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Strandberg, Eva-Lena

2008

Link to publication

*Citation for published version (APA):*
Strandberg, E.-L. (2008). *Developing General Practice: The Role of the APO method*. [Doctoral Thesis (compilation), Family Medicine and Community Medicine]. Department of Clinical Sciences, Lund University.

*Total number of authors:*
1

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# Developing General Practice: The Role of the APO Method

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# Developing General Practice: The Role of the APO Method

*Eva Lena Strandberg*

Akademisk avhandling som med vederbörligt tillstånd av
Medicinska Fakulteten vid Lunds Universitet för avläggande av doktorsexamen
i medicinsk vetenskap kommer att offentligen försvaras i CRC:s Aula,
Universitetssjukhuset MAS, ingång 72 onsdagen den 29 oktober 2008, kl 13.15

Fakultetsopponent:
Professor Niels Bentzen
Avdelningen för Almen Medicin, Köpenhamns Universitet

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Faculty of Medicine

Department of Clinical Sciences, Malmö
General Practice/Family Medicine
Malmö University Hospital
Sweden, 2008

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Lund University, Faculty of Medicine Doctoral Dissertation Series 2008:80
ISBN 978-91-86059-33-0
ISSN 1652-8220

Layout: Gunilla Persson, Media-Tryck
Printed by Media-Tryck
Lund 2008

*To Mårten,*
*Max and Niklas*

## VAD ÄR SANNING?

Då frågade Pilatus: ”Vad är sanning?”
och eko svarade – profeten teg.
Med gåtans lösning bakom slutna läppar
till underjorden Nazarenen steg.

Men gudskelov, att professorer finnas,
för vilka sanningen är ganska klar!
De äro legio, ty de äro månge,
som skänkt den tvivelsamme romarn svar.

Dock syns mig sällsamt, att det enda sanna
så underbart kan byta form och färg.
Det, som är sanning i Berlin och Jena,
är bara dåligt skämt i Heidelberg.

Det är, som hörde jag prins Hamlet gäcka
Polonius med molnens gyckelspel:
”Mig tycks det likna si så där en vessla
– det ser mig ut att vara en kamel!”

*Gustaf Fröding, 1891*

*Organization*
LUND UNIVERSITY
Department of Clinical Sciences, Malmö
General Practice/Family Medicine

*Document name*
DOCTORAL DISSERTATION

*Date of issue* October 29 2008

*Author(s)*
Eva Lena Strandberg

Sponsoring organization

*Title and subtitle*

**Developing General Practice: The Role of the APO Method**

*Abstract*

General practice is a broad and multifaceted field of knowledge. Political steering instruments declare that general practice and primary care are characterized by a holistic perspective on the individual, with quality, accessibility, continuity, and cooperation being important factors. For the last few decades, quality assurance has been in focus in Swedish health care. Inspiration has come from other countries and from other spheres, such as the manufacturing industry.

The dissertation is a case study of the APO method, which is a way of working with the general practitioner's continuous learning and quality assurance. The aim was to explore the role of the method in general practitioners' professional development and quality development. Subsidiary aims were: to examine perceptions of a holistic view; to obtain a deeper understanding of the meaning of general practitioners' work with quality; to investigate how the actual registration phase in an APO audit affects general practitioners; and to develop the APO instrument to measure softer data.

We found that a holistic view pervades the clinical work of general practitioners. A holistic view means being able to offer biomedical and psychosocial knowledge and draw on the patient's experiences. The field of knowledge is under constant development and its practitioners must also develop. General practitioners have an understanding of society's demand for good and safe health care for everyone, but they make a clear distinction between demands coming from outside (top-down), and obligations from within the profession (bottom-up). Top-down demands are felt to encroach on professional autonomy, and the methods offered are rarely adapted to primary care. Instead the doctors follow up their work with methods developed by the profession. Such methods include documenting one's own actions, with elements of collegial discussions, such as the APO method, which was devised to measure quantifiable data supplemented with qualitative attributes. The APO method functions in this way when it comes to hard data. We compared audit participants with non-participants in an audit about drug prescriptions. The participants prescribed antibiotics to a lesser extent than the non-participants right from the start. Both groups reduced their prescribing in the initial phases of the audit process. In the pilot audit about a holistic view and knowledge, we studied the possibility of using the audit method for soft variables as well. The audit protocol was supplemented with VAS scales to give greater depth. The results show that the variables and scales worked.

This dissertation shows that the APO method can have a role to play in the development of the field of general practice, both in clearly biomedical spheres and in more general aspects of the work. It is problematic to achieve systematism in work with quality since there is such a strong opposition between the need for professional autonomy and the methods offered. The APO method satisfies the profession's need for self-determination and reflection, above all through collegial comparison and discussion.

*Key words:*
General Practice, Quality development, APO Method

Classification system and /or index terms (if any):

| | | |
|---|---|---|
| Supplementary bibliographical information | | Language English |
| ISSN and key title 1652-8220 | | ISBN 978-91-86059-33-0 |
| Recipient's notes | Number of pages: 134 | Price |
| | Security classification | |

Distribution by: Eva Lena Strandberg, Dept. of Clinical Sciences, Malmö, Sweden

I, the undersigned, being the owner of the copyright of the abstract of the above-mentioned dissertation, hereby grant to all reference sources permission to publish and disseminate the abstract of the above-mentioned dissertation.

Signature _____ Date September 17 2008

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# Preface

My starting point is that I am a qualified social worker with an orientation to administration. Since autumn 1993 I have worked with various assessment and development projects at the Blekinge R&D Unit. In spring 1995 I was recruited as leader of a primary care project by an enthusiastic general practitioner and R&D supervisor, Ingvar Ovhed. The project involved introducing and establishing a Danish method for quality development. At that time I had 20 years' professional experience behind me, mostly in administrative posts with various county councils. Around 1990, one of my tasks was to lead the work with my county council's first quality policy. I realized quite soon that there was no real difference between what in my administrative world went under the names activity development and staff development and what is called quality development. All work in health care stands and falls with the staff. If the staff does not develop, then the activities do not develop either. When the R&D Unit and Ingvar Ovhed gave me the possibility to approach this development from a different direction, more from within, it was an easy choice to leave my administrative career and tackle the assignment.

During the project period with the introduction of the Danish audit method, I often asked myself how one could know that it really was a good method. Questions arose: does this method affect and change the behaviour of general practitioners? If it does so, what is it about the method that works? Ingvar thought that I should do research on this, and he got me interested in starting research training.

# List of publications

This dissertation is based on the following publications, which will be referred to by their Roman numerals.

I. Strandberg EL, Ovhed I, Borgquist L, Wilhelmsson S. The perceived meaning of a (w)holistic view among general practitioners and district nurses in Swedish primary care: a qualitative study. *BMC Family Practice 2007, 8: 8*.

II. Strandberg EL, Ovhed I, Håkansson A, Troein M. The meaning of quality work from the general practitioner's perspective: an interview study. *BMC Family Practice 2006, 7: 60.*

III. Strandberg EL, Ovhed I, Troein M, Håkansson A. Influence of self-registration on audit participants and their non-participating colleagues. *Scand J Prim Health Care, 2005; 23: 42–6.*

IV. Strandberg EL, Ovhed I, Håkansson A, Troein M. Can a holistic view be measured? A pilot study of the use of audit in general practitioners' decision making. *In manuscript.*

*Paper III reprinted by permission of Taylor & Francis Group.*

# Abbreviations

| | |
|---|---|
| APL | Audit Project Luleå |
| APO | Audit Project Odense |
| APS | Audit Project South |
| CI | Confidence Interval |
| CME | Continuing Medical Education |
| CPD | Continuing Professional Development |
| DN | District Nurse |
| EBM | Evidence-Based Medicine |
| EBP | Evidence-Based Practice |
| FP | Family Physician |
| GP | General Practitioner |
| HAPPY AUDIT | Health Alliance for Prudent Prescribing, Yield And Use of antimicrobial Drugs In the Treatment of respiratory tract infections |
| PAA | Practice Activity Analysis |
| PcV | Penicillin V |
| PDSA | Plan Do Study Act |
| R&D | Research and Development |
| RR | Relative Risk |
| RTIs | Respiratory Tract Infections |
| SBU | Swedish Council on Technology Assessment in Health Care |
| TQM | Total Quality Management |
| VAS | Visual Analogue Scale |
| WMA | World Medical Association |

# Background

This dissertation is a study of a professional group and its way of handling parts of the day-to-day work. It may be said that the whole dissertation is a participant observation study in a setting that was unaccustomed for me, namely, medical culture.

The dissertation has come about because I wanted to understand how general practitioners (GPs) think and reason about the development of knowledge. The concept of development of knowledge includes here important spheres such as professionalism, continuous learning, change of behaviour, and work with quality.

Since the end of the 1980s and throughout the 1990s, quality assurance has been in special focus in the Swedish health service. The concept came from abroad and was tested in different settings and contexts. Influential models were found in the Anglo-Saxon world. The world of business also served as a model for different follow-up systems [Spri 1987, Spri 1990, Spri 1992, Spri 1996]. The drive for quality development took place in parallel among the professionals and in the different management organizations of the health service. A distinction was normally made between quality assessment and quality development [Berwick 1989, Øvretveit 1992]. The different perspectives represented different methods.

I have taken an interest in general practice and not, for example, surgery or orthopaedics, because the field of general practice is so multifaceted and thus so challenging. It is a broad and complex field of knowledge where many different questions are expected to find a solution [Starfield 1998]. General practice (family medicine) lies close to the individual human being. It is what we consult when we do not feel well and we ourselves do not know which action is best to take. The demands made of the general practitioner, despite the designation, are very great. Swedish political steering instruments state that general practice and primary care work from a holistic perspective on the individual, and important factors in the holistic perspective are quality, accessibility, continuity, and cooperation [Socialdepartementet 1984, Socialstyrelsen 1976, Socialstyrelsen 1996].

## Blekinge R&D Unit

Blekinge R&D Unit for social services and primary care was created in 1988 during a period of intensive development, as a stage in the work of bridging the interface between different principals [Blekinge FoU-enhet 1997]. A major task for the unit was to be a meeting place between primary care and social services, between theory and practice, between research and development, and between different professionals in primary

care and the social services. The actual idea behind the concept was chiefly to stimulate development, but also research through supervision in individual projects, to provide some training, to teach assessment to physicians, and to provide different methods for development. The research findings were used as guidance in this development work. The competence required of the employees was that they should, if possible, have taken a doctorate. The unit consisted of a few employees with large, constantly growing networks. During the years, close collaboration was developed with the universities in Lund and Växjö and with Blekinge Institute of Technology.

The unit was administered by the county council and had its own political board, composed of both county councillors and municipal politicians. The chief task of the board was to indicate the direction of the work. The board of the R&D Unit decided in the 1990s to give special stimulus to quality development projects in both primary care and the social services. In 2007 the Blekinge R&D Unit was closed and some of the operations were transferred to the Blekinge County Council Competence Centre.

## Audit Project South

The Danish APO method (Audit Project Odense) was introduced to Sweden at the start of the 1990s, first in Norrbotten and slightly later in southern Sweden. A project named Audit Project South (APS) was started by the management of primary care in the southern health care region in October 1994. The aim was to introduce and establish the APO method among all professional categories in primary care, not just general practitioners. The project was placed in the Blekinge R&D Unit but was financed by the National Board of Health and Welfare, which had special funds to allocate to projects with quality development profiles.

During the project period (1995–1998) a great many projects were run with nurses, physiotherapists, occupational therapists, midwives, assistant nurses, and naturally with general practitioners. Examples of topics that have been audited according to the APO method in the southern region are blood pressure measurement by the district nurse (DN), telephone advice by the reception nurse, treatment by the physiotherapist, prescription of hand orthoses by the occupational therapist, pregnant women's encounters with maternity care, nursing of people with incontinence problems, GPs' diagnosis and treatment of respiratory tract infections, GPs' referrals to hospital, and treatment of patients with diabetes.

In recent years the method has been introduced in the Baltic countries and Russia through several of the Eastern Europe network projects that have been started in order to develop western-inspired primary care in the former Soviet countries.

## Nordic audit network

The Nordic audit network is an informal network which meets regularly at least once a year for method development and cooperation [Munck et al. 1998, Hansen et al. 2002]. The APO method is free to use but has specific characteristics [Bentzen 1993], which the network has regarded as its task to try to preserve and develop. The network has existed in its present form since 1994, with its centre in Odense, and consists above all of general practitioners from Denmark, Sweden, Norway, Iceland, and Finland. Each country has its own model for how the work is organized. The network has recently been expanded with audit groups in the Baltic countries, Russia, and Spain.

From the beginning there were three units in Sweden: the Centre for General Practice in Helsingborg and the Blekinge R&D Unit (which were amalgamated to form the APS project which had its base in Karlshamn), and in northern Sweden the Audit Project Luleå (APL). In 2002 the Institute of Family Medicine was founded, with the task of developing and disseminating knowledge in primary care. The Institute tried to launch the APO instrument on a large scale in Swedish primary care by creating a web-based audit model and collaborated with APL and APS, both on the design of different web audits and for process support in the different projects. The Institute of Family Medicine was closed at the end of 2006, and their web audit ended with it. Instead general practitioners from Stockholm County Council have shown great interest in the method, and since 2007 they have belonged to the Nordic audit network.

The APO operations in Odense have a well-developed organization for planning and implementing audits and for analysing and compiling audit results. In Denmark there is also a national network of local audit facilitators whose task is to support and stimulate local audit activities.

Iceland has never constituted an independent audit centre; it falls back on the APO activities in Odense. In Norway it is chiefly the General Practice Research Unit at the University of Trondheim that, together with the Norwegian Association of General Practice and some interested general practitioners, have carried out various audit projects among doctors in Trondheim. General practitioners from both Iceland and Norway belong to the audit network. Audit activities in Finland are partly linked to a company called Conmedic. There are several general practitioners working with that company, some of whom are part of the Nordic audit network. In Finland there is a well-developed organization with a large national network. All auditing in Finland takes place on the web, and the choice of what to audit is connected with the launch and follow-up of national guidelines.

In recent years the Danish APO has formed a closer attachment to the General Practice Research Unit at the University of Southern Denmark. The Department of Clinical Sciences in Malmö at Lund University joined the network in 2007 in connection with HAPPY AUDIT, an EU-financed research project about the use of antibiotics, which involves, among others, APO, the University of Southern Denmark, and Lund University.

# Audit and the APO method

## Audit

Audit is the designation for various methods in health care for quality development proceeding from the needs of the profession. The word is often prefixed with 'medical', 'clinical', or 'nursing' in order to emphasize who is responsible for the process and to distinguish it from external audits [Sheldon 1982, Øvretveit 1992, Malby 1995, Baker et al. 1998]. Sheldon in particular describes two types of medical audit and draws a clear dividing line between external and internal audit. Internal audit is performed by the individual doctor, preferably together with colleagues. In an internal audit the aim is that those who audit their own clinical work proceed from the question, 'are we doing the right thing in the right way?' [Benjamin 2008].

The model for the APO method arose among general practitioners in Britain and was further developed in Denmark by a group of general practitioners connected to the University in Odense. The British model is called Practice Activity Analysis (PAA) [Sheldon 1982, Crombie & Fleming 1988, Bentzen 1993, Beyer et al. 2003,]. APO audit is a method for self-scrutiny, meaning that members of a profession assess their own work in terms of a topic that they select themselves, using quality indicators defined by the profession [Sheldon 1979, Sheldon 1982, Bentzen 1993]. The method, however, gives no instructions as to what is to be scrutinized and assessed. It states only how the scrutiny and assessment should be organized, i.e., as a quality cycle (Figure 1).

