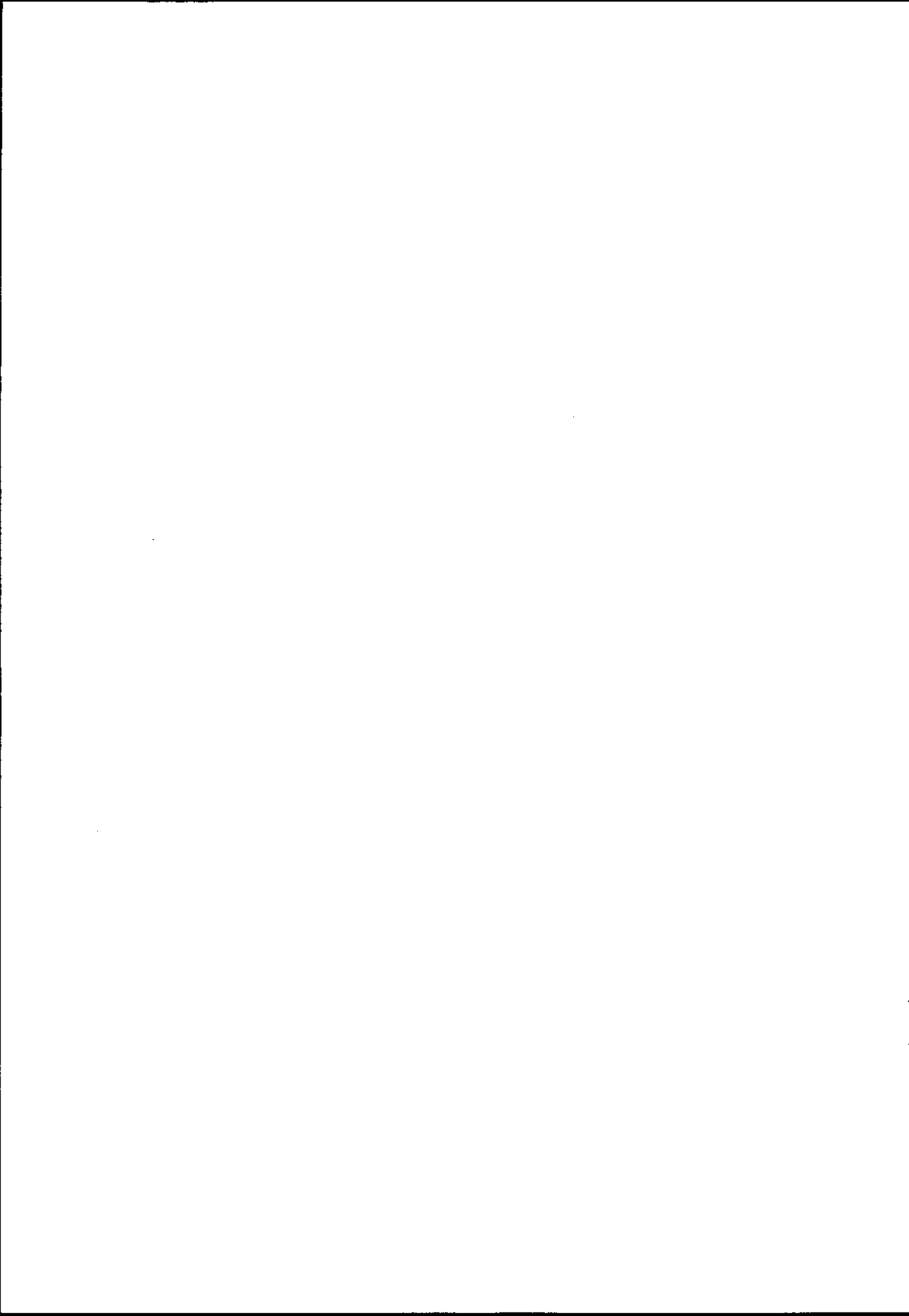
- establish goals and strategies in the health care plan for the region
- establish regional data collection to support the CQD process
- monitor achievements
- supply feedback to health care institutions
- facilitate cooperation in the region.

At the local level, managers of hospital and primary health care services are responsible for the implementation of CQD in daily routines and for taking action to improve the quality of care. As key actors, health care providers should include CQD in their daily work. The professional associations of health care providers are recognizing their obligation to implement CQD within their fields. This includes the identification of priority areas, goals and the definition of quality indicators.

In addition to the particular tasks at each level, all levels should pay special attention to:

- all steps of the CQD process;
- strengthening the influence of patients and facilitating open discussion and accountability to the public;
- establishing adequate information systems;

- creating key basic minimum data sets for each specialty;
- providing education on the concept and methods of CQD;
- setting priorities for resource allocation to CQD; and
- designing systems of incentives.



Introduction

Definition of Continuous Quality Development

This document introduces the concept of continuous quality development (CQD). This is a dynamic process that identifies and uses the best health care outcomes to achieve superlative practice; it encompasses the generally used concepts of quality control, assessment, improvement and assurance.

The word development is preferred as it implies a positive approach: that the quality of care is developed in a dynamic and progressive process.

CQD and Health for All

In 1984 the then 32 Member States of the WHO European Region adopted 38 targets; their achievement would mean that the countries had reached health for all (1). The targets were updated in 1991 (2). Several of them are relevant to quality issues.

CQD at the country level is the subject of target 31:

By the year 2000, there should be structures and processes in all Member States to ensure continuous improvement in the quality of health care and appropriate development and use of health technologies.

This could be achieved by establishing methods and procedures for the systematic monitoring, assessment and promotion of the quality of care delivered; making quality development a permanent component of health professionals' regular activities; and providing all health personnel with training in quality development.

Target 31 is the key tool for work towards achieving targets 26–30. These targets address appropriate care and describe strategies for improving the health

of the people of the Region through the provision of high-quality health care services. They focus on: health service policies, health service resources and management, primary health care, hospital care and community services to meet special needs. A central theme is the effective management of human, financial and material resources in a manner consistent with the development of the quality and cost-effectiveness of care.

The achievement of two other targets is important to the achievement of target 31. First, target 35 calls for health information systems in all European Member States that actively support the formulation, implementation, monitoring and evaluation of policies for health for all.

The continuous monitoring of the outcome of health care is a prerequisite to quality development. A national policy for CQD must include an information strategy. Second, target 38 calls for countries to have mechanisms to strengthen ethical considerations in the making of decisions relating to the health of individuals, groups and populations. The link with CQD is this target's emphasis on mechanisms that facilitate open discussion and accountability to the public.

Why a National Policy?

The issue of quality in health care has received serious attention throughout the Region during the last decade. The reasons for this may include the regional strategy for health for all but can also be found in the following conditions, which prevail in almost all Member States.

1. Patients and the public are increasingly aware of the quality of health services, and are demanding the improvement of the quality of all functions of the system.
2. Politicians and health care authorities require the documentation and improvement of quality and greater cost-effectiveness in health care.
3. Health professionals desire to improve their overall performance.
4. Variations in not only the outcome but also the delivery of care have given rise to the discussion of quality. This has revealed that there are often no clear

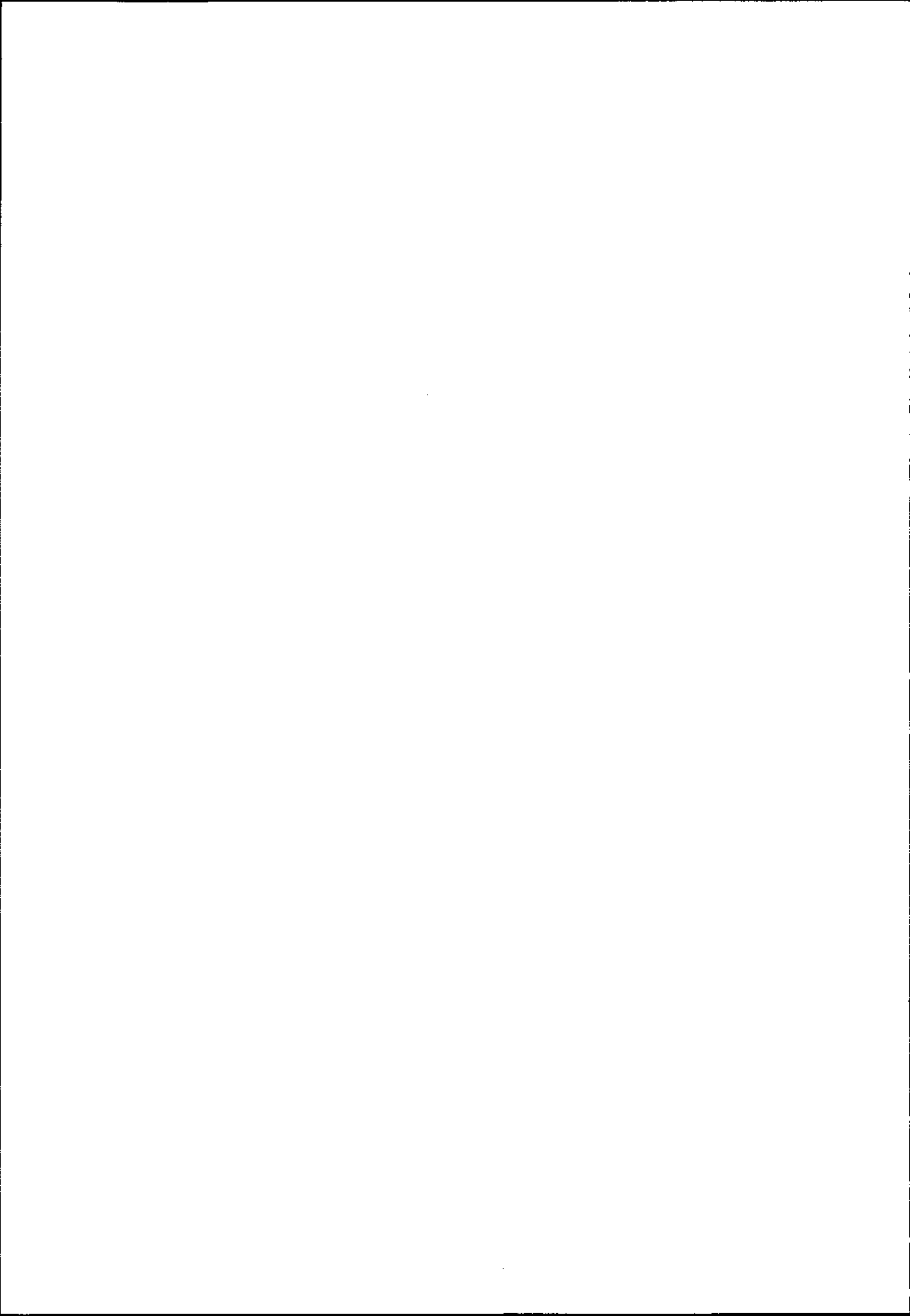
expectations of the standards for the outcome of care and no certain knowledge of or accountability for the outcome of daily routines.

Further, countries have limited opportunities to ensure high quality by expanding the health services budget. The development of quality requires the use of adequate tools. Research results have shown that quality development activities that include feedback loops to the individual responsible for care and comparison with peers have proved to be effective.

The challenge is therefore to incorporate CQD into national policies and local practice, to ensure that it is applied at all levels of health care in a country. The object of a national policy for CQD is joint action to make it an obligation and a permanent part of health professionals' activities at all levels of the health care system.

While quality development activities are important means to improve the quality of health care, the assessment of health technology and the development of guidelines for practice are also valuable tools. Other important means to ensure the quality of health care are:

- the appropriate distribution of specialized functions to the local and regional levels;
- the appropriate distribution of tasks and responsibilities to the various health care providers;
- education; and
- research.



Principles of CQD

Definition of Quality in Health Care

High-quality health care can be defined as care or a service with characteristics that meet specified requirements and, given the current state of knowledge and available resources, fulfil expectations for maximizing the benefits and minimizing the risks to the health and wellbeing of the patient (3).

This means that quality in health involves the professional performance of not only the functions directly related to health but also the service functions. The final impact on health (outcome) of the combination of efforts is crucial, but good care should also be delivered efficiently and in a manner that minimizes its risks. This definition places a responsibility for quality development on all categories of staff in the health services. To summarize, the components of high-quality health care can be described as:

- a high degree of professional excellence
- efficiency in the use of resources
- minimal risk to the patient
- satisfaction of the patient
- the final health impact.

Main Components in Health Care

Health care involves numerous activities, each of which is important in evaluations of the quality of care: functions directly related to health (health promotion and disease prevention, diagnosis, treatment and rehabilitation) and service functions (those involved in running and maintaining health care institutions). CQD addresses three aspects of health care: structure, process and outcome.

Structure refers to the organizational settings of care, including economic conditions, management, personnel, equipment, facilities and the information system. **Process** refers to the activities carried out to inform the patient and to deliver preventive, diagnostic, therapeutic and rehabilitation services. **Outcome** refers to the effects of the care given on the health or wellbeing of the patient and the degree of the patient's satisfaction. Outcome also refers to the efficiency of resource utilization.

Each of these aspects is important, but a positive outcome is the most important to the patient and the community. This is a strong reason for starting to measure the quality of care in terms of health outcomes. A good structure and a good process do not necessarily ensure a good outcome. Once particularly good outcomes are identified, it is important to focus on the process and the structure by which they were achieved.

Patient satisfaction is an outcome of care in itself and therefore an objective of quality development. Outcome in terms of health status, however, must outweigh outcome in terms of patient satisfaction in quality development, as satisfaction can be achieved even if the health outcome is poor.

In addition, knowledge and information must be available on the outcomes at different levels as well as on structure and process. An appropriate information system must be available to aggregate and analyse relevant data.

Basic Principles of CQD

CQD is a dynamic process based on the following principles:

- the identification and use of the best outcomes to achieve superlative practice;
- the explicit definition of quality goals;
- continuous professional self-assessment;
- professional self-regulation; and
- committed leadership and patient involvement.

The process

A wide variety of methods for quality development exists, including medical audit and peer review. Regardless of the methods used, a series of common steps must be taken. These include:

- goal setting
- quality assessment
- quality improvement
- follow-up.

Goal setting means defining criteria and standards for quality. **Quality assessment** includes defining indicators of quality, and collecting and analysing data, and giving feedback to care providers. Data collection and analysis mean both identifying the best results and thus the processes and structures conducive to them, and, when the quality of care does not meet the criteria or standards set, finding reasons and solutions. **Quality improvement** means developing and taking action. Finally, **follow-up** means monitoring and evaluating the impact of the action taken, continuously monitoring and assessing the quality of care, and identifying positive outcomes in order to update the quality criteria or standards.

The nature of CQD differs from health research. While research systematically seeks new knowledge, CQD systematically reviews data to ensure the optimal use of new, validated knowledge. Both, however, require a methodology based on sound scientific principles.

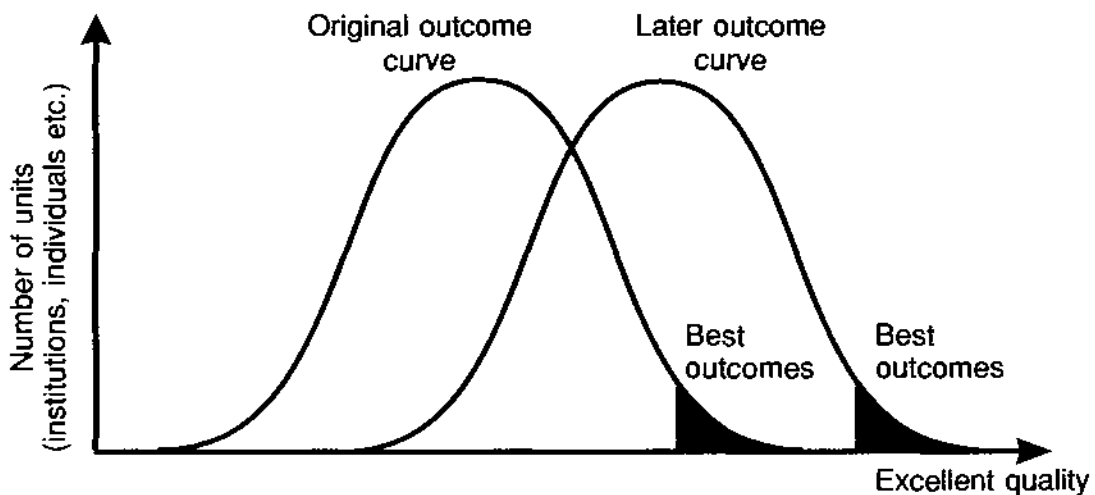
Theory of good apples

The basis of the CQD model is often called the theory of good apples (4,5). The aim is to identify the best results of care and to use them to improve practice as a whole, rather than to identify and eliminate poor outcomes (bad apples).