An APO audit is built up according to Donabedian's analytical model of structure-process-outcome [Donabedian 1966, Donabedian 1968]. According to Bentzen [1993], there is a high probability that the clinical outcome will be positively influenced if an audit is performed on problems to do with various processes in general practice. An audit cycle is a process with a target discussion, initial data collection, follow-up with discussion about the target, problem definition, action plan with intervention, and a concluding repeat data collection for comparison, individually and in groups [Crombie

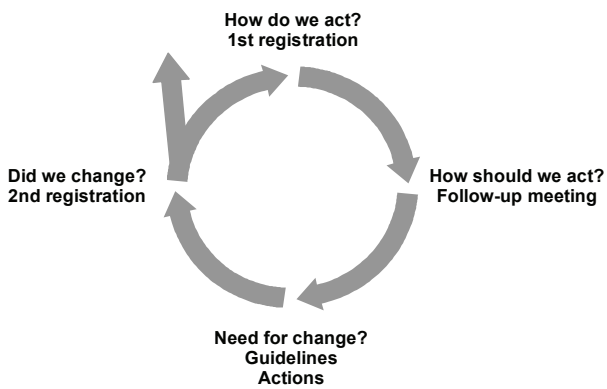


*Figure 1. The Audit Cycle.*

et al. 1993, Baker et al. 1998, Baker et al. 1999, Benjamin 2008]. The specific feature of an APO audit is that it is always the general practitioner him/herself who collects the data and this is done prospectively and consecutively during a predetermined period.

Baker et al. [1998] stress that, if measurement of performance through an audit is to be meaningful, explicit goals in the form of criteria for good practice and standards must be formulated. This is best done by agreement in peer review groups. The audit method can thus be said to be criterion-based [Marchevsky 2000]. The criteria for an audit should be clinically relevant, easy to define, and moreover capable of being measured. This means that, in an APO audit one cannot focus on the outcome of clinical treatment in the form of, say, reduced death rates or increased health. In an APO audit it is the doctor and his/her actions that are primarily in focus, not the patient. A basic principle is that if the doctor does the right thing, it is also good for the patient.

The subject for an audit according to the APO method should moreover be evidence-based in order to start a scientific discussion among colleagues with the audit data as a starting point. Baker et al. [1998] speak about 'must do', 'should do', and 'could do' in general practice. The subject of an audit must be measurable and important. Baker et al. argue that 'could do' should be excluded from audit processes, that is to say, subjects where it is uncertain what is best practice. Audit is thus about a scrutiny of clinical action in relation to science and/or tried and tested experience, but also in relation to the patient one is dealing with, wholly in line with the concept of evidence-based medicine [Centre for Evidence-based Medicine 2006].

Setting standards, or the degree of goal fulfilment if you like, is an important but difficult ingredient in an audit [Lawrence & Olesen 1997]. It is necessary first to define and identify indicators for good care. Criteria and standards can then arise from these and be developed. An indicator can be defined as follows:

> A measurable element of practice performance for which there is evidence or consensus that it can be used to assess the quality, and hence change the quality, of care provided.

The main purpose of an audit, however, is to stimulate discussion, to direct the spotlight on the problem, and motivate people to change [Crombie et al. 1993]. Standards should be realistic rather than idealistic and should be achievable. The way this normally happens is that a group of interested colleagues form a project group to handle a perceived quality problem. The process includes searching for the best available evidence in the field and from it identifying areas that can be improved for the individual doctor and the group.

The APO method is now established as a tool for quality development in the Nordic countries, both among general practitioners and among several other professional categories in primary care [Munck et al. 1998, Hansen et al. 2002, Munck et al. 2003]. An APO audit should contain variables that are both quantitative and qualitative in character. The method is unique by virtue of its prospective, consecutive character which enables fuller information about the encounter with the patient. The doctor, for

example, can note, during or immediately after the patient's visit, circumstances that affected the choice of diagnosis and treatment. If such data on diagnosis and treatment are collected retrospectively, it is no more than tally marks. The audit method is suitable to use when working alone in contacts with the patients and when it is therefore unusual to get feedback from colleagues. With this method an individual staff member has a simple and practical way to see himself and his own work in a larger context. The APO tool is used above all to measure the clinical management of common problems. At the Blekinge R&D Unit work began at an early stage to develop the APO method and study the potential and limitations of the method for developing primary care.

## The audit process

**The first step: defining the problem area.** A group of professionals, for example, general practitioners, choose an important problem which they perceive as occurring often in their everyday clinical practice. A common subject for general practitioners has been the diagnosis and treatment of respiratory tract infections. The group uses a simple protocol with room for 30–40 variables (Figure 2). The tilted cells in the protocol denote different procedures. Each patient is assigned one row, in which the participant checks each procedure performed. Together the group, or representatives of the group if there is a large number of interested people, formulate the targets and content of the variables, that is, what is to be measured. The division of the subject into different variables primarily reflects what the doctor does with the patient and the circumstances that have affected the doctor's actions and medical decision making. The activity of deciding on the variables usually requires four to five meetings. This includes testing the variables. This is done in a pilot audit, which means that some colleagues try out the protocol for a short time. After final adjustment comes an individual data collection period.

**The second step: data collection through a registration**. The length of the collection period depends on the frequency of what is to be measured: the higher the frequency, the shorter the collection period. A common registration period is between 15 and 20 working days. It should be easy to collect data and it should not be perceived as taking too much time. Participation in an APO audit is voluntary. An individual takes part after having made a personal, active choice. The group of participants should preferably not be less than ten to twelve persons; there is not really any upper limit.

**The third step: processing and analysis.** The participants' collected data are processed and analysed individually and in groups in strictly confidential forms, which is exceedingly important for honest and serious completion of the audit protocol. If the material is sufficiently large, processing and analysis are done with the aid of various computer programs. If the number of participants and the captured data are very large, the results can also be calculated for significance to generate statistical conclusions for the whole group concerning differences between one measure and another.

**The fourth step: comparison and action.** After data collection and processing, the individual compares him/herself with the whole group. Comparison and analysis proceed entirely from collected data and initially established targets and quality criteria. The result of the registration is analysed and discussed in locally adapted activities where professional discussions are central if a process of change is to take place. In the follow-up

## Clinical audit on Respiratory Tract Infections diseases

Id-number

---------------

Date

| Age | Gender | | Consult type | | Consult form | | Focus of infection | | | | | | | Diagnostic procedure | | | | | Genesis estimated | | | Prescribed antibiotics | | | | Choise of antibiotics | | | | | | | | Certif Sick leave | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | First visit | Repeated | Personal consultation | Others - tel etc | Ears | Tonsillitis | Pharynx - larynx | Sinus | Bronchitis | Lungs | Diffuse local/non spec | No laboratory test | Strep A - pos | Strep A - neg | CRP | Other tests | Viral genesis | Bacterial genesis | Mycoplasma etc | No antibiotic treatment | AB treatment initiated | AB treatment continued | AB treatment changed | No antibiotic | Penicillin V | Ampi-/amoxicillin | Macrolides | Tetracyclines | Cephalosporines | Chinolones | Other antibiotics | Certificate given | Certificate not given | |
| | M | W | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | |
| Patient 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Patient 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Patient 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| etc | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of checks per group | Only one check | | Only one check | | Only one check | | Only one check | | | | | | | More than one check allowed | | | | | Only one check | | | Only one check | | | | Only one check | | | | | | | | Only one check | | ............ Number of visits |

*Figure 2. The Audit Protocol. The tilted cells denote different procedures.Each patient is assigned one row, in which the physician checks each procedure performed.*

activities there is an element of consensus, with local guidelines as a result. Consensus is spread among concerned people through special efforts. The form of these efforts can vary depending on the subject concerned, but the intervention is important for accomplishing change.

**The fifth step: registering again.** The audit cycle ends with an important second registration phase. This is done after about a year. This second data collection is also followed by a concluding and comparative discussion. The entire process takes a total time of anything between one and three years.

## Qualitative research

According to Bogdan & Taylor [1975], qualitative research can be described as research procedures that yield descriptive data, often with a great deal of information about a few units. Crabtree & Miller [1992] talk of qualitative research and field studies as being more or less the same phenomenon. Both aim, with different methods, to collect data describing and/or explaining parts of 'the human field of activity'. It is a matter of understanding and seeing the phenomena from the inside, which in a way makes the researcher a participant. There is no specific or predetermined research design for qualitative studies. The choice of method, as in the quantitative research tradition, depends on the actual research question [Merriam 1988, Merriam 1994, Green & Britten 1998]. Qualitative studies, according to Crabtree & Miller [1992], are either case studies or topical studies. Case studies are suitable for exploring many aspects of well-demarcated units, for example, a family, a nursing home, an organization, or a group [Yin 1989]. Topical studies are suitable for examining one or a few selected areas such as the perception of pain among some selected individuals.

Ethnographic research is a method that has been developed in anthropology to study human society and culture [Merriam 1988, Geertz 1993, Merriam 1994]. Sometimes the term ethnography is used synonymously with fieldwork, case study, and qualitative research [Carlsson 1991]. According to Merriam [1994], the concept of ethnography has two distinct meanings for anthropologists; on the one hand methods and on the other hand the written compilation of the results achieved with the ethnographic methods. Common techniques in ethnographic studies for collecting data are participant observation, source analysis, unstructured interviews, diaries, and biographies [Carlsson 1991, Merriam 1994, Kvale 1997]. Ethnography involves making a sociocultural interpretation of the information collected [Geertz 1993]. What characterizes a case study is that it is particularistic, descriptive, holistic, and inductive, and geared to the understanding and description of processes [Merriam 1988, Yin 1989].

Case studies are suitable to use when one is interested in opinions and viewpoints and when one wants to come as close as possible to the subject of interest, for example, via direct observation in natural settings. Merriam [1988] writes that:

> Case study is appropriate when the objective of an evaluation is "to develop a better understanding of the dynamics of a program. When it is important to be responsive, to convey a holistic and dynamically rich account of an educational program, case study is a tailormade approach".

## General practice

General practice is a relatively young speciality in Swedish health care. It did not become a separate speciality until 1982. It was preceded by 'general practice competence'. As late as 1970 it became compulsory to have six months' residence at a health centre to be registered as a fully qualified doctor.

Starfield [1998] talks about primary care rather than general practice. The attributes that characterize primary care are first contact, longitudinality, comprehensiveness, and coordination. The population should in the first instance turn to primary care, where the general practitioner can be found. The greater the accessibility, the greater is the chance that the population will turn to the general practitioner at a primary care unit as the first contact, and in the best of worlds this leads to higher continuity with the doctor. Continuity is achieved when both the patient and the doctor feel that they have a mutual relationship. For the patient this means that there is a doctor at the health centre who serves the patient and who has the overall responsibility. A broad range of care is one of the major characteristics of primary care and hence general practice. This means that there should be resources for recognizing and coping with all common health problems among the population. A broad range of care means that the complaint can be dealt with directly by the general practitioner, by some team member, or that the patient is given a referral to other care institutions. The range of care, according to Starfield, should exist to cure and alleviate various states of ill health, to help and support people with social problems, and to work to prevent the rise of disease and ill health.

Hunskår [2003] describes primary care as the first line of health care in which the general practitioner is the first-line doctor. The general practitioner meets people with very different problems, everything from undramatic to highly complicated. The tasks comprise 'diagnosis, treatment, rehabilitation, and preventive measures'. To be able to work and function in primary care a doctor is expected to have a thorough knowledge of 'biology, diseases, the health care system, and society as a whole'. In addition, the doctor must have a broad, specific, and documented competence in family medicine. The general practitioner has many roles, everything from being the one who gives a personal, individual-centred response to being the one responsible for the whole and assessing and, when necessary, doing further sorting in 'the billion-strong resources of health care'.

The tasks of a general practitioner also of course include being aware of the significance of lifestyle and social networks and mobilizing the patient's own resources, seeing the totality [Tarrant et al. 2003]. For the general practitioner, pragmatism is also a guiding star. Sometimes it is not possible to follow professional ideals; instead it is a matter of asking oneself what is realistically feasible for the particular patient in the consulting room. The general practitioner must also be able to make a quick professional assessment of which of a patient's different wishes it is reasonable to prioritize 'here and now'.

The relation between doctor and patient is the core of general practice, according to Hunskår [2003], who emphasizes the personal encounter and the dialogue with the patient over time. Pendleton et al. [1994] point out that the consultation is the medical

profession's most central event and the consultation with a general practitioner the most common. Primary care with a listing system gives the conditions for creating the continuity that is needed for the doctor and the patient to have an opportunity to get to know each other and build up a trusting relationship. Donahue et al. [2005] argue that patients are more satisfied with the care they receive from doctors whom they have been able to meet over a long period of time and thus establish a relationship with. This applies in particular when the patient has chronic, multifaceted diseases [Guthrie & Wyke 2006].

At times, however, continuity is not so good. Continuity can lead to ingrained thinking and routine behaviour on both sides [Hunskår 2003]. There is a risk that established ideas about a patient can lead the doctor to become less observant of changes.

The core of general practice is thus the clinic, and within this the consultation is the content of the core. Important cornerstones such as expertise in community medicine, epidemiology, biology, and clinical knowledge are accompanied by elements of other fields of knowledge such as psychology, sociology, anthropology, and ethics. Helman [2003, 2006] highlights the significance of medical anthropology as a kind of broker or culture-interpreter between health professionals and their clients. The task of the general practitioner must be to apply the medical model in a scientific way, while simultaneously extending the concept of disease and ill health and developing diagnostic methods so that they correspond to all the types of patients and problems they meet in their everyday clinical reality.

## Quality development

Questions about quality and methods for measuring quality in health care have been in focus in different ways since the 1980s [Donabedian 1980, Berwick 1989, Berwick 1990, Øvretveit 1992]. A Swedish legislative regulation can be found in the Health and Medical Services Act [SFS 1982, 1996] and in the supplementary general recommendations about quality systems from the National Board of Health and Welfare [SOSFS, 2005:12 (M)]. The laws emphasize how important it is that health care should be of good quality and that the quality of the activities must be constantly developed and assured, in a systematic way. On the other hand, there are no exact instructions as to how this is to be done.

In different texts about quality we find many, sometimes synonymous concepts for work with quality. When quality in health care became a topic of debate in the health service in the 1980s, the expression *quality assurance* was commonly used to describe what it was about, that is, ensuring that the activities and services are of a high level of quality [Berwick 1989]. Quality thinking itself has developed through time. Godfrey [1986] divides this development into four overlapping phases: quality inspection, quality control, continuous quality improvement, and quality by design. In the latter phase it is a matter of creating conditions for quality through prevention and not inspection. Others believe that quality assurance and quality development are almost the same thing, but that quality development nevertheless is a better description of the dynamic process of improvement concerned. Quality assurance, on the other hand, sounds more

static, securing something that already exists [Ternow 1994]. One contribution to the definition of the concept of quality is Garvin's [1988] classification into five groups: quality that is: transcendent, product-based, value-based, manufacturing based, and user-based. Another concept in recent use is total quality, deriving from the more familiar term TQM or Total Quality Management. TQM comes originally from the car industry and Japan, where successful companies are characterized by *kaizen*, meaning that all the employees have and feel responsibility for constantly improving and developing their part of the operation in compliance with the company's goals. TQM is based on five main principles for how an organization should function: the commitment of the management, customer orientation, the use of statistics, continuous improvement, and participation by everyone [Berwick 1989, Røvik 1998].