The theory of good apples is applied by examining the curve of the outcomes in a particular area of care. Theoretically, 5% will be very good, 90% good and 5% poor. The next step is to compare the outcomes and identify the best (positive outliers). Then analysis reveals the process by which the best outcomes were achieved and the structure that supported the process. On the basis of the analysis,

guidelines for practice can be worked out and then used more widely. This approach allows a continuous shift of the whole outcome curve towards higher quality through a process of setting and achieving ever higher goals of quality (Fig. 1).

Fig. 1. Continuous shift towards excellent quality



Defining area-specific indicators and comparing outcomes also allows the identification of centres of excellence, which can provide teaching and training for interested parties. This method can be used at the international, national, regional and local levels and in all kinds of health care settings.

This model for CQD has been successfully used at the international and national levels in such areas as oral health care, the prevention of hospital-acquired infections and the management of diabetes (see Chapters 3 and 4).

Experience has shown that the exchange of ideas and positive incentives to improve quality have been more effective than punitive measures against poor outcomes. Nevertheless, the identification of bad apples remains necessary. The health professions are responsible for taking action to shift poor outcomes towards the average or to eliminate them. The health care system should include measures to ensure action on this responsibility.

Goals for quality

Besides a knowledge of one's own performance, the prerequisites for CQD include setting goals for quality. Such goals should be set through a dialogue between health care professionals and political and administrative decision-makers. Before this, however, the professionals should use their experience to discuss and decide on what they consider the optimum quality to be. Patients should contribute their experience and wishes to this process.

Quality goals are often called criteria or standards. Criteria for care are statements against which aspects of the quality of an activity or service are compared in measurable terms. Health professionals use scientific and clinical evidence to develop them. Standards draw the borderline between acceptable and unacceptable quality under the prevailing conditions, and are developed in a dialogue between professionals and political and administrative decision-makers.

Outcome indicators must be developed to measure and compare the results of health care. These indicators are used to measure what happens or does not happen to patients after care and can be used to measure the quality of care provided by a whole service. The incidence of complications and the degree of recovery or fitness can be outcome indicators (5,6). To ensure that indicators are valid, relevant and realistic, health care providers must be actively involved in developing them, through their professional associations, if desirable.

Roles of the actors

Patients and the community

Patients and the community as a whole are the beneficiaries of health care services. Patients' experience of the structure, process and outcome of their care can add valuable information to CQD and should be used as feedback.

Health professionals

Action by health professionals at the local level (in institutions, departments and daily practices) is the foundation of CQD. As mentioned, CQD must form a permanent, integral part of the daily routines of all categories of staff. This requires the commitment and involvement of everyone working in the health care

system; professionals must recognize that the ultimate objective of their efforts is not only to meet a moral obligation but also to improve their job satisfaction.

One of the central principles of CQD is that the quality of care can be better promoted by strengthening health workers' opportunities for self-assessment and self-regulation than by imposing means of control and punitive measures. CQD activities give health care professionals a better knowledge of the current quality of their work and how it is progressing. Because everybody fundamentally wants to do work of high quality, this knowledge provides an incentive for further quality development and an opportunity for personal development.

Managers

While the key actors in CQD activities are the health professionals, the ultimate responsibility for its success lies with the managers at all levels of the health care system. They alone can ensure the incorporation of CQD in daily routines. This includes playing an active role in the process by:

- explicitly choosing general goals and strategies in cooperation with care providers;
- facilitating the setting of detailed criteria and standards for quality;
- requesting the definition of indicators;
- taking action to improve quality;
- giving feedback to care providers;
- evaluating and following up results; and
- making decisions on education and further training.

Further, managers must foster the staff's commitment to and involvement in the process by:

- advocating the principles of CQD
- creating effective incentives for participation
- facilitating interdisciplinary and intersectoral cooperation among all parties.

Responsibilities at all levels

The implementation of a national policy for CQD requires agreement on clearly defined responsibilities and activities in the health care system. No matter the formal structure and division of responsibility, the health care system of any country can be divided into various levels. A prerequisite to successfully developing the quality of health services is joint action in which each level has its own responsibilities.

All levels are responsible for CQD. Responsibility falls on health authorities at the national and regional levels, and on the authorities and the managers of hospital and primary health care settings and units within them at the local level. In addition, health care providers and their professional associations have a key role.

The implementation of CQD at the country level requires special consideration for a number of issues. Some of these are common to all levels while others are specific to one.

Examples of the division of responsibility between levels in Denmark are presented in Chapter 3.

Common Responsibilities

All levels are responsible for the following activities, which are therefore presented in general terms. Nevertheless, their implementation must be adjusted to the special conditions and duties at each level.

Supporting the process

All levels should keep the process running; this involves five tasks. The first is **setting goals**. This means:

- identifying variations in quality for use in determining health care areas of high priority; and
- setting realistic goals for CQD in the priority areas, including short- and long-term targets.

Monitoring is the second task, and includes:

- defining quality indicators;
- collecting data for use in each institution involved and for comparisons between institutions; and
- monitoring the results and the process.

The third task, **information activities**, includes:

- feeding back information to the providers of data for use in comparisons;
- sharing information and experience within and between levels.

This means publishing and distributing reports that describe practical experience, including both successes and problems. The result should be widespread awareness and knowledge of the principles and methods of CQD.

Fourth is **creating incentives** for the implementation of CQD by, for example, making quality development activities conditions for employment and promotion, and by making agreements on how to use the savings that can result from CQD.

The final task is **evaluating and following up** the impact of work for CQD. This should include reporting the results and the wide dissemination of this information.

Involving patients

Strengthening the influence of patients on health care is an important part of CQD. Managers and care providers at all levels must create opportunities to involve patients, patients' organizations and the population in the process, and listen to their definitions of their needs, problems and expectations for the quality of health

care. Managers and care providers must also respect the rights of patients and patients' organizations to information on such topics as outcome, risk and the quality of hospitals. This is particularly important when patients have the freedom to choose their health care institutions.

Running an information system

CQD requires the continuous collection of information on the outcome of health care. Designing (or redesigning) and organizing data collection systems are therefore important responsibilities at all levels.

This requires, first, the provision of an information support system (either computerized or manual), which ensures that the collection and aggregation of data form an integral and necessary part of daily work and do not take time from daily activities. This could include the development of specialized software to facilitate the collection and analysis of data, and the monitoring of indicators (5).

Second, a basic minimum data set must be created to allow systematic collection. The set must include not only the data required to elaborate the outcome indicator but also those needed to detect key elements that could modify the outcome and help to classify patients (according to their age, sex, diagnosis, co-morbidities and severity of illness). Basic minimum data sets for each specialty, created by consensus, will allow individual institutions to measure their outcome over a long period of time and facilitate comparisons between different institutions (5,6).

Third, sources of existing data useful in CQD should be identified. These include: medical records, incident reports, routinely collected statistics, the opinions of patients and health professionals, and databases of different types at different levels. Nevertheless, the data needed to ensure high-quality health care must largely be generated by and for health care providers.

Further, CQD should be applied to the completeness, relevance and validity of data and their collection, including medical and administrative data and those collected for quality development activities. In addition, the costs and benefits of collecting data should be assessed, bearing in mind that the improvement of

quality is the ultimate goal. Finally, the legal aspects of all information activities must be considered and the confidentiality of data ensured.

Education

Everyone in the health care system needs education to accept the idea of CQD, to use the results and to play their part in the activities involved. Special courses and other activities should be maintained to disseminate the concept and methods and to encourage staff to apply them. Teamwork should be encouraged, particularly between health professions and between professionals and managers. Consideration should be given to the introduction of the concept of CQD to all curricula for health professionals.

Regional and local health authorities should give special consideration to educational activities.

Securing resources

CQD requires resources; for example, time is needed, particularly in the beginning when people have to learn new principles and methods. The design and establishment of databases, monitoring and education also require resources: money and staff time. The activities to be carried out should therefore be matched with the resources available, and their feasibility and likely impact should determine their priority.

CQD should be funded as part of the health care budget. Ways to accomplish this must be considered at all levels. It must be stressed, however, that monitoring and developing the quality of care do not necessarily entail extra costs and time. In addition, the results have a cost-cutting effect by helping the health care system to avoid unnecessary and inappropriate treatment and diagnostic procedures, errors and complications.

Health service staff and managers should agree in advance on what to do with any savings that result from CQD. As mentioned, such agreements can provide incentives to implementation. While better results for patients is the most important incentive to CQD for health professionals, the demonstration of the

cost-effectiveness of the process and patient satisfaction can be remarkably strong promotional factors for all parties.

Responsibilities of Each Level

The national level

The primary task of health care authorities at the national level is to contribute to the development and implementation of an explicit national policy on CQD in the health care system. This requires close collaboration between the national authorities and those at the regional and local levels, the health care professions and their professional associations, and relevant research centres. In addition, patients' organizations must be involved in a national policy.

National health care authorities have 10 tasks to accomplish in carrying out their responsibility:

- supporting research on and the development of principles and methods for CQD including medical technology assessment (with early warning mechanisms) and the creation of guidelines for practice;
- continuously urging regional authorities, local authorities and managers, and care providers to maintain the local process;
- identifying priority health areas for the country and facilitating the establishment of national criteria, standards and indicators of quality for these areas (perhaps beginning, as this process is complicated, with a limited number);
- providing statistics on the priority areas that allow the description and comparison of the quality of the services in primary health care, hospitals, the regions and the country as a whole;
- ensuring the establishment of national databases, placing them (as self-regulation is the core of CQD) in hospitals or other institutions rather than with supervising authorities;

- establishing a national action plan for the assessment of medical technology, including an early warning system;
- coordinating national work for CQD with that of the regional and local levels, and the professional associations;
- advising and guiding regional and local health care authorities;
- taking part in the work for CQD at the international level, particularly the activities of the WHO Regional Office for Europe and the European Community (EC); and
- stimulating activities in the country through participation in comparative studies of countries with similar health problems (with the Regional Office providing the structure, the methodology and the data).

National authorities should consider using existing national, regional or local institutions, and/or establishing special bodies or committees to complete these tasks.

In addition, national authorities should consider the need for supportive legislation. Naturally, the extension of legislation depends on the formal structure of health services in each country. Because legislation in itself cannot ensure quality development in health care, it should build a framework to ensure the establishment of self-regulation and the acceleration of the implementation of the CQD process.

The regional level

The health care authorities at the regional level must put CQD in focus by establishing goals and policies in their own priority health care areas and ensure that they are incorporated in the health care plans for each region. As part of each plan, the authorities should require each health care institution in the region to take part in CQD and to report the results of its efforts. The special responsibilities of regional authorities also include ensuring that:

- data are collected on the quality indicators of each institution in the region;

-
- the effectiveness of each institution's work for CQD is monitored; and
 - the institutions receive feedback.

Another important task is to facilitate interdisciplinary and intersectoral cooperation. The authorities can establish regional committees or steering groups to handle this work in each priority health area.

The local level

The managers of hospitals and primary health care settings, and units within them, are responsible for planning and ensuring the implementation of the CQD process in the daily routines of all health workers. They should also demand reports on the results of these activities and take the action indicated to improve the quality of care.

Most major problems with quality cut across departments and sectors; thus, managers at the local level must facilitate interdisciplinary and intersectoral cooperation. In addition, the internal organization of local activities needs special consideration. This could be the task of teams established for this purpose, such as so-called quality circles. The appointment of task forces may also be considered.

Care providers and their professional associations

As the key actors in CQD, care providers at all levels must take part in all activities in the process and, as mentioned, incorporate CQD in their daily routines. Success requires close collaboration between the various health professions, overcoming differences in duties and professional culture.

Care providers must be aware of the quality of their own work and have the responsibility and authority to take measures to improve it if necessary. To do this, providers should receive the information that they need regularly to identify the most important quality problems to be tackled in their institution or region.

The associations of health care professionals are accepting their professional and ethical obligation to point out priority areas for CQD and to implement the process (including medical technology assessment and the creation of guidelines for practice) within their own fields (7,8). These associations should be

encouraged to reach consensus on the indicators for use in monitoring and measuring the outcome of care.

Further, the physicians and other health workers in each specialty should agree on the quality indicators that will be continuously monitored nation-wide.

Other actors

This model for CQD is based on the health care services in Denmark, which are financed by public funds (with very few exceptions). In countries with semi-public or private health services, additional actors have an interest in quality development. For example, insurance companies that pay for health services take a great interest in having access to information, reviewing the quality of care and setting criteria and standards for quality.

Quality development is an important tool for private health services in two areas: ensuring high-quality services and competing for patients. These may influence the kind of treatment and services offered. Coordinating quality development by the public and the private health services is an important issue.

Activities in Denmark

In recent years, quality development has become a key element in discussions of Danish health policy and in the activities of the health care sector. A wide variety of quality development activities at all levels has been reported. These activities include not only courses, workshops and conferences on the principles and practice of quality development but also implementation in the daily work in various hospitals and primary health care and throughout the country are now a reality.

This chapter gives examples to illustrate the reflection of the principles of CQD in the activities and the division of responsibility for CQD between the levels of the health care system in Denmark.^a

The National Level

Parties involved

At the national level, the political responsibility for CQD in health care rests with the Ministry of Health, while the responsibility for the implementation of the process and related activities is delegated to the National Board of Health. To support CQD, the Ministry of Health introduced three bills that were passed in 1992.

The first gives patients the right to a free choice of hospitals. This includes the right to information on waiting lists, the frequency of complications and other matters. The initiative has already proved to be an incentive to hospitals to work for CQD in order to compete for patients.

^aFurther information on the work for quality development in Denmark, and contact with key people in the process, can be provided by the National Board of Health, Amaliegade 13, P.O. Box 2020, 1012 Copenhagen K, Denmark.

The second focuses on the appropriate local and regional distribution of specialized functions, to ensure optimal treatment of rare and complicated diseases. It requires that an obligation to maintain quality development accompany the siting of a specialized function at a hospital.

The third addresses the coordinated planning and organization of the health services. A central subject of planning will be CQD and the establishment of national goals for the activities involved.

To a large extent, two committees set up by the National Board of Health – a medical technology committee and a practice guidelines committee – maintained quality development activities in Denmark. The committees were to collect, adapt and disseminate existing knowledge, and to develop models and recommendations and to support the more systematic use of medical technology assessment and practice guidelines in the health care system.

To ensure joint action on quality development in the health services, the two committees were united to form a CQD committee in 1992. Its task is to support and strengthen activities for CQD, medical technology assessment and the creation of practice guidelines. The committee is interdisciplinary, with representatives of national, regional and local health authorities, research institutes and professional associations.

The National Board of Health has contributed by publishing a series of pamphlets on:

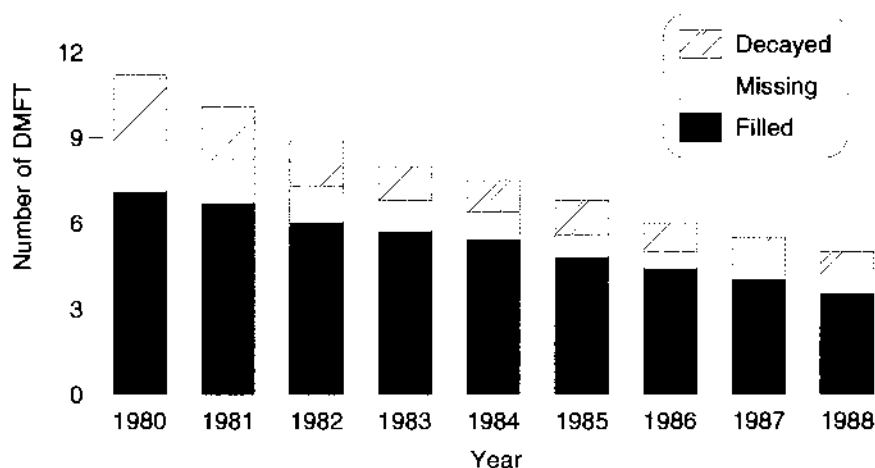
- the concept of medical technology assessment (9);
- ultrasound scanning of pregnant women as an example of medical technology assessment (10);
- a wide variety of current projects in hospitals and primary health care on quality assurance and practice guidelines (11);
- how to make practice guidelines (12);
- examples of practice guidelines on acute myocardial infarction and infections of the urinary tract in children (13–15); and
- the principles and practice of CQD (16).