Avedis Donabedian [1966] launched the now familiar concepts of structure, process, outcome, criteria, and standards in his fundamental document about quality assurance 'Evaluating the quality of medical care'. Based on the assembled knowledge about quality issues, he constructed an analytical model in which *structure* or 'what one has' concerns the resources in an organization, *process* what one does, and *outcome* what one achieves in the form of increased longevity, reduced pain, and patient satisfaction. *Criteria* are yardsticks used to measure the quality, and *standards* the proportion or percentage of a criterion that has to be achieved if care and nursing are to be considered of acceptable quality. Quality can then be described as an expression of the extent to which what is done agrees with established criteria and standards. Translated into health care, structure is about the number of employees, their training and competence, the equipment and its safety and durability. The process concerns what the profession does as regards clinical procedures, accessibility, continuity, patient reception, and patient participation, or what Donabedian calls 'the care itself'. Outcome concerns, for example, changes in health and well-being and the preservation of health.

Quality should be regarded from different angles; one guide to considering quality is to put oneself in the position of the patient, the professional, or the management. One can talk of the three quality dimensions of the health care system: client quality, professional quality, and management quality [Øvretveit 1992]. The perspective affects the choice of tool, for both follow-up and improvement measures. The main questions for the three perspectives can then be formulated as follows:

**Quality dimensions**

*How are the activities perceived?* – A patient perspective

*How can we develop our working methods?* – A professional perspective

*Are we using resources in the best way?* – A management perspective

Quality development is a matter of continuously measuring, assessing, analysing, and if necessary improving quality. The process consists of two main parts: *assessment* of quality and *improvement* of quality. The patient's perspective can be viewed as a relation between experiences and expectations. It is important to distinguish between technical quality

and functional quality, from both the patient perspective and the professional perspective. Technical quality is result-oriented and concerns *what* the health care does for the patient. Functional quality is process-oriented and concerns *how* the service is performed [Grönroos 1983].

The legislation makes demands of both assessment of the organization and self-assessment by individuals as regards the technical and the functional quality. Self-assessment should be broken down in the organization and comprise even the individual staff member [SFS 1982, 1996, SOSFS 2005]. To simplify somewhat, this can be called the perspective of the profession. Here it is a matter of assessing the composition and form of services with regard to the patients' needs and assessing that the right services are provided in the right way. It is also a matter of the staff's scope for action for correcting faults and how the need for in-service training is satisfied. By studying the different processes of an organization and its individuals within these areas, defects in quality can be discovered.

The principles for quality development from a professional perspective are choosing quality dimensions, formulating standards, measuring and documenting, analysing and defining problems, collecting ideas about possible causes and taking action. For this there are several available methods both external and internal [Westlund & Edvardsson 1998]. External scrutiny usually takes place as a retrospective assessment on a specific occasion and is not so suitable for quality development. Quality development builds on the commitment and participation of the people concerned. Evaluation in the form of self-assessment is better suited to this. Self-assessment in its simplest form can consist of the staff communicating experiences, often without documentation, with the consequence that this is invisible outside the group. An external assessment always results in a written report. Another aspect of external versus self-assessment concerns who is reached by the results. The results of external assessment are rarely used by those who are assessed. This problem disappears as a rule in self-assessment since the assessor and the assessee are usually the same person. The following list from the National Board of Health and Welfare [Socialstyrelsen, 1995] shows examples of tools for analysing the work from a professional perspective:

**Examples of quality tools for professionals**

*audit:* a professional group defines criteria and standards, collects relevant data, compares with set criteria and standards, introduces changes,

*benchmarking:* quality development with the aid of exemplary models,

*diary*: as a basis for joint discussions about how the work is done,

*mapping:* charting activities step by step and assessing the quality of the implementation,

*observation:* to find out about here-and-now situations,

*peer review (supervision* and *colleague assessment):* with the aid of external participation for detailed individual scrutiny with proper feedback,

*quality circles:* to define quality problems and collect ideas about possible causes.

## Evidence-based medicine

David Sackett [1996] defines evidence-based medicine as follows:

> EBM is the conscientious, explicit and judicious use of current best evidence in making clinical decisions about the care of individual patients.

Working in an evidence-based way can be summed up in five important steps, the first being to answer 'answerable questions'; the second is to try to find 'the best evidence'; the third is about 'critically appraising evidence'; step four requires 'acting on the evidence, using patient values'; and the fifth stage is 'evaluating performance of decision'.

EBM is above all a way to work and relate to the huge amount of new research that is published daily in scientific journals. Doctors do not even have time to read all the journals in their own speciality, much less in other specialities. This fact affects general practitioners to a greater extent than colleagues from other specialities. The general practice context contains most things. Studies have shown that doctors who systematically search for specific information related to a particular patient according to the five EBM steps succeed in practising evidence-based medicine [Davidoff et al. 1995, Sackett et al. 1996].

Sackett [1996] also points out that EBM is not 'cookbook medicine' but has a bottom-up perspective which must be supplemented all the time with the doctor's own observations and the individual patient's expectations and needs:

> External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision.

One aim of EBM, according to the Evidence-Based Medicine Working Group [1992], is that doctors themselves, by learning to work according to the five EBM steps, can become sufficiently skilled in independently assessing evidence and hence also in judging the credibility of different experts' opinions. Berwick [2005] says that one must broaden the view of EBM and points out that excessive faith in the science that has managed to pass through the publication filter of acknowledged scientific journals can have the consequence that important findings are missed, and aspects that can improve health care. He talks of a need for 'pragmatic science', using, for example, experience-based knowledge from those working in the field, trying to look backwards at what has happened in order to draw conclusions for the future, studying what happens with the aid of independent observers and carrying out small pilot projects in the form of PDSA cycles (Plan Do Study Act) in order to quickly obtain new knowledge in the area.

In recent years the EBM movement has been widened to include not only doctors but the whole health care team, emphasizing the importance of evidence-based practice (EBP), in order to satisfy the patient's complete care needs in an evidence-based way [Dawes et al. 2005, Bahtsevani 2008].

The Cochrane Collaboration is an international not-for-profit organization, providing up-to-date information about the effects of health care. Their vision is that healthcare decision making around the world will be informed by high-quality, timely research evidence, and that they will play a pivotal role in the production and dissemination of this evidence across all areas of health care [Cochrane Collaboration 2008].

In Sweden we have the SBU (The Swedish Council on Technology Assessment in Health Care), the task of which is to assess the methods used in health care. SBU was established by the Swedish government in 1987, and since 1992 it has been an autonomous authority for critical assessment of the methods used in health care [SBU 2008]. SBU's assessments are intended to answer the following questions within specific fields: 'What treatment is best?' 'How can one best make a diagnosis?' 'How should resources in health care be used to give the greatest possible benefit?' SBU's reports are thus important tools in the doctor's decision making.

## Professionalism

The medical profession is one of the three original professions: medicine, law, and theology. The professionalization of medicine began very early in history, in the early Middle Ages, partly connected with the growth of the universities and urban culture [Nilsson & Peterson 1998]. The word profession is closely related to the word *professor* and distantly related to the word *prophet*. Ultimately the words refer to the act of declaring something, of speaking clearly. The concept of profession was thus originally a matter of possessing knowledge which allows you to *say* how something should be done, unlike an occupation, which involves *doing* something in a particular way. Later the meanings were both specialized and amalgamated, so that *professor*, *prophet*, and *profession* have been separated and *profession* has come closer to *occupation*. In educational contexts a distinction is still made, so that a profession is something studied at university while an occupation is learned in some other way [Hellquist 1922].

A profession is characterized by having a well-defined field of knowledge resting on a scientific foundation, well-developed theory for describing the field of knowledge, ethical codes, and standardized criteria for education [Greenwood 1957]. In addition, professionals work with methods that are standardized and secured. A profession has the preferential right of interpretation within its field of knowledge. The development and preservation of knowledge are regarded as a natural part of the profession, often with a large element of idealism [Greenwood 1957, Strömberg 1997]. Professions are also characterized by being institutionalized, for example, through registered authorization or licensing [NE 1994]. A profession also has ethical rules for maintaining internal discipline. One can be excluded from the community and lose one's authorization. The medical profession has manifested its autonomy and need for self-regulation in

various ways, for example, in 1987 in a ten-point programme describing the rights and obligations from both an ethical and a professional perspective, with special emphasis on patient security and the quality of medical care [WMA – Policy 1987, rev. 2005].

The term profession is intimately connected with both professional autonomy and professional ethics [Kasher 2005]. Greenwood, who is often cited as a scholarly authority on professions, says that there above all five characteristics that a professional group possesses to a greater extent than non-professionals:

**The five characteristics of a professional group according to Greenwood**

a systematic body of theory
professional authority
sanction of the community
regulative code of ethics
a professional culture

Greenwood's theses have been confirmed in later survey studies and can therefore be said to be still relevant [Strömberg 1997]. Sociological literature uses the term professionalization to refer to processes whereby higher education, expert knowledge, monopolization in order to achieve higher social and economic status, and the development of a collective awareness play a part [Burrage et al. 1990]. Brante [1990a,b] has formulated two general definitions of profession:

> Professions are carriers of abstract expert systems, enabling them to perform acts that are perceived as valuable […] and trustworthy by clients.
>
> Professions are non-manual, full-time occupations which presuppose a long specialized and tendentiously also scholarly […] training, which imparts specific, generalizable and theoretical professional knowledge, often proven by examination.

An attempt was made above to answer the question what characterizes a profession. Kasher [2005] tries to analyse this in greater depth. He makes a distinction between a professional act and professional practice. When a doctor treats a patient, he or she performs professional acts in the professional practice. According to Kasher, *knowledge* is the basic condition. No doctor can pursue the profession merely with the aid of common sense or a general education. Specialist knowledge is needed, for example, of human anatomy and pathology, to put it simply. In addition, a certain *proficiency* or *competence* is required in the performance of the profession, and it must be systematic in the sense that the doctors must know how to solve typical and common problems that arise in their everyday clinical reality. This systematic proficiency must be built up and maintained so that doctors are equipped to solve the problems which they are confronted. This attitude also includes error management and how to handle failure. The third element that characterizes a profession is *improvement*. This is obvious, since neither knowledge nor

proficiency are static phenomena. New facts which the doctor must incorporate arise constantly, not least as a result of medical research. Old methods are improved or replaced by new and better ones. A fourth element is *understanding*. It takes a great deal of contextual understanding to be able to solve the unexpected extraordinary problems, the ones that are not obvious. A high degree of understanding increases the capability of the individuals in a profession. Understanding, from a professional and ethical perspective, therefore means finding suitable answers to why-questions. This form of understanding is of a local nature. *Ethics*, according to Kasher, is the fifth element in what characterizes a profession. Here it is a matter of understanding on a global plane. Global understanding relates to an understanding of the entire professional sphere; for instance, a doctor is expected to have a clear grasp of the whole field of medicine in which he works. He is expected to be able to express an opinion about what is the actual core of medical care. This understanding strengthens his capability. With an increased understanding one is better equipped to solve the problems in the best way and to solve new, complex problems that arise all the time. It is, quite simply, a matter of fully understanding the very essence of professional practice, having the sensitivity and skills required, and having the acknowledged proficiency. This, according to Kasher, is the very core of professional ethics.

Greenwood [1957] particularly stresses that the ethical codex of a profession is both formal and informal in character. An example of a formal code is the Hippocratic oath sworn by doctors. Informal codes are unwritten and implicit but nevertheless have the same weight as written codes. Professional ethics in general are connected to the society in which one works, and comprise ethics vis-à-vis both clients and colleagues. Most occupations have some form of self-regulation regardless of whether they are considered a profession or not, but codes for a profession like medicine are possibly more explicit, systematic, and binding, and they are definitively more altruistic and more oriented to society, with an explicit responsibility for the good of the general public.

There is also a clear difference between professional ethics and the ethics of non-professionals. According to Greenwood [1957] a doctor, for example, should adopt a neutral attitude to his patients. The doctor must receive and treat those in need, regardless of age, gender, social status, income, religion, and political opinions. As regards medical ethics towards colleagues, the ideals are cooperation, equality, and support. Members of a profession share new knowledge, for example, through professional interest associations. They do not compete for clients/patients and they support each other vis-à-vis society. Members of a profession reject actions on the part of a colleague that jeopardize their authority, and they support colleagues whose authority is threatened. Every profession works through a network of formal and informal groups. The formal ones consist of organizations through which professionals act, such as hospitals, health centres, universities, and various research centres, and the professional interest organizations. The informal structures are characterized by small clusters of colleagues in which membership is based on different kinds of similarities, such as having the same speciality within the profession, having the same religion or ethnic background, or quite simply liking each other. This helps to create a professional culture.

## From novice to expert

The Dreyfus model [Dreyfus & Dreyfus 1980] for the acquisition of skills was created and developed by the two Berkeley professors Stuart E. Dreyfus (mathematician and systems analyst) and Hubert L. Dreyfus (philosopher). The model is based on studies of chess players and civil pilots, but it has also been applied to practical nursing during a field study [Benner 1993, 2001]. The model, which is now well-established, proceeds from an assumption that a pupil acquiring and developing skills goes through five different stages: novice, advanced beginner, competent, skilled, and expert [Egidius et al. 2007]. This process reflects changes in three general aspects of qualified performance. The first aspect deals with a shift from being dependent on abstract principles to using previous practical experience. The second involves change in the pupil's perception of what the situation demands; in other words, instead of perceiving the situation as consisting of equally important parts, the pupil sees it more as a whole where only some parts are important. The third aspect means that the pupil increasingly becomes a participant practitioner [Benner 1993, 2001].

Stage one in the Dreyfus model, according to Egidius et al. [2007] and translated to a doctor's term of residence, is characterized by the doctor feeling like a novice for whom a great deal is still alien and unfamiliar. In the second stage, the doctor understands the different parts separately without having a grasp of the whole, but can manage more tasks in a routine way. In the third stage the doctor understands how everything works and sees the connections in the organization and the relations between different staff groups, and it feels natural to ask colleagues for advice. In stage four the doctor now functions smoothly and efficiently in the organization, sees the whole and can manage all the tasks that occur, and is himself asked for advice by colleagues in doubt. In the fifth stage – that of the expert – the doctor can notice likenesses and differences between similar situations, has a good general eye for connections and contexts, and besides solving all tasks and problems can also think of his own ways to handle them. The doctor now functions as an expert and is a qualified specialist, which entails the competence, for example, to supervise doctors during their training.

Long experience, however, does not automatically lead to knowledge. To create knowledge from experience requires action. Experience, or tacit knowledge, does not become knowledge until it is reinterpreted and communicated [Rolf 1995, Rolf 2006]. Practical knowledge is the opposite of theoretical knowledge and is typical of the tacit knowledge that is expressed in a practice that is systematically applied by a group [Janik 1996]. Practical knowledge cannot be rendered exactly. It is inherent in traditions, including various occupational traditions. Practical knowledge cannot be learned merely by reading instruction books. It also requires practice. Practical knowledge is created through repeated action.