As the local level is to maintain quality development activities, the Ministry of Health and the National Board of Health consider their most important task to be encouraging the regional and local levels by requesting them to work for CQD and report the results of their efforts, and establishing databases for systematic data collection.

Dental care for children

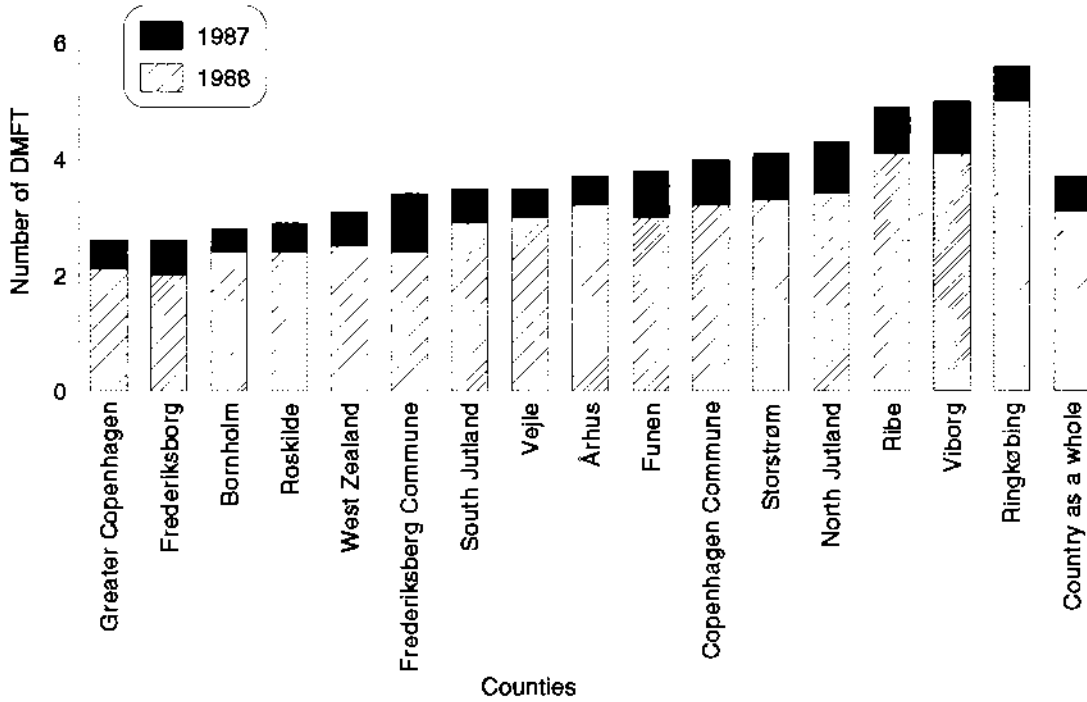
The Danish dental health service has used systematic data collection to monitor and compare oral health outcomes and educational measures for 20 years. Since 1972, Danish dentists have registered the oral health conditions of all child patients. Data collection is an integral part of dentists' daily activities, and well defined indicators and a standardized recording system are used. The data are reported to the National Board of Health; the Board publishes annual statistics that show the results of preventive work in each county and the country as a whole, and allow for adequate revision of programmes for oral health education and care. This has been a contributory factor in the drastic decline in the incidence of caries in children (17), which is illustrated in Fig. 2 and 3.

Fig. 2. Average caries experience in seven-year-old children in Denmark, 1980–1988, expressed as decayed, missing (or extracted) and filled teeth (DMFT)



Source: National Board of Health (18).

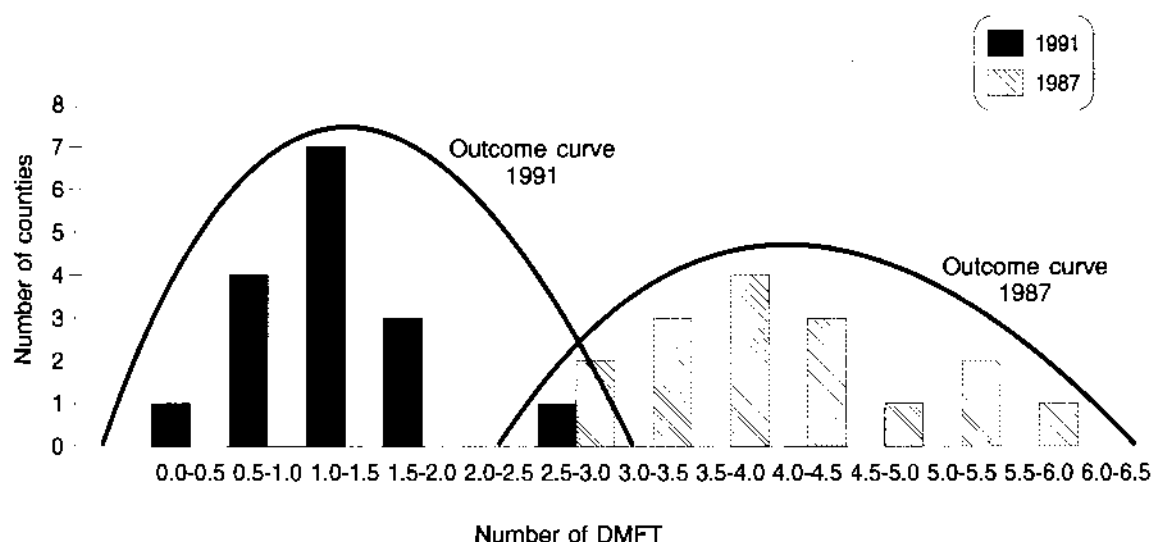
Fig. 3. Variations between counties in caries experience in twelve-year-old children in Denmark, 1987 and 1988, expressed as decayed, missing and filled teeth (DMFT)



Source: National Board of Health (18).

Fig. 4 allows a comparison at the county level of the average caries experience in twelve-year-old children in 1987 and 1991, illustrating a shift towards excellent quality (0 DMFT). The best results in 1987 are equivalent to the poorest results in 1991.

Fig. 4. Improvement in dental care as shown by the average caries experience in twelve-year-old children in Danish counties, in 1987 and 1991



Source: Skak-Iversen et al. (17) and National Board of Health (18).

Surgical wound infection

The surgical departments in Danish hospitals show a growing interest in monitoring surgical wound infections. In 1987, 6% of all surgical departments performed continuous surveillance; in 1992, nearly 60% did so, using the same basic minimum data set as the WHO initiative WHOCARE (see Chapter 4).

A number of sentinel hospitals regularly supply data on their results to a central database at the State Serum Institute in Copenhagen (19). Since the introduction of continuous surveillance and feedback, these hospitals have

reported a decrease in the rate of surgical wound infections of 15–20% over a period of two and a half years. Most marked is the 20–30% reduction of surgical wound infections following clean surgery. While these results are promising, the validity of the data collection process requires confirmation.

Perinatal audit

Since 1987, perinatal audit committees have made formal quality assessments of perinatal care in a number of Danish counties. Almost half of the 16 counties have participated, and the number is increasing. Experts in perinatology continuously review the quality of care in every case of neonatal or perinatal death to evaluate whether performance had met standards or whether another treatment might have prevented the death.

The outcome of such audits has primarily been an insight into the aspects of the structure and organization of perinatal and maternity care in which changes would result in a decrease in perinatal mortality rates. A quality assessment of prenatal care, for example, has pinpointed the necessity to change the measures taken when pregnant women report reduced or no fetal movement. Auditing the processes has meant more explicit definitions of criteria and standards for the quality of care. The results of the audits are used in the development of internal guidelines, the reorganization of departments and the training of all staff involved.

Diabetes care

Further, a working party under the auspices of the National Board of Health has made a draft report on future diabetes treatment in Denmark. The draft presents recommendations on the organization of treatment and targets for treatment and outcome, and calls for continuous monitoring and evaluation of all three.

The treatment targets cover metabolic regulation and other factors related to the risk of developing late diabetic complications. The long-term targets are largely in line with the targets for treatment in the St Vincent Declaration on diabetes care and research (21). The recommendations point out that the monitoring of treatment and outcome for the development of quality requires the systematic registration of relevant data on all diabetic patients. The working party

recommends that a county liaison committee regularly collect data from each place of treatment, to be used in an evaluation of treatment in the county and to be forwarded to a central database to enable nation-wide evaluation.

The draft report is still under consideration, and has not yet been approved by the National Board of Health.

Lower limb amputations in diabetic patients

Since 1972 the Danish Amputation Register has collected data on patients with upper and lower limb amputations. As the rate of limb amputations is an indicator of the quality of diabetes care, the register allows surveillance of the quality of diabetes care.

A study using records from the Danish Amputation Register and the National Patient Register (20) indicates a decrease in lower limb amputations in diabetic patients from 681 in 1980 to 463 in 1989. This period also saw a decrease in the rate of hospital admissions for diabetic patients (from 11 to 7 per 100 000 population), and a reduction in the days spent in hospital by diabetic amputees (from 55 to 37).

There could be a number of reasons for these results. The reduction of the days in hospital may be due to improved outpatient preparation prior to admission, better general health of diabetics and a greater availability of home nursing services. Further, the reductions in diabetic admissions to hospital, days in hospital and lower limb amputations could be due to an overall improvement of diabetes care, including improved foot care, a more aggressive treatment of high blood pressure, better control of blood glucose levels with home monitoring, and improved insulin products (20).

Registers and databases

Many central registers and databases have been established in Denmark. All have data for use in epidemiological studies but only a few of them also allow the monitoring and comparison of the quality of care given. Databases on the outcomes of health care are still not common. New ways of thinking are needed to solve this problem.

The following are a few of the registers in Denmark: the Danish Cancer Register, the central Psychiatry Register and the Danish Amputation Register. All registers aim at complete coverage. Registers in the National Board of Health include: the National Patient Register (with data on patients with somatic disease, covering each patient's age, sex and diagnosis, and the name of the hospital, the admission date and surgical procedures, if applicable), the Medical Register of Births, the Register of Congenital Malformations, Causes of Death in Denmark and the Danish Registry of Child Dental Services (covering all children aged 3–15 years).

The Regional Level

All counties in Denmark are working for quality development. Although the activities differ, to a great extent they have the same content. Three examples are presented, all of which show close collaboration between the political, administrative and professional levels.

Introducing quality development in Frederiksborg County

By making CQD a priority part of the plan for the health services of Frederiksborg County, this project aims at incorporating it in daily routines in all health care institutions. The project was initiated in 1991 through collaboration between the health care authorities of the county, the Ministry of Health and the National Board of Health.

The concept of CQD is defined as comprising:

- the implementation of continuous quality assessment and improvement processes using modern technical and theoretical tools;
- the application of the methods of technology assessment; and
- the active use of locally developed guidelines, including agreements on task assignments and the use of resources.

A Steering Committee on Quality Development was set up with representatives from the five hospitals and the general practitioners of the county. As a start, existing activities on quality assurance were mapped, and education courses and

other information activities were organized on this basis. The strategy was to support the implementation of CQD by training managers and leaders in the use of quality development tools and demanding feedback on the quality of all their activities. Courses were also conducted for nurses and younger physicians. Quality development groups in the hospital departments work on issues defined jointly by managers and the staff involved to ensure that the changes that staff will implement arise from their own suggestions.

A contract strategy in Funen County

In 1990, an interdisciplinary steering committee was set up in Funen County to initiate, support and coordinate projects on quality development in hospitals. The work has been structured as follows.

1. A "contract strategy" is introduced, meaning that all hospitals in the county enter into contracts with the health care authorities that cover economic conditions, activities and quality. The strategy implies the formulation of quality goals for each hospital and for the hospital sector in the county.

2. Courses and other educational activities on quality development are provided. The primary responsibility rests with the managers of hospitals and departments.

3. Quality development projects are started on functions related directly to health and service functions. To start, a few projects on selected issues are initiated.

4. Common quality indicators are selected.

5. Common information systems are established where possible, to allow comparisons to be made.

6. Patient satisfaction is systematically investigated through questionnaires, to allow the identification of problems and the monitoring of improvements in quality.

7. Priority areas for quality development are identified through collaboration between political and administrative decision-makers, the managers of hospitals and hospital departments, and hospital staff and patients.

Quality development in the regional plan in Vejle County

Quality development is an integral part of the plan for the health services of Vejle County, which was adopted in 1991. The plan resulted from an open discussion involving the population, health personnel and the municipalities in the county. It includes a number of quality goals for health-related and service functions, and goals for the implementation of quality development in hospitals and primary health care, including:

- the establishment of a limited number of relevant, valid and easily obtainable quality indicators; and
- the development of guidelines for practice for priority areas (such as acute myocardial infarction).

A wide variety of projects has been established in the county.

The Local Level

The projects and other activities on quality development in hospitals and primary health care are numerous. Health care professionals initiated some, while others have been initiated by managers. Examples of these “bottom-up” and “top-down” approaches to organization are presented, followed by a list of some current projects.

“Top-down” approach in Roskilde Hospital

Roskilde Hospital, in Roskilde County, is implementing quality development on the decision of the hospital management. Two departments will obtain experience with principles and methods as pilot sites before work for quality development is introduced in other departments.

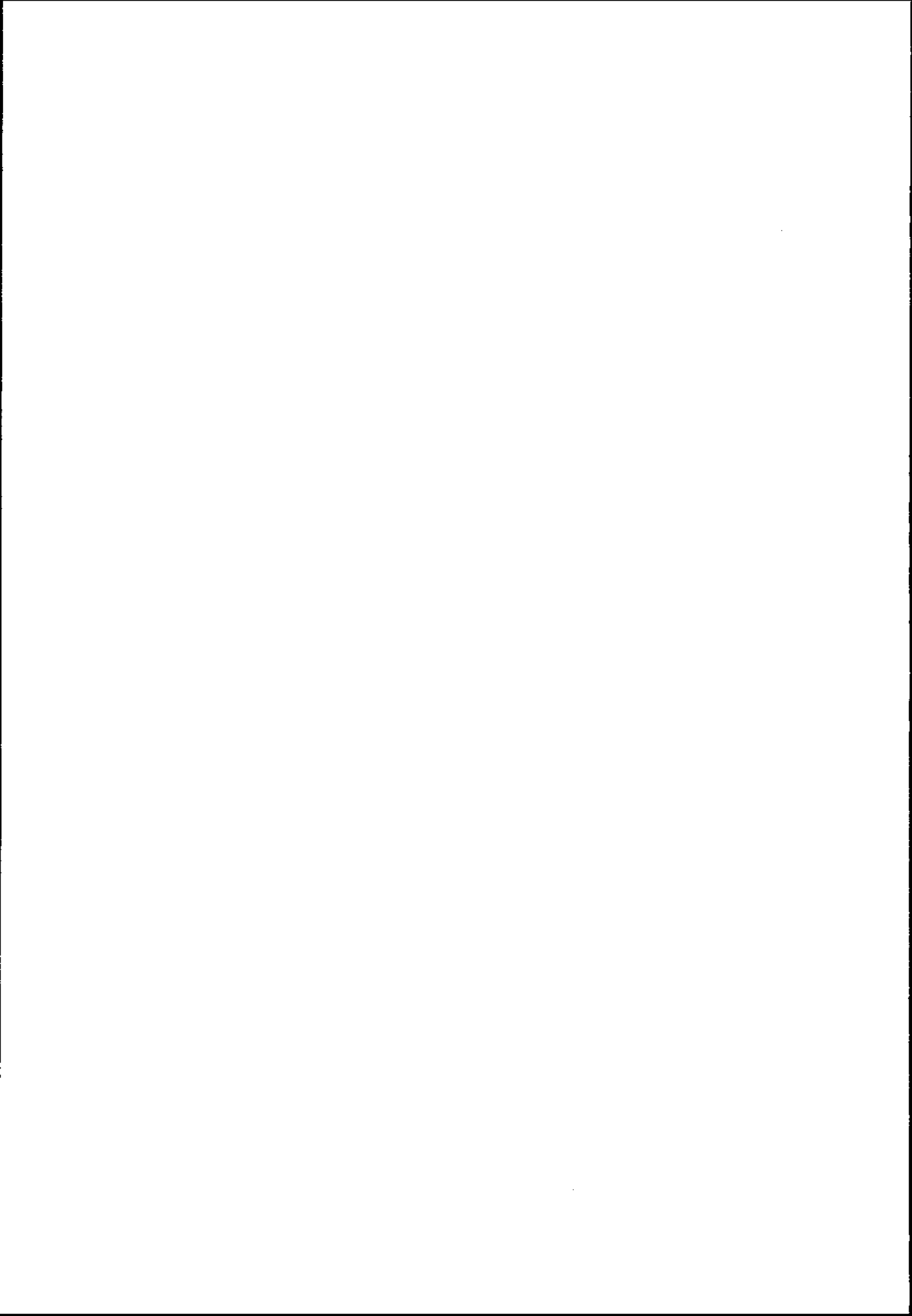
“Bottom-up” approach in Bispebjerg Hospital

In Copenhagen Commune, a surgical department in Bispebjerg Hospital is developing the quality of care through ensuring continuity of care for its patients. Ward rounds and other activities have been reorganized to meet the quality criterion: each patient is seen by the same medical practitioner and contact nurse throughout his or her stay in hospital.