Göranzon [2001] states that knowledge within an occupation consists of three parts:

familiarity, the knowledge acquired through exchange of experience with colleagues

skill, the knowledge acquired through performance

declarative knowledge, what one learns by reading

To this list one can also add 'capacity for judgement' as formulated by Pörn [1990], that is, the knowledge required to choose from among a great many alternatives the measures that are most suitable in a particular context. This kind of knowledge is often combined with ethical stances.

## Learning

Doctors' learning is a continuous process. It is a matter of bridging the gaps that exist between research findings and knowledge, and between knowledge and behaviour. Different methods, more or less tried and tested, are available. Some have been introduced from outside, others have been worked out by professionals themselves. Experiences from research show that combinations of two or more methods work best for changing doctors' professional behaviour [Oxman 1994, Davis et al. 1995]. Isolated interventions such as conferences usually have no effect at all on behaviour. Adult learning is different from the way children learn. Learning through reflection, preferably together with colleagues, gives good conditions for a professional to learn the new knowledge and also to achieve a new understanding [Schön 1991, Armson et al. 2007]. An important factor that influences learning is preparedness for change. There must also be motivation, one must understand why a change is needed and that resources need to be provided to facilitate change. Methods that have been found to work, according to Davis et al. [1995], are 'academic detailing, opinion leaders, audit with feedback and reminders'. This learning entails assessing professional performance. Several studies show that methods with only self-assessment have limited potential. The processes need to be supplemented with external assessment [Davis et al. 2006]. A total concept for continuous learning with personally adapted 'learning portfolios', 'practice-based learning', and detailed improvement activities is a good precondition for change [Epstein & Hundert 2002, Davis et al. 2006].

According to Ellström [1996], a distinction is made between cognitive learning and contextual learning. The cognitive perspective concerns the intellectual processes that are presumed to take place within the individual, and contextual learning is what takes place in individuals' day-to-day activities and different social contexts. In the latter case, learning is regarded as a social process. Through this process one acquires or develops one's capacities as an integrated part of the development of an occupational role or profession. This outlook focuses on the learning and the individual as part of a work community. There is a mutual dependence between the individual's learning and development and the form and development of the activities. The cognitive perspective stresses formal tuition and verbal instruction. Another way to put this is that experience-based learning belongs in the contextual perspective and theory-based learning belongs to the cognitive perspective. These theoretical thought structures complement each other, and if one tries to place the medical profession in one of these perspectives, the conclusion must be that it is somewhere in between the cognitive perspective and the contextual perspective.

Selander [2006] talks about 'being educated for professional competence'. This should be understood as meaning that one is not completely trained just because one has undergone vocational training. Apart from the fact that one's training is never really

completed, one can say that to achieve competence in the profession requires not only education but also practical experience. In addition to this, there must be flexibility and readiness for future changes. Being a professional also entails constantly reflecting on one's profession and putting it in 'a broader context'. This broader context comprises critical thinking, the ability to communicate with professional colleagues and patients alike, and last but not least the ability to build up knowledge systematically.

Egidius [2005] refers to the American psychologist and educationist David Kolb's definition of experienced-based learning as learning in four stages:

**Experienced-based learning according to Kolb**
concrete experience
reflective observation
abstract conceptualization
active experimentation

The first stage is about discovering and the second about mediating and reflecting on what one has discovered. Those who learn in this way he calls divergers. At the interface between the second and the third stage, understanding, one becomes an assimilator, that is, someone who increases his understanding by assimilating the new material into previously acquired thought systems. The interface between understanding and the fourth stage, application, concerns testing theories, applying new knowledge, and doing things that lead to new observations, what Kolb calls being an accommodator. The concepts of accommodation and assimilation come from the Swiss psychologist Jean Piaget (1896–1980) while the concepts of divergence and convergence derive from the American psychologist of intelligence, J. P. Guilford (1897–1987).

In his book *The Reflective Practitioner* Schön [1991] writes about the necessity for reflection in action, that is, the need to reflect in order to learn and develop in a constantly ongoing process.

## APO as a method for development of knowledge

How do general practitioners think and reason about the development of knowledge? The general practitioner must have a thorough biological and clinical knowledge and a knowledge of psychology. In addition he or she needs a knowledge about the actual health care apparatus and about society as a whole. This knowledge has to be maintained, and new research findings are presented daily. Doctors' learning is therefore a continual process. There are several different methods for this process. Some have been introduced from outside, others have been developed by doctors themselves. The concept of knowledge development comprises, among other things, professionalism, continuous learning, change of behaviour, and quality development.

Since the end of the 1980s and throughout the 1990s, quality assurance has been in particular in focus in the Swedish health service. Various concepts were taken from

outside and introduced into primary care. From Denmark came the APO method, which had been developed by general practitioners for general practitioners, to assess and develop their own clinical actions and compliance with science and/or tried and tested experience.

General practice is a multifaceted field covering a broad and complex range of knowledge where many different kinds of questions are expected to find a solution. Great demands are made of the general practitioner. In general practice and primary care one works with a holistic perspective on the individual, and important factors in the holistic perspective are quality, accessibility, continuity, and cooperation.

# Aims

The general aim of this dissertation was to explore the role of the APO method in general practice, and its possibilities in the GP's professional development, including work with quality development.

The specific aims were:

- To explore the perceived meaning of a holistic view among Swedish GPs and DNs (Paper I).
- To obtain a deeper understanding of the meaning of quality work from the GP's perspective (Paper II).
- To study how the registration procedure itself in an APO audit affects GPs, and whether there is any difference between GPs who actively chose to take part in an audit and those who refrained (Paper III).
- To further develop the APO instrument for measuring soft data, exemplified by the concept of holistic view, and to test the instrument developed (Papers I, IV).

# Materials and methods

In the first study we proceed from the holistic view, which is an important aspect of general practice. In focus group interviews with GPs and DNs we have tried to capture perceptions of general practice.

In the second study we shed light on work with quality, which is a crucial part of every profession's mission. Through in-depth interviews with individual general practitioners we have tried to ascertain how they view professional development and quality development.

In the third study we test the effect of audit as a method for work with quality and knowledge development. Through a retrospective study of medical records we examined the influence of audit on prescription patterns among GPs.

The fourth study is an attempt to apply the audit method among GPs to a complex concept, namely, the holistic view. The process for constructing an audit instrument for measuring soft data is described in detail.

## (W)holistic view in general practice (Paper I)

Seven focus group interviews were performed to obtain qualitative data on 'holistic view in primary care'. Four groups comprised a total of 22 GPs (10 women, 12 men). Three groups comprised a total of 20 DNs (18 women, 2 men). The interviews took place at health centres in two different areas in the south of Sweden. The groups embraced a wide range of participants: men and women, different ages, with different lengths of time in their professions and urban as well as rural areas were represented in all groups.

A semi-structured interview guide was used. The interviews took 120 minutes each. The focus of the discussion was: 'What is a holistic view in primary care?' A voluntary participant was requested to depict an episode characterized by a holistic view. This started a free association. The role of the moderator was to see that the participants did not deviate from the research question and that all participants had the opportunity to take part in the discussion. The interviews were audio taped and transcribed verbatim by a secretary. Additional notes by an assistant were added to the text of each interview.

The analysis was accomplished by latent content analysis which started with a naive reading of all transcriptions by all authors. Units related to the same content were gathered together and subcategories were developed. To validate the categories a discussion among the four authors took place after an independent coding. The authors discussed the coding of meaning, subcategories and categories until final agreement was reached.

## The meaning of quality work (Paper II)

Fourteen GPs, seven women and seven men, were interviewed individually about their experience of quality work. We made a strategic selection of informants as regards age, gender, and form of organization so that we could expect a wide spread of experiences and perceptions. We invited doctors who had received an invitation to take part in an audit on the prescribing of psychotropic drugs.

A semi-structured interview guide was used. The interviews focused on quality work, and what it meant for the doctor. The informants were encouraged to talk freely about their personal experiences of quality work. The interviews were audio taped and transcribed verbatim. Field notes were taken in connection with each interview. The interviews took from 90 to 120 minutes each.

The collection and analysis of data were guided by a phenomenological approach in order to capture the essence of quality work from the general practitioner's perspective and to bring out its characteristics. Two of the authors analysed the transcribed interviews separately to gain an idea of the totality. The interviews were analysed in order to discern significant meaning units in aspects of quality work. The meaning units were grouped and brought together in categories. Each category was named for its main content, and then grouped according to themes. All of the authors discussed ambiguities in the analysis until consensus was reached, after which the different themes of the interviews were combined in a descriptive statement.

## Influence of self-registration (Paper III)

All 80 GPs at 14 health centres were invited to audit their use of antibiotics according to the APO method, and 45 GPs participated. At all centres there were both participants and non-participants. To review the effects of the audit process, data were collected retrospectively from the electronic patient records for two periods before the registration period, for the registration period and for two periods after the registration period. Comparisons were made over time within and between participants and non-participants.

An extract was made of all visits for RTI to the 80 GPs, using the same diagnoses as in the actual audit registration. Date of visit, name of doctor, sex and age of patient, diagnosis and diagnosis number, and any prescribed drugs were noted. Antibiotics prescriptions were divided into three groups: PcV, macrolides, and others (almost exclusively broad-spectrum antibiotics).

Data were transferred from the record system SwedeStar. Statistical processing and analysis were performed in Epi-Info. Relative risk (RR) values with Taylor series 95% confidence intervals (95% CI) were calculated. To test the material further at the level of the individual doctor, Wilcoxon's signed-rank test was used to compare the change in the two groups.

## Can a holistic view be measured? (Paper IV)

Eight of the GPs who took part in the first study (Paper I) of the concept of holistic view in primary care and two doctors from an adjacent primary care area were invited to a brainstorming based on the categories and subcategories obtained. Their task was to transform these categories into around 30 measurable variables in accordance with the APO method to be used in everyday clinical reality. An audit process according to the APO method starts with the participants trying to pin down central concepts of the topic in order to operationalize them on a form, a registration protocol. It should be easy to tick off the variables during the consultation.

Our participants were allowed to reflect freely on the possibility of condensing the categories of the previous study into measurable variables. The group met three times under the leadership of a person with long experience of constructing audit protocols. The process was observed by an independent observer.

A pilot audit was subsequently conducted in March 2007. The participants were asked to register all patients during the period, preferably at least 30 patients. The results of the audit registration were compiled in a report presenting the results of the entire group.

# Results and comments

## (W)holistic view in general practice (Paper I)

The content analysis resulted in three categories and eight subcategories (Table I).

**The first category was 'attitude'** with the subcategories 'professional attitude' and 'political/administrative attitude'. Semantically the concept of a holistic view is not applied to Swedish primary health care other than in different policies and political documents, but was said to permeate GPs' and DNs' practical work. It is more about ethical attitudes than tools and techniques, and as such it is significant for general practice.

The participants discussed the concepts 'the whole' versus 'parts of the whole'. Many thought that the whole actually is greater than the sum of all the parts. It is all about finding the patient's hidden agenda and listening to what the patient is actually saying. Biomedical attitude is not enough. There is a need for a multidimensional viewpoint including a bio-psychosocial attitude towards the patients. GPs and DNs have to deal with the gap between 'illness' and 'disease', i.e. what the patient experiences and what is the medical problem. The concept of 'holistic view' is politically heavy loaded and generally considered a rather empty phrase, seldom used by professionals for describing general practice.

**The category 'knowledge'** included the subcategories factual knowledge and tacit knowledge. All focus groups highlighted that a holistic view required knowledge including both theoretical knowledge and clinical practice. Both GPs and nurses said that they had acquired their knowledge through their specialized training and through lifelong experience.

A holistic view is not only factual knowledge but is also about feelings and social competence. Tacit knowledge expresses itself during the progress of working and was

*Table I. Categories and subcategories from the content analysis.*

| *Category* | Attitude | Knowledge | Circumstances |
|---|---|---|---|
| *Subcategory* | Professional | Factual | Motivating factor |
| | Political/dministrative | Tacit | Organization |
| | | | Sphere of activity |
| | | | Tool |

described as a metaphor of 'a floating spirit' and an essential prerequisite for primary care.

**The category 'circumstances'** consisted of four subcategories: motivating factor, organization, sphere of activity, and tools. Both inner and outer circumstances can be barriers or facilitators for the possibility of having a holistic view.

The organization of primary care affects the conditions for using a holistic view. A facilitating factor is well-defined geographic districts. Teamwork is another factor of importance for understanding the patient's whole situation. The primary care team makes it possible to elucidate the patient's situation from different professional angles. Making house calls plays a central role for most of the participants. Dividing primary care into different subcategories, for example special diabetic teams and high blood pressure surgeries, is possibly counterproductive when it comes to achieving and maintaining a holistic view. It was particularly important, and obvious, to have a holistic view in preventive work, in child health care, and in palliative care. The GPs accentuated the consultation and communication with the patients as important for achieving a holistic view.

All but one focus group brought up the fact that in primary care the possibility to act in accordance with a holistic view is a motivating factor in itself, being the core factor of general practice. Consequently the participants regarded a holistic view as permeating general practice.

## Comments

We found no uniform definition of the concept 'holistic view' in the literature. In the present study the content analysis revealed three different categories of the concept and its meaning and significance for the clinical life of Swedish GPs and DNs.

As the aim of this study was to explore the perceived meaning of a holistic view among GPs and DNs, a qualitative design was judged as relevant to gain a deeper understanding of how the professions perceived the concept in their daily work. Focus group interviewing was deemed to be a suitable data collection method. The purpose of focus group interviewing is to use group interaction to produce data. To prevent GPs or DNs from feeling uncomfortable and unable to speak freely in the group discussions, we chose to interview the doctors and nurses separately. Focus groups are valid if they are used carefully for a problem suitable for focus group inquiry, and if they follow established procedures [Stewart & Shamdasani 1990, Morgan 1992, Krueger 1994, Powell & Single 1996]. We found a latent content analysis, inspired by Berg [2004] and Graneheim & Lundman [2004], to be the most suitable method for the analysis. To validate the categories a discussion among the authors took place after an independent coding. To establish reliability the text was independently analysed by all the authors, who discussed the coding of units of meaning, subcategories, and categories until final agreement was reached. The findings were presented to all of the participants. No one raised any objections to the categories and subcategories.

To do group interviewing needs training, and the role of the moderator is to facilitate discussions between the group members. The two moderators have previously conducted group interviews and were aware of the difficulties and familiar with group processes and interviewing. The strength of the study lies in the fact that all the authors took an active part in the analysis and that the findings were brought back to the participants without any objections.

## The meaning of quality work (Paper II)

Two fundamentally different perspectives on work with quality development emerged from the statements: a pronounced top-down perspective with elements of control, and an opposite bottom-up perspective (Figure 3). All respondents made statements belonging to both perspectives. Top-down seemed alien while bottom-up was natural.

**The top-down perspective** on quality emerged as a factor that infringed upon professional freedom. In this perspective, quality work is characterized by coercive impositions, inappropriate for primary care, which generate resistance instead of involvement and participation. The methods introduced often feel like package solutions which are both alien and impractical for the activities. They are not infrequently borrowed from some other sphere than primary care, sometimes from business where the requirement of cost-effectiveness is particularly obvious, and sometimes from other fields of health care. For this reason, local control systems have been devised in some places. The imposed systems and methods measure the wrong things, give the greatest guilt feelings and the lowest participation. Several informants believed that these activities do not affect how the work is done. Despite personal resistance, there nevertheless seems to be a certain degree of acceptance for the coercive top-down quality work. The reasons stated in this case are that it ensures that society's requirement of good and fair care is satisfied.