Current projects

A previously mentioned publication of the National Board of Health (4) describes more than 80 current quality development projects. The following are listed to give an idea of their diversity.

1. An orthopaedic surgery department has set quality goals for patients' waiting time and length of stay. The project includes quality assessment of case records, nursing records and X-rays.
2. Another orthopaedic surgery department has set quality goals for the treatment for hip fractures, covering the length of stay in hospital, degree of mobility after treatment, infection rates and patient satisfaction.
3. A project on the quality of care for diabetes mellitus has set quality indicators for late complications and patient satisfaction, and includes cost-benefit analysis.
4. A project on the re-examination of hearing aids uses patient questionnaires to pinpoint problems in order to ensure optimum quality of treatment.
5. A project focuses on the assessment and development of the quality of obstetric services and includes the creation of guidelines for practice.
6. A project on anaesthesiology and perioperative care has developed indicators on patient information, patient waiting time, staff continuity, the sufficiency of analgesic treatment, perioperative side effects and patient satisfaction.
7. A project examines the short- and long-term results of cataract operations that include the implantation of artificial eye lenses, assessed by a computer-aided cataract analysis system.



Programmes of the WHO Regional Office for Europe

The WHO Regional Office for Europe has taken an active interest in promoting quality development. Within the Regional Office, the programme for quality of care and technologies (QCT) works to implement the concept of CQD. The QCT programme has focused on developing outcome indicators and information systems that make institutions and individuals aware of their own performance and facilitate multicentre and multinational studies.

As a result, two such information systems have been introduced in recent years and the results obtained show how they greatly facilitate the evaluation and comparison of treatment outcomes. WHOCARE focuses on surgical wound infections and DIABCARE on the quality of care of diabetes. A similar system is under development: the ORATEL computerized information system for quality management in oral health.^a

Action Programme for Surgical Interventions

The goal of this action programme is the reduction of surgical wound infections. Worldwide, 6–10% of all patients in hospital are estimated to contract hospital-acquired infections. About 4% of all such patients die as a direct or indirect result of these infections. Wound infections following surgery account for about 25% of hospital-acquired infections, but account for about 60% of the added bed-days and 40% of the total added cost. Thus, the reduction of surgical wound infections was chosen as a priority.

^aFurther information on the work for quality development in the Regional Office can be obtained from the Quality of Care and Technologies unit, WHO Regional Office for Europe, Scherfigsvej 8, 2100 Copenhagen Ø, Denmark.

In collaboration with the State Serum Institute in Copenhagen, Denmark and the Institute of Hygiene and Epidemiology, in Brussels, Belgium, the Regional Office developed a simple software that enables surgical departments to be constantly aware of their own performance and to measure their performance against other comparable sites (22,23). The concept of direct feedback to the units involved was pilot-tested in a trial in 1988. At present, 35% of the hospitals in Belgium and 60% of those in Denmark employ the system of continuous surveillance; the Danish hospitals report significant reductions in surgical wound infections (see Chapter 3).

A WHOCARE software package and a manual punch card system are available (24). A central database of WHOCARE users has been established at the State Serum Institute (the WHOCARE distribution centre). The database allows users in individual Member States of the WHO European Region to establish contact with and learn from each other. A more comprehensive version of WHOCARE is to be available in spring 1993; it allows the monitoring of not only surgical wound infections but also other types of hospital-acquired infection, and individual research activities.

Action Programme for the Improvement of Quality in Diabetes Care

Collaboration between the Regional Office and the International Diabetes Federation, European Region (IDF/EURO) led to a jointly organized meeting, with the participation of representatives of government health departments, health care professionals, people with diabetes and diabetic patients' organizations in St Vincent, Italy in 1989, which produced the St Vincent Declaration on diabetes care and research in Europe (21).

The St Vincent Declaration contains general goals for the improvement of the quality of life for people with diabetes and a series of clearly defined, quantified targets that include the reduction of diabetic complications: blindness, end-stage renal failure, amputation, coronary heart disease and stroke, and perinatal mortality and congenital abnormalities. WHO and IDF have established an action

programme for the achievement of these goals. The action programme is expected to improve the management of diabetes medical services and the diabetic patients (21).

Action programme and information system

Action programmes have been developed for the international, national and regional levels and for institutions and professionals, and recommendations for the appropriate use of information systems have been drafted (25,26).

Working groups, composed of experts in the fields covered in the Declaration, created guidelines explaining the methods and approaches to use in achieving each of the goals. When adapted to local conditions, the guidelines are tools that can be used by health authorities at all levels, health care providers, patient organizations and patients (21). Simple and objective indicators have been defined, and a minimum data set for monitoring the health status of people with diabetes has been recommended for use by health care professionals. These data are also necessary for the evaluation of improvements in health care status as a result of the action programme.

Prototype software, such as DIABCARE, and a punch card system have been developed to collect the essential information required to measure and compare the outcome of care. A central DIABCARE database has been established in Munich, and is planned to become a Region-wide system that can give up-to-date information on a country's progress towards the targets and the status of its national programme on diabetes. In 1992, the DIABCARE database in Munich collected baseline data on more than 4500 patients from 45 centres in 17 countries by using the DIABCARE basic information sheet or software (27).

Based on data collection at the local level, the outcome of the implementation of the St Vincent Declaration will be monitored with the help of the liaison people at the national level of each country. At the end of each year these people are asked to report on progress and results to the Steering Committee of the Action Programme. The results are disseminated through reports and newsletters (28). This permits clinicians, professionals and health care managers around the Region to identify and learn from the experience of the people who achieve the best results for each of the targets of the St Vincent Declaration.

Progress

Action has been taken in many countries, regions or centres (28). A resolution (EUR/RC41/R3) on the prevention and control of diabetes mellitus was endorsed by the forty-first session of the WHO Regional Committee for Europe in September 1991. Several European countries are including it in their national health policies.

In January 1992, the Regional Office established a special programme for diabetes mellitus within the framework of the QCT programme and integrated with the secretariat of the St Vincent Declaration action programme. In addition, the Regional Office is establishing collaborating centres in countries to support the various action groups established to address each of the goals of the Declaration. Further, the European organizations of physicians and pharmacists, representing 33 countries, committed themselves to the action programme. National programmes for the implementation of the St Vincent Declaration are being initiated outside the Region with the help of European experts who have demonstrated their ability to achieve the goals of the Declaration in their own centres. At a meeting held in Budapest in March 1992, countries' initial activities were discussed; the results from Albania, Moscow and Norway were particularly impressive (29-31).

Further, the process of comparing standardized aggregate data from various diabetes management centres has raised awareness of the concept of quality development and given rise to the motivation required to improve the quality of individual care providers and health authorities. The centres at the low end of the quality scale are particularly eager to learn the mechanisms for high-quality care and the centres at the high end are equally eager to share their experience. The successful use of the CQD model for the management of diabetes mellitus has demonstrated the feasibility of this approach.