**The bottom-up perspective** emerged from the statements as a self-evident duty and as a professional attitude to medicine, guided by the ethical principles of respect for the individual, of doing good and not doing harm. It is natural to follow up one's own clinical actions in accordance with these principles. This kind of follow-up is best done in internal processes – individually or in groups – and by designing both structures and methods according to the needs that doctors themselves feel that they have. The degree of 'ownership' is thus high. The doctor's follow-up of his/her own actions then takes place at different levels and with differing focus, at individual patient level and at patient group level. At group level it is a matter of obtaining a picture of how one acts oneself, and at individual level the aim is to ascertain how the doctor's decisions affect the individual patient. Collegial comparison in the form of comments and discussions with colleagues about individual patients was considered particularly valuable, perhaps the most valuable form of professional development. Medical audit such as the APO method and other forms of statistics are excellent for studying one's own acts in relation to those of colleagues. The focus in these contexts is not on the patient but on the doctor himself.

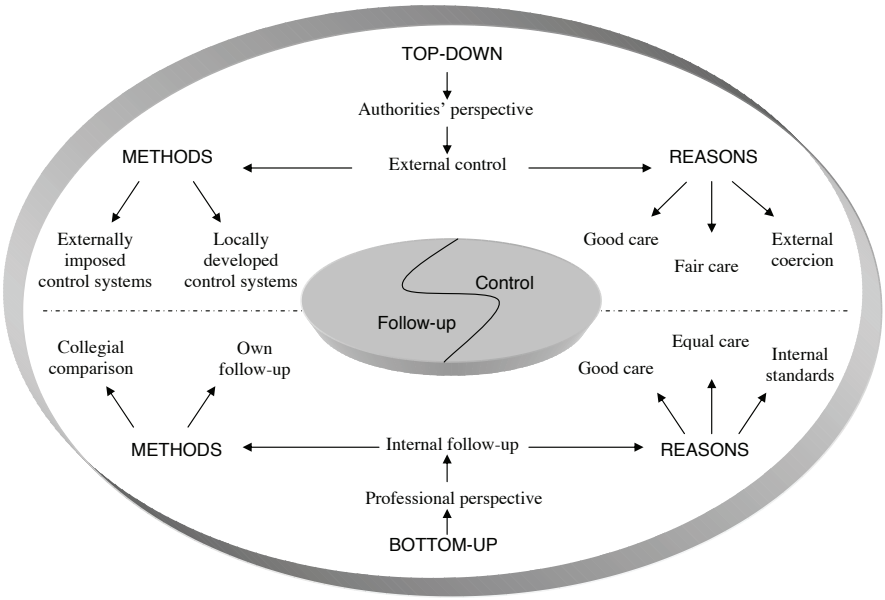


*Figure 3. General practitioners´quality work.*

Several informants felt that audit according to the APO method reveals defects and myths in one's own behaviour. The incentive for taking part in such audit projects is precisely the actual comparison with colleagues, above all in the vicinity, with colleagues both in primary care and at the hospital. This gives a sense of participation in a development process. Among those who lacked experience of this type of audit, however, there was a fear that the method could be used as a control instrument and thus belong to the top-down perspective.

## Comments

The picture that emerged from our informants' statements was unanimous. The doctors made a clear distinction between top-down and bottom-up as partly incompatible perspectives on quality work.

We chose a phenomenological approach in order to try to understand general practitioners' ideas and lived experience of quality work [Bengtsson 1988, Kvale 1997, Karlsson 1999, Sander 1999]. It might be objected that we guided the informants towards the use of audit, partly through the written invitation to the interview, partly through our semi-structured conversation guide. The audit served as a starting point for planning the study. The informants were able to speak completely freely. In the invitation we referred to the audit project about the prescribing of psychotropic drugs in which the majority had been invited to participate, but this did not affect the main findings: two opposite perspectives on quality work and the need for both the top-down and bottom-up perspectives for systematic quality work.

What our informants call quality work was regarded as an imposition, with coercion and control. The criticism expressed was that the methods introduced felt like package solutions, rarely suitable for primary care and sometimes unsuitable for health care as a whole.

Whereas the statutory requirements of systematic quality work were considered as a time-consuming imposition, the professional need to work with evidence-based medicine and to follow up one's own actions was regarded as the natural way to promote development. Our informants spoke with great involvement about different ways of following up their prescribing habits. They especially mentioned methods which support, even guarantee, their professional autonomy. The informants stressed collegial discussion in the APO audit process and in other contexts as by far the most important instrument when it comes to a professional attitude to the patient and everyday clinical work, which relates well to educational theories about principles in adult learning; effective change in health care is achieved better by focusing on concrete problems in practice; professionals are more motivated to change by internal motivation than by external pressure [Grol et al. 2005].

The question is how incompatible the perspectives actually are. It is striking that all the informants emphasized the two perspectives and that they at the same time spoke of the necessity for both top-down and bottom-up. This study contributes to an increased understanding of the complexity and variety of quality work for the doctor. The study also indicates the need to adjust methods so that the degree of ownership is as high as possible. If the statutory requirements for systematic quality work are to gain a real foothold, the general practitioners must feel that both perspectives are compatible.

## Influence of self-registration (Paper III)

This study included data from 80 GPs in Blekinge. A total of 14,719 visits for RTI were registered.

The participants reduced their prescription of antibiotics between periods A and E by eight percentage points, compared with seven percentage points for the non-participants (Table II).

In three of five periods the participants prescribed a significantly lower proportion of antibiotics than the non-participants (Figure 4). The results remained the same if locums and residents were excluded.

Of the 40 participating specialists in general practice, 23 (58%) reduced their antibiotics prescriptions (periods D+E compared with periods A+B), while 17 (42%) increased their prescriptions. Of the 19 non-participating specialists in general practice, ten (53%) reduced their prescription of antibiotics, while nine (47%) increased their prescriptions. Wilcoxon's signed-rank test was unable to demonstrate any difference between the audit participants and the non-participants ($p>0.05$).

*Table II. Percentage of visits for respiratory tract infections resulting in antibiotics prescriptions. Relative risk (RR) values with Taylor series 95% confidence intervals (95% CI).*

| Period | Percentage | | Participants vs. non-participants RR (95% CI) |
|---|---|---|---|
| | **Audit participants** (N=45) | **Audit non-participants** (N=35) | |
| A Before | 60 | 66 | 0.92 (0.87–0.97) |
| B Immediately before | 51 | 59 | 0.87 (0.82–0.92) |
| C Registration period | 52 | 54 | 0.96 (0.90–1.03) |
| D Immediately after | 53 | 56 | 0.96 (0.89–1.02) |
| E After | 52 | 59 | 0.88 (0.81–0.95) |
| Periods E vs. A | 0.86 | 0.90 | |
| RR (95% CI) | (0.80–0.92) | (0.83–0.97) | |

Only age, not gender, had any significant influence on prescribing patterns, regardless of which group they belonged to. Between periods A and E there was no significant change in the proportion of PcV and the share of broad-spectrum antibiotics for the participants. The non-participants increased the prescription of PcV and reduced the prescription of broad-spectrum antibiotics between these periods. Only during the two first periods did the participants prescribe a significantly higher proportion of PcV than the non-participants (Table III).

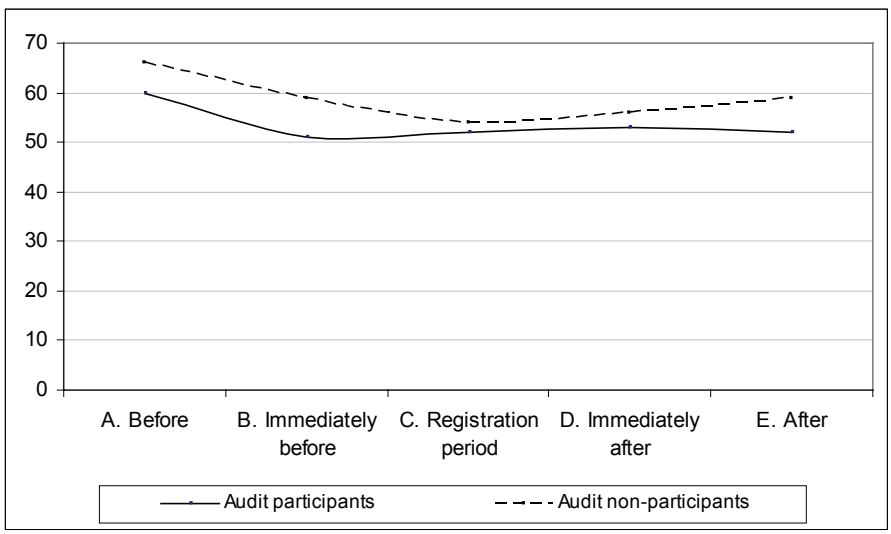


*Figure 4. Percentage of visits for respiratory tract infections resulting in prescriptions for antibiotics.*

*Table III. Percentage of prescriptions of Penicillin V of all antibiotics prescriptions. Relative risk (RR) values with Taylor series 95% confidence intervals (95% CI).*

| Period | Percentage PcV | | Participants vs. non-participants |
|---|---|---|---|
| | **Audit participants** (N=45) | **Audit non-participants** (N=35) | RR (95% CI) |
| A Before | 54 | 47 | 1.16(1.05-1.27) |
| B Immediately before | 60 | 54 | 1.11(1.03-1.20) |
| C Registration period | 61 | 56 | 1.08(1.00-1.18) |
| D Immediately after | 60 | 59 | 1.01(0.93-1.10) |
| E After | 58 | 62 | 0.94(0.85-1.04) |
| Periods E vs. A | 1.07 | 1.31 | |
| RR (95% CI) | (0.98-1.17) | (1.18-1.47) | |

## Comments

We wanted to compare physicians who actively chose to take part in an APO audit with physicians who refrained. We found that the groups differed in their behaviour right from the beginning. The behaviour of the participants was closer to what was aimed at. It is likely that those who chose to take part had a greater initial interest in the issues, and this is supported by other behavioural studies [Sibley et al. 1982].

We also wanted to follow what happened in the early stage of the audit process in the two groups. We found similar changes for participants and non-participants, with a clear decline in the proportion of patients treated with antibiotics. In both groups the majority of the physicians were specialists in general practice. Both participants and non-participants came from the same health care centres, all of them were publicly employed with access to the same kind of equipment and paraclinical tests, which excludes these as possible explanations for the change in prescribing patterns. Only age had any significant influence on prescribing patterns, regardless of which group they belonged to. Also the fact that there was a lack of a patient list and that emergency patients were randomly dispersed to all the physicians indicates that the solution is to be found elsewhere.

Since we found the same reduction in prescriptions for antibiotics among both non-participants and participants in the audit, it seems as if the actual registration did not have any effect on clinical behaviour. An alternative explanation, however, could be that the early audit process had a certain effect after all, and that the ensuing attention during the registration period affected all physicians in health centres, both the participants and their non-participating colleagues [Holden 2001]. One might assume there was a potential for a change of behaviour in this group as well and that it was triggered by their participating colleagues. Perhaps it was the case that those who knew about the audit

but were not taking part wished to demonstrate their ability to change their behaviour without the need for formal influence from outside [Holden 2001, Eccles et al. 2001, Torgerson & Roland 1998].

## Can a holistic view be measured? (Paper IV)

**The audit protocol emerges.** The *first meeting* began with a run-through of the findings from the interview study about the concept of holistic view. The participants were allowed to express themselves freely about this and how it could be measured. Each person stated their opinion of the different categories and subcategories and how their presence in the consultation could be captured during the visit and in accordance with the APO method. It was clear at an early stage that the audit would concern the concept of knowledge.

The group also discussed the need for more detailed information about the patient. The participants felt that an APO audit alone, with its variables, was too blunt an instrument to capture the presence of a holistic view in the decision making, and the group therefore discussed different possible ways to achieve greater knowledge about the individual patient consultation. The group agreed to use three ten-grade VAS-scales in order to try to capture more detailed information:

1. Familiarity with the patient (totally unknown =1, very well known =10)
2. Symptomatology (simple, problem-free =1, polysymptomatology =10)
3. Agreement/Discrepancy concerning the patient's stated reason for the consultation (full agreement =1, serious discrepancy =10)

All three scales were regarded as important cornerstones in the practical application of the concept of holistic view. The group chose to call the third scale *discrepancy – reason for consultation*. It was envisaged as a way for the doctor to try to capture the very core of holistic thinking, i.e. that a good holistic view can help the doctor, through the consultation technique, to get behind the façade and reveal a hidden agenda in the patient, in other words, what is initially concealed to both the doctor and the patient. The procedure is expressed as a discrepancy between the stated and the real reason for the visit. This could also have been expressed as *degree of agreement*, i.e. that the doctor, through good consultation technique, reaches a new agreement with the patient about the real reason for the consultation.

At the *second meeting* further definitions of the concept of 'knowledge' were added to the two concepts in the previous study, 'factual knowledge' and 'tacit knowledge' or 'familiarity'. The group introduced a subordinate level concerning familiarity. The group spoke of the importance of knowledge about the patient's network, knowledge about and from the primary care team, from the field of primary care, written and

oral knowledge, and the doctor's own 'capacity for judgement'. 'Familiarity' or 'tacit knowledge' is acquired by a person through long experience. In the context of family medicine it can mean learning to get a general grasp of a situation and interpret it without basing one's conclusion wholly on distinctly medicinal grounds. Judgement concerns both well-founded factual knowledge and what one has learned from practice related to the particular individual. It can be a matter of deviating both from what has been proved to have an effect at group level and from what the doctor has learned from practice because the individual seems to benefit best from measures that do not follow normal rules and recommendations.

In medical contexts factual knowledge is a fundamental and essential type of knowledge since the patient's problem in general requires such knowledge if it is to be helped. Sometimes there is no factual knowledge available 'here and now', and the group considered it important to reveal such situations, as well as situations where factual knowledge had or had not been used.

At the *third meeting* the variables were adjusted and a manual with instructions for how to complete the form was arrived at by discussion. The protocol contained 31 variables, the last four of which dealt with the *significance* of a holistic view in the actual consultation. In many contexts a holistic view is described as something wholly positive, but the group thought that there are consultations when it is not necessary to work with a holistic view of the individual, and that there are also situations when it can even be perceived as negative to know too much about the person. The protocol as a whole can be seen in Figure 5.

**The findings of the pilot audit.** Eight of the ten doctors handed in completed forms. Participation in an APO audit is voluntary and is steered by the participants; despite two reminders, two people chose not to send in any forms. The eight doctors had together registered 255 consultations with an average of 32 per doctor. The distribution was between 25 and 52 (median=30) consultations per doctor. Of the 255 consultations, 60% were with a patient from the doctor's own list.

In the assessment of the patient's problem, it was deemed that the doctors needed special factual medical knowledge in 83% of the cases, while familiarity with the patient was considered important in 53% of the consultations. The doctors thought that judgement had been called for in 36% of the cases.

In the decision making, factual knowledge had played a part in 88% of the cases and judgement in 58%. In contrast, knowledge obtained from the primary care team, knowledge obtained orally from colleagues or other people, and knowledge from written sources had been considered in the decision making only to a limited extent, at the lowest 11% and at the highest 28%.

The doctors assessed that a holistic view had been necessary for the outcome of the visit in 43% of the registered consultations and valuable in 25%. The doctors deemed that it was not necessary to have a holistic view according to the definition in the previous study in 31% of the consultations. Not once was it considered negative to have a holistic view.

In 88% of the 255 consultations the doctors had filled in the first VAS scale about their

## Presence of a holistic view in the general practitioner's medical decision making

| | Age | Sex | | Patient | | | | | Problem | | | | Type of knowledge | | | | Factual knowledge | | | Team knowledge | | | Subject knowledge | | | Oral knowledge | | | Written knowledge | | | Capacity for judgement | | | Significance of holistic view | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Own patient | Other doctor's patient | No one's/everyone's patient | Well-defined problem | Problem difficult to define | Purely factual knowledge important | Familiarity important | Knowledge of the patient's network important | Judgement important | Factual knowledge considered | Factual knowledge not considered | Factual knowledge not obtainable | Team knowledge considered | Team knowledge not considered | Team knowledge lacking | Subject knowledge considered | Subject knowledge not considered | Subject knowledge not obtainable | Oral knowledge considered | Oral knowledge not considered | Oral knowledge not obtainable | Written knowledge considered | Written knowledge not considered | Written knowledge not obtainable | Subject knowledge considered | Subject knowledge not considered | Subject knowledge not obtainable | Holistic view was necessary | Holistic view was not necessary | Holistic view was valuable | Holistic view was negativ/added nothing |
| | | M | F | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| 1 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple, problem-free / Pronounced polysymptomatology | | | | | | | | | | Discrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| 2 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple, problem-free / Pronounced polysymptomatology | | | | | | | | | | Discrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| 3 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple, problem-free / Pronounced polysymptomatology | | | | | | | | | | Disccrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| 4 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple problem-free / Pronounced polysymptomatology | | | | | | | | | | Discrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| 5 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple problem-free / Pronounced polysymptomatology | | | | | | | | | | Discrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| 6 | | | | Familiarity with the patient<br>Totally unknown / Very well known | | | | | | | | | | | Symtomatology<br>Simple, problem-free / Pronounced polysymptomatology | | | | | | | | | | Discrepancy in the reason for the visit<br>Full agreement / Serious discrepancy | | | | | | | | | |
| | | | | One cross | | | One cross | | One or more crosses | | | | One cross | | | One cross | | | One cross | | | One cross | | | One cross | | | One cross | | | One or more crosses | | | |

*Figure 5. The Audit Protocol studying a holistic view.*

*Table IV. The results of the VAS scales concerning familiarity with the patient, the complexity of symptomatology, and agreement/discrepancy between the first stated reason and the ultimate reason for the consultation.*

| | % VAS scale | | |
|---|---|---|---|
| | **Knowledge** | **Complexity of symptomatology** | **Discrepancy about reason for visit** |
| Low value | 34 | 60 | 74 |
| Neutral value | 19 | 25 | 23 |
| High value | 47 | 15 | 3 |
| Total | 100 | 100 | 100 |

familiarity with the patient. In 85% of the consultations the doctors had filled in the second scale about symptomatology, and in 85% they had filled in the third scale about the stated and the ultimate reason for the visit.

The results of the assessment by the VAS scale were analysed by dividing the ten-grade scale into three main groups (low value 1–3, neutral value 4–7, and high value 8–10). In 47% of all the cases the patients were well known to the doctors. The doctors judged that 15% of the patients had a complex symptomatology and that 3% of the cases led to a new agreement about the real reason for the visit (Table IV). In those cases where the doctor had stated that the patient was one of his or her own and had also completed the VAS scales, 72% of the patients were well known, 18% had a complex symptomatology, and in 2% there was a new agreement about the real reason for the visit.

## Comments

This pilot study is a 'two-in-one' study and is above all about the possibilities and limitations of audit according to the APO method. We wanted to examine whether it is possible, with the aid of this form of audit, to measure soft data, in our case the occurrence of a holistic view in the general practitioner's clinical work. We found that the collegial brainstorming process that starts every APO process also functioned in this context, and moreover in roughly the same time frame as it usually takes. There was a protocol ready to test after three intensive meetings. The aim of the audit registration was to reach at least 30 registered patient visits per doctor [Bentzen 1993]. This goal was achieved for six of the eight doctors. The usual protocol was supplemented with three VAS scales. These were used in a majority of the consultations, thus giving more detailed information about both the patient and the visit.

The process began with a clear link to an earlier study which sought to shed light on concept definitions (Paper I). In the commission from the National Board of Health and Welfare for the previous study there was a desire to measure the prevalence of a holistic view and the type of consultations in which a holistic view was present in the decision making.

It was possible to *construct* an audit protocol with almost exclusively soft variables. It was also possible to *measure* the presence of a holistic view if one shares the doctors' idea of what a holistic view is. On these conditions one can measure the occurrence of this abstract concept with the aid of an APO audit. This is not to say that one has then studied the total prevalence of a holistic view, nor all its aspects.

We know from previous experience that an APO audit functions and influences doctors' medical decision making in well-demarcated and commonly occurring cases such as respiratory tract infections. In this pilot study we have tested the instrument in a new context and with a partly new methodology. We wanted to examine whether the APO method could be used to measure soft data and the occurrence of a holistic view according to a specially produced definition. To gain some idea about the prevalence of a holistic view in the everyday work of general practitioners, however, a project on a larger scale should be conducted. It has not yet been possible to carry out any evaluation with the participants after the pilot audit. If one was to proceed and conduct an audit on a large scale concerning a holistic view, the participants' experiences should be utilized in the design of a final registration protocol.

# General discussion

## Summary of main results

This dissertation is a case study of the APO method, which is a way of working with the general practitioner's continuous learning and quality improvement. We have studied the use of the APO method for different types of tasks in the general practitioner's everyday practice.

The large and complex field of general practice is the very foundation of the health care system. We have studied the concept of holistic view in two ways, through focus groups and through a pilot audit of the presence of a holistic view in decision making (Papers I, IV). We found that a holistic view pervades general practitioners' clinical work and that this outlook is the core of general practice. Factual medical knowledge was needed in the assessment of the patient's problem in a majority of the consultations as well as in the decision making. In a majority of the consultations a holistic view had been necessary or valuable for the outcome of the visit. Primary care without a holistic view is not primary care. For a general practitioner, a holistic view means being able to offer both biomedical and psychosocial knowledge. One can talk of a bio-psychosocial attitude, drawing on the patient's experiences. The field of knowledge is constantly developing, and so must its practitioners.

Quality development in health care has been in focus since the end of the 1980s. We wanted to find out how this has affected general practitioners and the importance they attach to the phenomenon (Paper II). In interviews we found that general practitioners make a clear distinction between demands from above and obligations from within the profession, top-down versus bottom-up. We also found an understanding for the need to have both perspectives. Society rightly demands good and secure care for everyone. Demands for quality development that come from outside, often with an element of control, are perceived as encroaching on professional autonomy, and the methods offered are rarely adapted to primary care. Instead the profession follows up its clinical work with methods developed by the profession. Such methods include documenting one's own actions, and there is a large element of inter-colleague discussions. A method with these characteristics is the APO method (Papers III, IV).

We studied the pedagogical process in the APO method through the initial phases with brainstorming and discussions of variables, and the actual data collecting phase and its effect on behaviour (Papers III, IV). The APO method was created to measure quantifiable data supplemented with qualitative attributes. We know that the APO method functions in this way when it comes to hard data such as antibiotics prescriptions and after a completing an entire APO process, chiefly through a number of published Danish and Swedish

studies [Melander et al. 1999, Munck et al. 1999, Hansen et al. 2003, Søndergaard et al. 2006]. We compared audit participants with their non-participating colleagues in an audit about respiratory tract infections and found that they were two different groups. The participants prescribed antibiotics to a lesser extent than the non-participants right from the beginning. Both groups reduced their prescription during these initial phases. In three of five measurement periods there were significant differences between the groups. During the actual audit registration, the prescription levels of the groups were close to each other, but in the final period they differed once again. In the pilot audit about the presence of a holistic view and the use of different forms of knowledge in decision making, we studied the possibility of a new use for the APO method, namely, to measure soft data. After three meetings, the doctors had arrived at an audit protocol which was supplemented with three in-depth VAS scales. The results showed that the variables and scales worked. The doctors registered on average 32 consultations each, and in a clear majority of these they had also used the three scales.

*Table V. Characteristics of qualitative and quantitative research (Modified from Merriam 1988, p. 18, Merriam 1994, p. 32).*

| *Factor* | *Qualitative research* | *Quantitative research* |
|---|---|---|
| Focus | Quality (nature, kind, essence) | Quantity (how many, how much) |
| Theoretical basis | Phenomenology, symbolic interactionism | Positivism, logical empiricism |
| Key words | Fieldwork, ethnographic, subjective, 'grounded', naturalistic | Experimental, empirical, statistical |
| Goal | Understanding, description, discovery, hypothesis generation | Prediction, control, description, proof, hypothesis testing |
| Methodological properties | Flexible, developing, unstructured | Predetermined, structured |
| Situation | Natural, familiar | Unfamiliar, artificial |
| Selection | Small, not random, theoretical | Large, random, representative |
| Data collection | The researcher as the primary instrument, interviews, observations | 'Non-living' instrument (scales, tests, questionnaires, computer processing) |
| Analysis | Inductive (by the researcher) | Deductive (through statistical methods) |
| Results | Comprehensive, holistic, capable of development | Precise, detailed, reductionistic |

# Methods

We chose to shed light on the different questions with both qualitative and quantitative methods and analytical models as a kind of triangulation in order to illuminate different constituent aspects of the topic of this dissertation. Table V shows the distinctive features of qualitative and quantitative research approaches according to Merriam [1988, 1994].

We used focus group interviews with latent content analysis to capture perceptions of the concept of holistic view in general practice (Paper I). We chose individual in-depth interviews and a phenomenological approach in the analysis in order to understand doctor's experiences of the phenomenon of statutory requirements for systematic quality development (Paper II). We chose a retrospective analysis of electronic patient records with subsequent statistical processing and inference in order to see how an audit affected participating doctors and their colleagues (Paper III). We used both qualitative and quantitative methods to test whether the APO instrument would function for measuring soft data; participant observation with field notes for a description of the actual audit process, and a quantitative compilation of reported audit data from the pilot audit (Paper IV).

The choice of methods for the different studies is discussed in connection with the presentation of the results for each study. From now on this work will be discussed as an exploratory case study [Merriam 1988, Yin 1989, Geertz 1993, Merriam 1994].

## Case study methodology

In the case study methodology there are different forms of case studies, such as descriptive, explanatory, and investigative or exploratory case studies [Merriam 1988, Yin 1989, Geertz 1993]. A case study can also be evaluative. Case studies which reach beyond the actual description of a phenomenon are always, according to Merriam [1988], interpretative in some form. When this happens, the researcher analyses, interprets, or theorizes about the studied phenomenon. Mostly, however, case studies do not just take one of these forms but are combinations of descriptive and interpretative or descriptive and evaluative case studies.

The dissertation itself could be described as an exploratory case study in order to gain a deeper understanding of the role of the APO method in general practice and of the dynamics behind the APO method and its processes among GPs [Merriam 1988, Yin 1989, Geertz 1993, Merriam 1994]. It all started thirteen years ago when the APO method was introduced in primary health care in Southern Sweden. As project leader during this introduction, it was my intention right from the start to assess the experiment on behalf of various financiers. It was clear to me at an early stage that this would result in a case study.

The case study as a method is suitable for use when the aim is to understand and describe processes and to understand an unfamiliar culture. We are talking here about ethnographic research, where one method is participant observation in the setting under study [Geertz 1993]. I have researched my own working reality. Because I had the opportunity to learn how to supervise doctors and other staff in primary care in

the art of running an audit project, I became a participant observer. Throughout the process I have kept a diary and made field notes about different APO projects and their constituent processes. This documentation, which I have continuously analysed and reflected on, together with the studies making up this dissertation, has led me to change my perspective after the thirteen years that I have spent in this context, supervising a large number of audit projects. I have moved from the position of an outside administrator to an understanding of the context of general practice. This understanding includes having adopted the way general practitioners view their field of knowledge and the complexity of the knowledge requirements and the development of this knowledge. This also includes an understanding of the necessity of professional autonomy and the medical profession's demand for self-determination in a broad sense. One might object that this approach involves a risk that the researcher will have problems drawing boundaries vis-à-vis the studied culture. In my case this risk should be minimal since the cultural group that I have studied is the medical profession with its surrounding walls of educational requirements, the need for registered authorization and professional ethical guidelines, all of which make it impossible to completely assimilate anyone who lacks these attributes.

The strengths of the case study are that it enables the study of complex contexts and that it is rooted in real situations. If one has reached the conclusion that a case study is the best way to obtain an answer to one's questions, it gives multifaceted insight into the studied phenomenon. Such insight can then generate theories from which hypotheses can be formulated for future research [Yin 1989, Crabtree & Miller 1992, Hamberg et al. 1994, Merriam 1994, Allwood 1999].

The weaknesses of the case study are the risk that the researcher can simplify or exaggerate factors in a situation, which can negatively affect interpretations and conclusions. A case study is never an account of a whole. Analysing another culture, according to Geertz [1993], means:

> guessing at meanings, assessing the guesses, and drawing explanatory conclusions from the better guesses, not discovering the Continent of Meaning and mapping out its bodiless landscape.

The researcher is his own instrument, and hence the researcher's ability to observe and interview is an important aspect [Hamberg et al. 1994]. This requires training, just as it takes training in analysing collected information. The researcher is at the mercy of his or her own ability in most of the research. Another weakness is that the researcher is free to choose from among a range of available data and thus create a bias in the final product. Conscientious ethical demands are therefore made of a researcher conducting a field study.

## Validity, reliability, and generalization

The question of the generalizability of qualitative studies, including case studies, has been discussed in various contexts. One way of checking that the results are reliable and agree with reality is triangulation, which involves looking at a phenomenon in different ways and conveying the results back to the people who were interviewed or observed.

Another way is to check the results with colleagues, clarifying one's values and theoretical premises as a researcher. To describe in detail how the study was conducted and how the conclusions were reached can strengthen the reliability [Yin 1989, Crabtree & Miller 1992, Merriam 1994, Kvale 1997, Allwood 1999]. The author's pre-understanding has been discussed in many contexts, and it is important that the researcher is aware of his or her own pre-understanding and describes it clearly. The selection, along with the procedure, can be significant for the generalizability of the results [Allwood 1999]. During my years as audit facilitator in many different projects I have met a large number of general practitioners from many different geographical areas and settings, besides the doctors I interviewed individually and in groups (Papers I, II, IV). This fact should therefore strengthen the conclusions in this dissertation.

The intention in qualitative studies is to contribute to increased understanding and the focus is on discovery. Qualitative studies generate theories and hypothesis. Hamberg et al. [1994] state that 'It is not the aim of qualitative studies to prove such theories and hypothesis to be false or true.' The findings from the studies in this dissertation might not be generalized but it is nevertheless reasonable to assume that our findings can be transferred to similar contexts and that general practitioners with similar working conditions have opinions like these [Miller & Fredericks 2003].

# Results

## A holistic view

The concept of holistic view has been discussed in the study of the meaning of the concept, and in the study about the attempt to develop the APO instrument in order to measure soft data (Papers I, IV). We found three aspects of the concept of holistic view: the categories *Attitude*, *Knowledge*, and *Circumstances*. Each category had two or more subcategories; professional and political attitude, factual and tacit knowledge, organisational and motivating circumstances, sphere of activity and tools. The pilot audit about a holistic view in medical decision making concerned the concept of knowledge and the presence and significance of different forms of knowledge for medical decision making. During the brainstorming process, further definitions of the concept of knowledge were added to the concepts 'factual knowledge' and 'familiarity' and a whole new concept 'capacity for judgement'.