A Quality Development Project for Oral Health Care

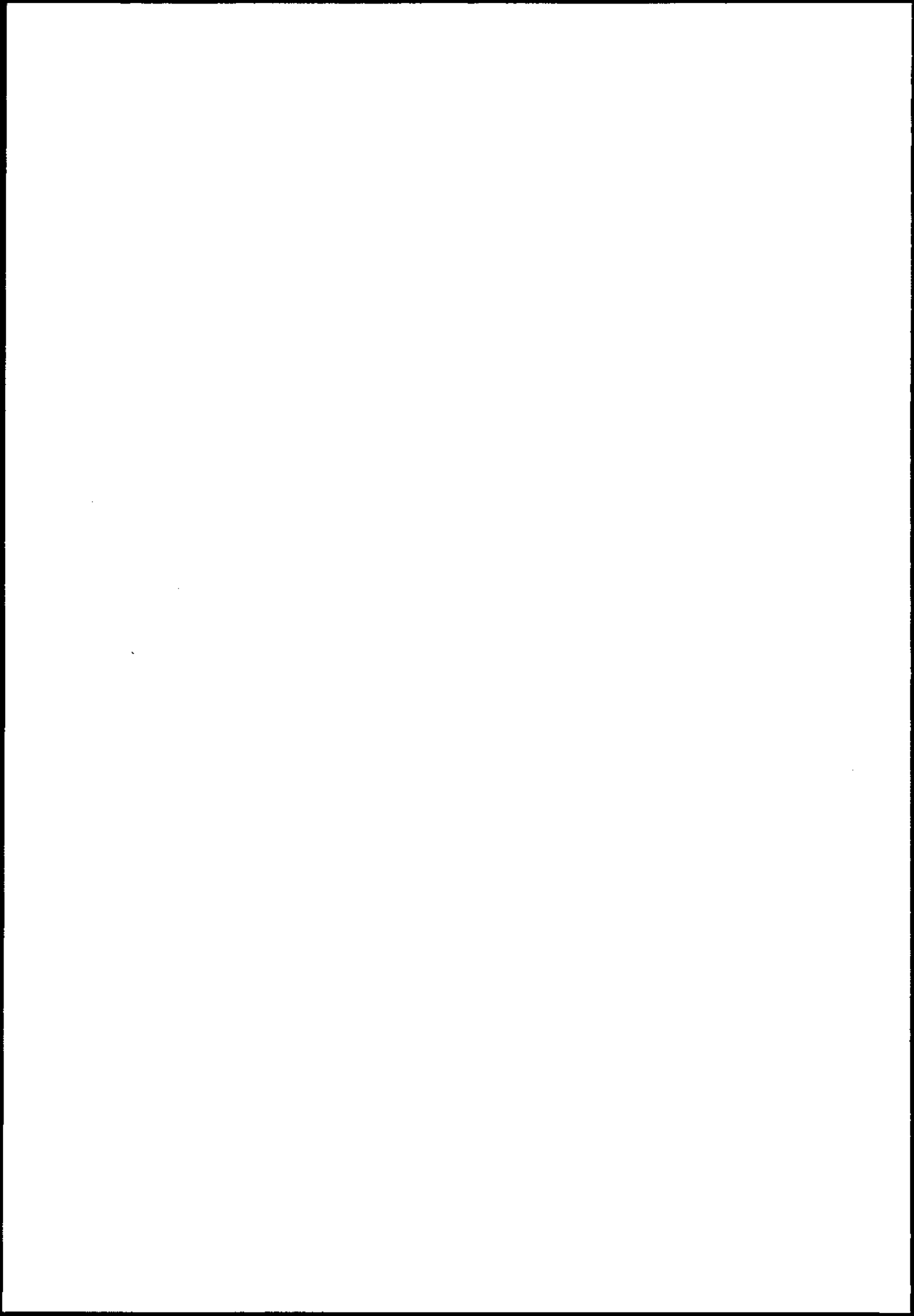
The goal of the ORATEL project is better quality in oral health care. The results from the widespread use of the ORATEL computerized information system should be:

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- lowering the incidence of oral diseases in the Region
 - ensuring higher standards of public and private oral health care
 - ensuring the cost-effectiveness of public and private oral health care
 - promoting equity in oral health care
 - stimulating awareness in care providers of quality in oral health care.

The objective of the ORATEL project is to develop computerized information systems as a quality development tool in oral health care. The project stresses self-assessment at the clinical level, not external control, with a view to the comparison of outcomes. Other important aims are to promote a commonly acceptable standard of oral health care in the Region, and to create consensus for basic minimum data sets and quality indicators that could form a basis for measuring the quality of oral health care at various levels.

Software will be developed as a quality assurance tool. This will include software for monitoring, reporting and evaluating, to be used (anonymously) by individual oral health care professionals. Data will be stored in a database at the local level for individual evaluation and later transmitted to a common database for long-term evaluation. Software will also be developed to support quality assurance in dental units. It will allow the integration of educational programmes and decision support in diagnosis, treatment planning and performance.

The development of the ORATEL system will ensure that its quality assurance elements can be integrated into existing oral health care systems. The software will be tested at clinics differing in technological levels and the age groups of the patients. The ORATEL system is expected to be ready for use in the beginning of 1995 (32,33).

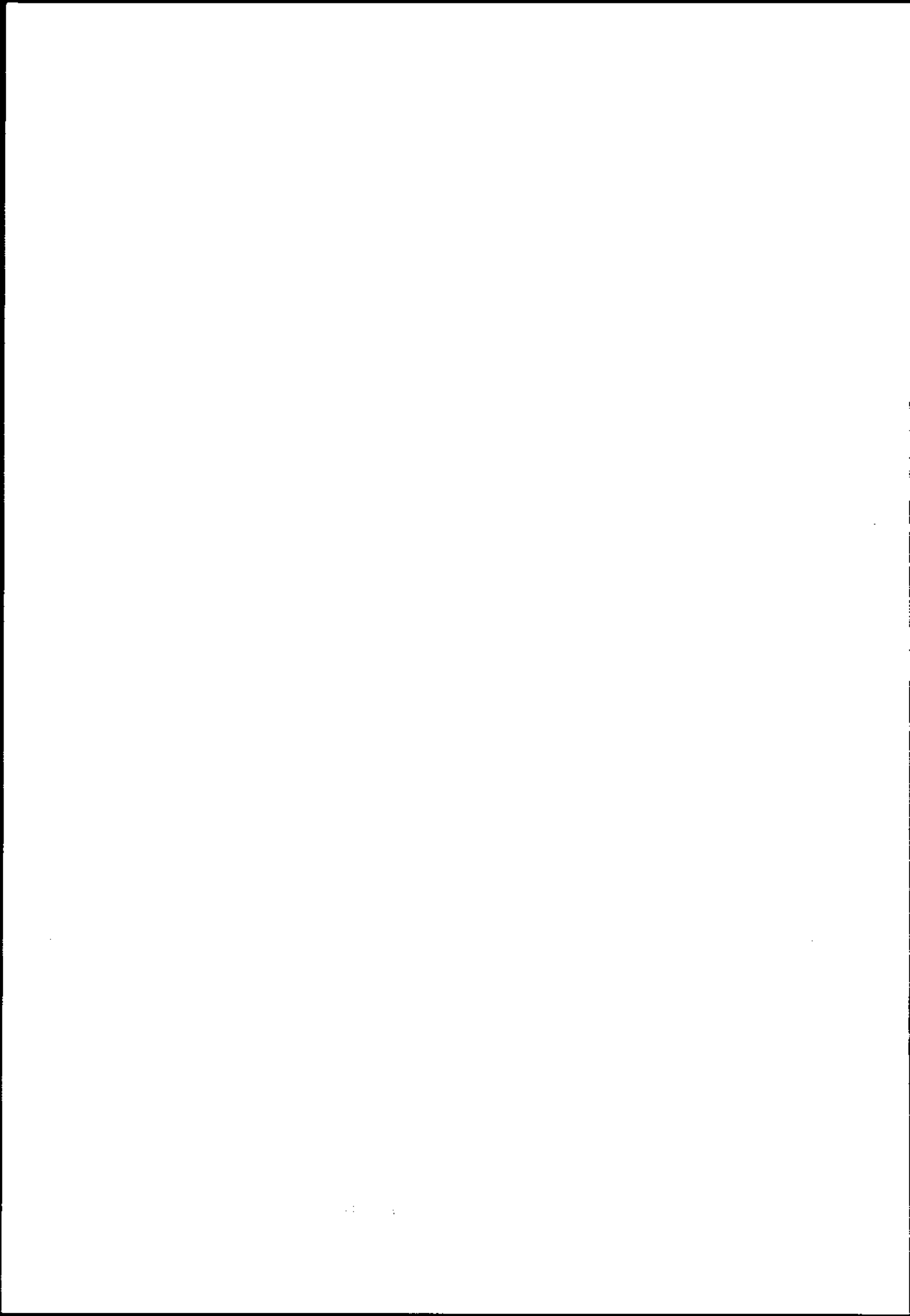


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