The concept of holistic view was first used in political documents, with the intention to characterize primary care in Sweden [Socialstyrelsen 1976, Socialdepartementet 1984]. The concept of a holistic view seems to be implied in other concepts, for example in Starfield's definition of primary care or in the concept of personal care [Starfield 1998]. In paragraph six in the WHO charter for General Practice/Family Medicine in Europe, 'holistic' means the physical, psychological, and social perspectives of individuals, families, and communities [WHO 1994]. In the PubMed database one can find the MeSH term 'holistic health' [PubMed Database]. According to Kearley et al. [2001] the GP considers the patient in the context of the whole person, from biomedical, psychological and social perspectives.

Continuity could be seen as one aspect of holistic care. Patients were more satisfied with care given by physicians if they had had a longer period of seeing the same doctor [Donahue et al. 2005]. It is especially important to have continuity of care if the patient has a chronic, multifaceted disease or emotional problems [Guthrie & Wyke 2006]. The results of these two studies correspond well with the findings from our focus group interviews and the brainstorming process in the pilot study, where the GPs discussed the necessity of continuity from a holistic viewpoint (Papers I, IV). Holistic care or whole person care has been identified as a main feature of personal care among patients and providers in primary care settings in the UK [Tarrant et al. 2003]. Patients have expressed the importance of a holistic approach among GPs. This means that the doctor should be informed about a patient's whole life situation in order to be able to create a sense of security and coherence in the patient [Bültzinglöwen et al. 2006].

The participating GPs put an emphasis on the consultation process as being an important tool for achieving a holistic view of the patients and their problems (Papers I, IV). Olesen et al. [2003] have identified important tools to perform multidimensional therapy and balanced diagnosis. The consultation process is one such tool. Balanced diagnosis concerns biomedical conditions, culture and context conditions, medico-psychological and social conditions. Juul Jensen [1984] also points out that a distinctive feature of a holistic view in therapeutic work is to interpret the patient's signals through communication with the patient. Pendleton [1994] and Malterud [1994, 1998] stress the importance of the right questioning technique in order to arrive at difficult-to-obtain knowledge about the patients and their symptoms. From this viewpoint, the patient is part of a whole which can be demarcated at different levels, such as the biological-psychological level, the social-psychological level, and the social level. In the latter two the disease is viewed as signals of conflicts or contradictions in the individual's interpersonal relations or as signals of societal contradictions.

Another important tool is knowledge, theoretical and biomedical and also knowledge achieved by experience [Wulff & Gøtzsche 2000, Hunskår 2003, Olesen 2003]. This relates well to our findings about both factual and tacit knowledge (Paper I) and the focus on different forms of knowledge in the pilot audit about a holistic view (Paper IV). In the brainstorming process of the pilot audit yet another dimension of the concept of tacit knowledge emerged, namely, judgement. Pörn [1990] describes this form of knowledge as being essential for a doctor in the encounter with the patient. Good judgement can be acquired through many years of professional practice, together with constructive reflection on this practice. Juul Jensen [1984] talks of situation-oriented practice where an assessment of the patient's entire situation is required in order to answer the basic question of whether the patient should be treated or not. Through this reflection, experience is reinterpreted as knowledge which makes the doctor better equipped to weigh up factual knowledge against previous experiences and the individual patient's special needs, in his assessment of what is best for that particular patient.

According to all the participants, the way in which primary care is organized is important. The organization can either facilitate or complicate the possibility to accomplish holistic and personal care. The primary care team, with its varied competence, will therefore facilitate a holistic view (Paper I). In the pilot audit, by contrast, knowledge obtained

from the primary care team was said to be important but had been considered in the decision making only to a limited extent (Paper IV). Tarrant et al. [2003] expressed the importance of both the nurse and the receptionist, together with the GP, in making care personal. Also when talking about informational, management and relational continuity according to Haggerty et al. [2003], different professions have a role in linking information about the patient's preferences and context to ensure that the services are responsive to a single patient's needs [Olesen 2003].

The VAS scale concerning familiarity with the patient (Paper IV) has a direct link to continuity, one of the most important watchwords of primary care [Balint 1957, Pendleton et al. 1994, Fredriksen & Elverdam 2004, Mercer et al. 2007, Guthrie & Wykes 2006, Ridd et al. 2006]. The concept of cooperation, which also plays a significant part in Swedish primary care, is likewise reflected in the pilot audit through the variables in the protocol concerning consultation with colleagues and others, as well as the VAS scales concerning symptomatology and the reason for the visit.

For an uninitiated reader the third scale concerning discrepancy about the reason for the visit may seem somewhat difficult to judge and to some extent confusing. The result of an audit according to the APO method is intended for the profession, in other words, for those who constructed and participated in the audit. The aim of the third scale was to try to show the participants what happened during the consultation concerning the patient's stated reason for the visit and the doctor's assessment of the real reason. A high value, expressed on the scale as *serious discrepancy*, was intended to be positive in the sense that the doctor, through his or her consultation technique, could find the patient's hidden agenda, if there was one. In only 3% of the consultations did this 'discrepancy' arise, or to put it in positive terms, a 'new agreement'. To some extent this should be considered normal for Swedish primary care, where the majority of cases have a clear and simple symptomatology, and where the patients are known to the doctor.

## Quality development

Quality development means following up what is done to identify areas for improvement and to develop both individuals and a whole organization (Paper II). The legislator demands systematism, but does not indicate any methods. The methods introduced often feel like package solutions which are both alien and impractical for the activities. An alternative would be to follow the example from the UK, where quality indicators and quality targets are set in order to be able to quantify the health gain to a practice population [McElduff et al. 2004]. There is some evidence that implementing interventions based on integrated quality management models may improve process or outcome performances [Minkman et al. 2007]. A bottom-up perspective on quality work emerged from the statements as a self-evident duty and as a professional attitude to medicine, guided by the ethical principles of respect for the individual, of doing good and not doing harm. It is natural to follow up one's own clinical actions in accordance with these principles. This kind of follow-up is best done in internal processes, individually or in groups, according to the needs that doctors themselves feel that they have (Papers II–IV). These findings relate well to different theories in profession studies as regards what characterizes a profession [Greenwood 1957, Kasher 2005]. To achieve systematism requires

a dialogue between the representatives of both perspectives in order to establish a mutual understanding of each other's conditions [Pigera et al. 2008].

A model originating in a different organizational field than medicine and care proceeds from a different logic and other values. The concept of 'customer' is controversial in health care. According to Edvardsson & Larsson [2004], the customer perspective in the quality concept almost always concerns aspects that can be made concrete in the form of guarantees. In health care these guarantees can concern the waiting time for treatment, what can be expected of various care procedures, and so on. But doctors are not like waiters who bow to the customer's wishes, and the customer in health care is not really a customer with all the customer's potential to choose. Models with their origin in business are mainly visible at administrative levels and do not seem to gain a foothold in practice. Under such circumstances quality assurance can be compared to Pandora's box, as the good things in the box change to evil if it is opened where it does not belong [Erlingsdóttir 1999]. Work with quality assurance thus does not become a living instrument but is instead regarded as an administrative imposition with no real meaning [Casalino 1999, Kelley & Tucci 2001]. Doctors have difficulties with things that come from the outside. Professionals make their own assessment based on what they have learned through education, their own and other people's experience, and by constantly following scientific development. According to Swedish legislation, care must be provided in dialogue with the patient, but this does not mean that all the patient's wishes must be satisfied. It takes a professional assessment of the treatment that has the greatest benefit.

Systematism is needed both generally in the organization and specifically for individuals in the organization, in our case the doctors, to avoid *ad hoc* implementation of work with quality development. In the medical profession's work with quality it is essential to have an evidence-based way of thinking, which means finding the best available evidence and relating one's follow-up results to this evidence, but without this becoming 'cookbook medicine' [Sackett 1996].

Quality development mainly consists of two parts: assessment and improvement of quality. Each part has its methods. Medical or clinical audit methods are tools for the professional perspective [Øvretveit 1992, Westlund & Edvardsson 1998]. The medical profession has for a very long time taken the responsibility, often including personal responsibility as well, for ensuring that the care provided is of good quality. This responsibility also includes responsibility for research and development, which are typical characteristics of a profession and its autonomy [Greenwood 1957, Strömberg 1997, Kasher 2005].

Studies in the UK, where audit is often associated with a top-down approach, have shown that discussions about audit projects and a positive attitude in the group of colleagues support both participation in and completion of audit projects [Baker et al. 1995, Lervy et al. 1994, Watkins & King 1996]. Although Danish and Swedish studies have shown that audit according to the APO method led to changed behaviour in the participating doctors, other studies have shown that the effect of an audit with feedback is usually rather small; it is greatest in cases where compliance with recommendations is

low [Eccles et al. 2001, Jamtvedt et al. 2004]. Benjamin [2008] stresses the fact that it is essential to measure practice to know when there is a need for a change in practice. Audit provides the best available tool to achieve this objective. The prospective APO method is itself an intervention whereby the data collection is enough to have an effect in the desirable direction (Paper III). This could suggest that active participation in measuring some aspect of one's work can have an intrinsic value for changing behaviour.

## The APO method

The APO method occurs in different contexts and in different ways in this dissertation: as a method for quality development and professional self-scrutiny (Papers II–IV) and purely as a data collection method (Papers III, IV). Audit according to the APO method is based entirely on voluntariness and is thus not a part of the control apparatus [Bentzen 1993, Munck et al. 1998]. The APO method for following up one's own habits was therefore considered suitable in primary care as an instrument that supports doctors' professional autonomy (Paper II), as also corroborated by Danish and Swedish studies [Melander et al. 1999, Hansen et al. 2003, Munck et al. 1999, Søndergaard et al. 2006].

Physicians who chose to take part in an audit differed right from the start in their clinical behaviour from physicians who chose not to take part (Paper III). Both participants and non-participants reduced their prescription of antibiotics for RTI during the study period. We were able to see that the two groups were similar in their prescription patterns during the actual data collection period. A question that interested us was whether this was sheer chance or represented something else. We have not found any certain answer, but against the background of what we know about the human mind and selective perception, it is an intervention in itself to have a sheet of paper to fill in as soon as one has had a patient [Mayo 1946, Holden 2001]. The change observed in the group of non-participants, especially during the registration period, could thus be due at least in part to a contamination effect. One might assume there was a potential for a change of behaviour in this group as well and that it was triggered by their participating colleagues. At the same period as the audit process, a reduction in antibiotic prescriptions by about 15% could be observed all over Sweden, probably caused by increased attention in the media, and by various national and regional interventions. No single method for changing behaviour works in every context; instead a combination of strategies is usually needed [Robertson et al. 1996, Oxman 1994].

The experiences from the pilot study (Paper IV) have shown that it is possible to use the APO method in a context other than the usual one, which proceeds from a diagnosis group and how patients with such problems are diagnosed and treated. The experiment has shown that it is possible to measure the presence of an abstract phenomenon in decision making, even though the instrument is rather blunt. An attempt was made to achieve greater precision by creating the VAS scales.

If the actual data collection in an APO audit can be regarded as an intervention, then the feedback of the audit results is also an intervention in that the individual can see and reflect on his own results. In addition, there is the reflection in connection with the follow-up meetings that are so characteristic for the APO method, which are yet

another intervention through the discussions that are then held between colleagues from primary care and specialists from hospital. Finally, the entire audit process becomes an intervention.

An APO audit is like a camera that photographs life at a given moment. Just as the quality of pictures taken by real cameras can vary greatly, an APO audit can reflect reality with greater or lesser relevance. The accuracy depends on how well the variables reflect what really happens, but an audit is still never more than a snapshot. These snapshots are used as a starting point for discussions among colleagues about important values for a general practitioner [Bentzen 1993, Munck et al. 1998, Hansen et al. 2003]. The pilot study (Paper IV) shows alternative uses for the APO method, e.g. that it is possible to adapt the method for softer variables. It also shows the possibility of extending the method to further occupational categories which perhaps do not have as structured a way of working as a doctor, and for which the element of vague phenomena may be greater, but above all different.

The pilot study led to a renewal of the instrument through supplementation with the VAS scales. Although this is still a crude way to study a general practitioner's everyday work, the advantage, as always in the context of APO, is the speed of both data collection and processing/analysis compared with other types of data collection methods, such as video or audio recordings of the consultation, interviews, etc. Audit according to APO captures subjective experiences which describe and influence reality [Melander et al. 1999, Hansen et al. 2003, Munck et al. 2003, Søndergaard et al. 2006].

A weakness in all auditing according to the APO method may be the selection of variables, which always has a subjective element. Another weakness may be the self-selected group of GPs who probably already have a more appropriate clinical behaviour than those who refrain from participation (Paper III). Consequently, one must be very careful when interpreting APO data for research purposes.

APO audits are intended for comparisons, above all comparisons between what people believe they do and what they actually do. Comparisons can also be made between individual doctors, between health centres, between regions, and even to see what people do in different countries. Joint Nordic projects show that it is possible to make such comparisons, but they also indicate that there are methodological difficulties [Hansen et al. 2002]. Contexts that differ too much make it tricky to make reliable comparisons, but they can initiate lively discussions about these differences.

## Implications for clinical practice and future research

In this dissertation the starting point is the sphere of general practice, with perspectives such as professional development, quality development, reflection, and learning.

When quality improvement is demanded from above and is to be implemented with methods from other types of activities, this does not appeal to general practitioners. Instead they prefer to follow up their clinical procedures with their own methods, developed together with colleagues, so that their professional autonomy is not threatened. To achieve systematism in professionals' learning and follow-up in order to improve quality, both perspectives must be combined: the overall rules must be made to fit the professionals' values and methods.

To be able to practise their profession, doctors must constantly learn, abandoning old methods and introducing new, more efficient methods for diagnosis and treatment. For this the professionals need different forms of support. This can take the form of time, guidance, methodological support, and – not least of all – active support from the management. Learning is an investment and should therefore be viewed as an opportunity rather than an expense.

What characterizes the reflective practitioner is the aspiration to let practice and theory engage in constant dialogue: practice yields the experiences that are compared and evaluated in relation to theoretical knowledge, and new theoretical knowledge is translated into practice after critical assessment of its relevance. Concepts like CME/CPD and EBM are natural elements in this process. The APO instrument fits the profession perfectly in that it stimulates active reflection on practice compared with the state of knowledge.

We have found that the APO instrument is applicable both to what was previously known, measuring action in well-defined and frequent clinical states, and to more general or 'soft' aspects of the work. One of the strengths of the method is that it is not associated with a specific or static state of knowledge, but adapted to new, up-to-date knowledge. In each APO cycle there are elements where the state of knowledge is updated. The instrument also makes it possible to explain circumstances and procedures in connection with the actual data collection.

The question is how one can conduct audit so that it is a success rather than a failure. We believe that one answer is an environment where audit is made a priority and encouraged and supported. Another answer is the existence of a structured programme with coordination of audit activities and bringing together audit results.

The APO method is entirely voluntary. It may be questioned whether the method suits everyone. We know that some decline participation. We have found that participants act differently from non-participants. It is interesting to study which factors in individual doctors affect their commitment in scrutinizing and developing their own working methods. Factors which ought to be investigated include age, gender, and country of education. Another important question to study is what methods would suit those who are not interested in APO today, and whether APO can be modified to suit them.

An APO audit today mainly takes place with the aid of a paper form, but in today's Internet age, with computers on virtually every doctor's desk, a web solution might well be a better alternative. Web audits have been tested on a large scale in Finland and on a slightly smaller scale in Sweden and Denmark.

Today one can collect clinical data automatically via computerized patient records, as in certain quality registers. An important question is whether registration for an audit can be simplified, and possibly also automated. Perhaps the actual activity of registering one's clinical action on a form is a precondition for a good result. It could be a quality aspect to fill in one's data oneself, that precisely this activity gives the doctor cause to reflect and think carefully about his clinical stances, and that it is this reflection that enhances the quality of medical decision making.

In this dissertation we have particularly considered the introductory stages in the APO process, using scientific methods. The case study method has given me good insight into all the phases, but to fully understand what happens, how it happens, and when it happens, the later phases of the processes should be subjected to further scientific study.

# Conclusions

In conclusion, this case study of the APO method as a way of working with general practitioners' continuous learning and quality development has demonstrated the following:

- The concept of holistic view is multidimensional and well implemented in Swedish primary care. The participants were able to verbalize the meaning of a holistic view through narratives about their everyday clinical work (Paper I).
- One very important dimension of holistic view is knowledge, factual as well as tacit. The possibility to implement a holistic perspective in work with patients offers a strong motivation for Swedish GPs (Papers I, IV).
- GPs view internal follow-up of their own work as a professional obligation, but quality work as an imposition and a control function. This antithesis entails a difficulty in achieving systematism in work with quality development. If the statutory standards are to gain a foothold, they must be delivered in such a way that GPs feel that both perspectives can be reconciled (Paper II).
- The participants in an audit on prescription of antibiotics had a different prescription pattern than the non-participants right from the start. Both participants and non-participants reduced their prescription rates during the registration period. This could partly be an effect of ongoing audit discussions and partly due to a contamination effect. To help understand the processes going on, further qualitative research is needed (Paper III).
- We developed the audit protocol to measure also soft data. We found it possible to study the occurrence and significance of a holistic view and the category of knowledge in the GP's medical decision making (Papers I, IV).
- When supplemented with VAS scales, more detailed information was obtained about the consultation. The results indicate that the APO method can be an alternative to more time-consuming methods for studying what happens in the encounter with the patient (Paper IV).

# Abstract

General practice is a broad and multifaceted field of knowledge. Political steering instruments declare that general practice and primary care are characterized by a holistic perspective on the individual, with quality, accessibility, continuity, and cooperation being important factors. For the last few decades, quality assurance has been in focus in Swedish health care. Inspiration has come from other countries and from other spheres, such as the manufacturing industry.

The dissertation is a case study of the APO method, which is a way of working with the general practitioner's continuous learning and quality assurance. The aim was to explore the role of the method in general practitioners' professional development and quality development. Subsidiary aims were: to examine perceptions of a holistic view; to obtain a deeper understanding of the meaning of general practitioners' work with quality; to investigate how the actual registration phase in an APO audit affects general practitioners; and to develop the APO instrument to measure softer data.

We found that a holistic view pervades the clinical work of general practitioners. A holistic view means being able to offer biomedical and psychosocial knowledge and draw on the patient's experiences. The field of knowledge is under constant development and its practitioners must also develop. General practitioners have an understanding of society's demand for good and safe health care for everyone, but they make a clear distinction between demands coming from outside (top-down), and obligations from within the profession (bottom-up). Top-down demands are felt to encroach on professional autonomy, and the methods offered are rarely adapted to primary care. Instead the doctors follow up their work with methods developed by the profession. Such methods include documenting one's own actions, with elements of collegial discussions, such as the APO method, which was devised to measure quantifiable data supplemented with qualitative attributes. The APO method functions in this way when it comes to hard data. We compared audit participants with non-participants in an audit about drug prescriptions. The participants prescribed antibiotics to a lesser extent than the non-participants right from the start. Both groups reduced their prescribing in the initial phases of the audit process. In the pilot audit about a holistic view and knowledge, we studied the possibility of using the audit method for soft variables as well. The audit protocol was supplemented with VAS scales to give greater depth. The results show that the variables and scales worked.

This dissertation shows that the APO method can have a role to play in the development of the field of general practice, both in clearly biomedical spheres and in more general aspects of the work. It is problematic to achieve systematism in work with quality since

there is such a strong opposition between the need for professional autonomy and the methods offered. The APO method satisfies the profession's need for self-determination and reflection, above all through collegial comparison and discussion.

# Sammanfattning på svenska

Det allmänmedicinska kunskapsområdet är brett och mångfacetterat. I politiska styrinstrument uttrycks att allmänmedicinen och primärvården kännetecknas av ett helhetsperspektiv på individen, där kvalitet, tillgänglighet, kontinuitet och samverkan utgör viktiga faktorer. Sedan ett par decennier har kvalitetssäkring varit i fokus i svensk sjukvård. Inspirationen har hämtats från andra länder och från andra verksamheter, som t.ex. tillverkningsindustri.

Denna avhandling är en fallstudie kring APO-metoden, som är ett sätt att arbeta med allmänläkarens kontinuerliga lärande och kvalitetsarbete. Syftet var att utforska metodens roll i allmänläkares professionella utveckling och kvalitetsutveckling. Delsyften var att utforska uppfattningar om helhetssyn, att få en djupare förståelse av innebörden i allmänläkares kvalitetsarbete, att undersöka hur själva registreringsfasen i en APO-audit påverkar allmänläkare och att utveckla APO-instrumentet för att mäta mjukare data.

**I den första studien** om helhetssyn ville vi kartlägga allmänläkares och distriktssköterskors tolkningar av helhetssynsbegreppets innebörd och dess betydelse i mötet med patienterna i det dagliga arbetet. Sammanlagt genomförde vi sju fokusgruppintervjuer i två landstingsområden, fyra intervjuer med allmänläkare och tre intervjuer med distriktssköterskor. För analys av intervjumaterialet användes latent innehållsanalys.

Vi fann att helhetssyn genomsyrar både allmänläkares och distriktssköterskors arbete. Helhetssyn handlar om förhållningssätt, kunskap och primärvårdens omständigheter och villkor. I analysen framträdde olika former av kunskap, både teoretisk kunskap, också kallad påståendekunskap, och kunskap man får genom lång erfarenhet och av att utöva sitt yrke, så kallad förtrogenhetskunskap.

Trots att professionerna sällan använder helhetssyn i sin terminologi är den påtagligt närvarande i synen på arbetsinnehållet. För allmänläkaren är helhetssyn att kunna erbjuda biomedicinsk och psykosocial kunskap och att samtidigt tillvarata patientens erfarenheter.

Det allmänmedicinska kunskapsområdet utvecklas ständigt och därför måste dess utövare också utvecklas. **I den andra studien** ville vi få en djupare förståelse av innebörden av allmänläkares arbete med uppföljning och kvalitetsutveckling. Data samlades in genom 14 individuella djupintervjuer och analyserades med en fenomenologisk ansats i syfte att fånga det gemensamma, själva essensen, i utsagorna.

Lagstiftaren ställer krav dels på en god och säker sjukvård för alla, dels på en systematisk kvalitetsutveckling av hälso- och sjukvården. Allmänläkare har förståelse för samhällets krav på god, säker och rättvis sjukvård för alla, men våra fynd visar att då det gäller

uppföljningen skiljer läkarna tydligt på utifrån kommande krav, top-down, och inifrån professionen ställda skyldigheter, bottom-up. Krav som kommer utifrån upplevs inkräkta på den professionella autonomin eftersom erbjudna metoder sällan är anpassade för primärvården, ibland inte för sjukvårdsverksamhet överhuvudtaget. I stället följer läkarna upp arbetet med metoder utvecklade av professionen. Sådana metoder inkluderar att dokumentera egna handlingar med starka inslag av kollegiala diskussioner.

För att uppnå systematik i arbetet med att utveckla kvaliteten i vården måste de uppifrån kommande kraven harmoniera med professionens sätt att hantera uppföljning och implementering av ny kunskap. En metod som har dessa kännetecken är APO-metoden som är framtagen för att mäta kvantifierbara data från allmänläkarens kliniska vardag kompletterade med kvalitativa attribut.

Det är känt att APO-metoden fungerar på detta sätt då det gäller hårda data som exempelvis antibiotikaförskrivning. **I den tredje studien** ville vi veta ifall något händer redan i de inledande faserna av en APO-audit då gruppen diskuterar själva ämnesområdet och vad man mera exakt ska studera. Vi ville också studera om det fanns någon skillnad mellan läkare som aktivt valde att delta i en sådan audit och de som valde att avstå. Därför jämförde vi auditdeltagare med deras icke-deltagande kollegor i en APO-audit om diagnostik och behandling av luftvägsinfektioner. Genom en retrospektiv genomgång av patientjournalerna studerades alla allmänläkarnas förskrivningsmönster avseende luftvägsinfektioner före, under och efter själva registreringsperioden.

Deltagarna förskrev antibiotika i mindre omfattning än icke-deltagarna redan från början. Båda grupperna minskade sin förskrivning under auditprocessens inledande faser, deltagarna med åtta procentenheter (RR= 0.86; 95% CI= 0.80-0.92) och icke-deltagarna med sju procentenheter (0.90; 0.83-0.97). I tre av fem perioder förskrev deltagarna en signifikant lägre andel antibiotika än icke-deltagarna. Äldre läkare förskrev antibiotika i 64% av fallen medan yngre läkare gjorde det i 58% (1.12; 1.09-1.15). Könstillhörighet hade ingen påverkan på förskrivningsnivåerna.

Det förefaller som om läkare som är intresserade av utvecklingsarbete och därmed går med i en APO-audit har ett mera medvetet och bättre anpassat beteende redan från början jämfört med de som avstår. Dock verkar det som om beteendet smittar av sig på icke-deltagarna då kollegorna är engagerade i sin datainsamling. Detta kan ha att göra med själva auditaktiviteten, men också med faktorer i omvärlden.

**I den fjärde studien** om helhetssyn och kunskap studerade vi möjligheten att använda APO-metoden även för ”mjuka” aspekter av arbetet. Den första delen handlade om att undersöka möjligheterna att ta fram ett auditprotokoll med utgångspunkt från den framtagna definitionen av begreppet helhetssyn. Den andra delen handlade om att testa det framtagna instrumentet. Genom deltagande observation dokumenterades processen med framtagande av auditprotokollet. Den andra delen, en pilotaudit, dokumenterades i en rapport med hela gruppens auditresultat.

Allmänläkare som deltagit i den första studien om innebörden i begreppet helhetssyn bildade en grupp för att i enlighet med APO-metoden arbeta fram mätbara variabler rörande helhetssyn. Tidigt i processen stod det klart att det skulle handla om olika

former av kunskap. Efter tre möten hade gruppen arbetat fram ett auditprotokoll. Protokollet kompletterades med tre fördjupande VAS-skalor rörande läkarens kännedom om patienten, komplexitet i symtomatologin och överensstämmelse/ diskrepans mellan läkarens och patientens uppfattning om besöksorsak.

Därefter genomfördes en pilotaudit. Deltagande läkare hade i uppgift att registrera minst 30 patienter. Totalt registrerades 255 konsultationer varav 60% med patient från läkarens egen lista. I 83% av fallen ansågs problemen kräva medicinsk faktakunskap, i 53% ansågs förtrogenhetskunskap viktig och i 36% bedömdes omdömeskunskap angelägen. Helhetssynen bedömdes nödvändig för utgången av konsultationen i 43% och värdefull i 25%. Läkarna angav att i 47% av konsultationerna var patienterna mycket väl kända, att 15% av patienterna hade en komplex symtomatologi och att det i 3% uppstod en ny överenskommelse mellan patienten och läkaren om den egentliga besöksorsaken.

Resultaten visar att det gick att konstruera ett auditprotokoll med i stort sett ”mjuka” variabler. Vi har också visat att det gick att mäta närvaron av helhetssyn i beslutsfattandet. Sannolikt kan APO-metoden utgöra ett alternativ till mera tidskrävande metoder för att studera vad som händer i mötet med patienten. De framtagna variablerna kan direkt knytas till några av primärvårdens honnörsord, nämligen helhetssyn, kontinuitet och samverkan. Protokollets variabler om olika former av kunskapsanvändning handlar om allmänmedicinens kärna.

**Sammanfattningsvis visar avhandlingen** att APO-metoden kan ha en roll i utvecklingen av det allmänmedicinska kunskapsområdet i vid bemärkelse, både inom tydligt biomedicinska områden och inom mer övergripande aspekter av arbetet. Det är problematiskt att uppnå systematik i kvalitetsarbetet eftersom det finns ett så starkt motsatsförhållande mellan behovet av professionell autonomi och de metoder som erbjuds via sjukvårdshuvudmannen. För att uppnå systematik måste utifrån kommande krav harmoniera med professionens sätt att tänka i dessa frågor. APO-metoden tillgodoser professionens behov av självbestämmande och reflektion genom framförallt kollegial jämförelse och diskussion.

# Acknowledgements

I wish to express my warmest gratitude to all those who have contributed to this dissertation, and particularly to:

My head supervisor, *Margareta Troein Töllborn*, for valuable discussions, for constructive criticism, for encouragement and for her never-ending patience and support during the years of work with this dissertation. It has been a privilege to learn from her great knowledge of family medicine.

My supervisor *Anders Håkansson* for excellent guidance in writing scientific papers and for constructive criticism, encouragement, patience, and friendship.

My co-author and unofficial guide, *Ingvar Ovhed*, for enthusiastic everyday support, for friendship and creative cooperation and for introducing me to the research field.

*Lennart Råstam* for friendly support, and for welcoming me to the community at the Department of Clinical Sciences, Malmö.

*Peter Westlund* for the theoretical structures.

*Ulla Åhs* who put me on the track.

*Lars Borgquist* and *Hans Liedholm* for encouraging me over the years.

*Susan Wilhelmsson* for productive cooperation and scientific discussions.

Colleagues at the former Blekinge R&D Unit for encouraging support. Special thanks to *Lena Lennartsson* for excellent data management and special support during settlement. Thanks also to *Ritva Ström* for great help with figures and tables.

Colleagues at Blekinge County Council Competence Centre for a supportive and understanding attitude towards my absence during my time-consuming research.

*Sten Ekenberg* and his colleagues at the Medical Library at Blekinge Hospital for excellent service and help with literature.

*Eva Ekvall Hansson* and *Kerstin Troein* for listening to my worries.

My research colleagues *Louise Bennet* and *Rut Öien* for showing an interest in my research and for the joy we have had together.

*Alan Crozier* and *Geoffrey Dykes* for excellent translation and excellent performance in revising the English.

All the general practitioners and district nurses who talked to me about their experiences of their everyday work.

My *mother* for her faith in my ability.

My *father* who would have been very proud.

My beloved sons, *Max* and *Niklas*, for believing in me.

*Mårten* for his love and understanding and for being there for me.

This dissertation was supported by grants from Blekinge County Research and Development Fund, the National Board of Health and Welfare and the Council for Medical Health Care Research in Southern Sweden.

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Lund University, Faculty of Medicine Doctoral Dissertation Series 2008:80

ISBN 978-91-86059-33-0
ISSN 1652-8220