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To cite this article: Pertti Kekki (1987) Quality of Care in General Practice, Scandinavian Journal of Primary Health Care, 5:4, 195-200, DOI: [10.3109/02813438709018094](https://doi.org/10.3109/02813438709018094)

To link to this article: <https://doi.org/10.3109/02813438709018094>



Published online: 12 Jul 2009.



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Quality of Care in General Practice

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Kekki P. Quality of care in general practice. *Scand J Prim Health Care* 1987; 5: 195–200.

In this article the author discusses some of the principles of evaluation of quality of care in general practice and connects this with some empiric results of a study which attempted to evaluate the quality of work of the general practitioners in a Finnish health centre. Data were obtained by 1) recording all the 8701 persons visiting during one year; 2) drawing a systematic sample of 2540 persons from all those who visited; and 3) abstracting the required information from patient documents to specially planned precoded and pretested forms. The objectives of the study included the investigation of the quality aspects of the health centre doctor services, among other things also the continuity and coordination of care. The results raise questions concerning the quality of work. No general conclusions on the quality of care are drawn, since the data may not be adequate for that. According to the author, the findings emphasise the importance of at least three things: The consideration of what is done in the context of the patients' prognosis, the communication skills of the general practitioners and the communication between the general practitioners who work in the same place. In the light of the described and other findings of the study it is strongly recommended that the study of the contents of the work should be an integral part of today's general practice.

Key words: quality assurance, evaluation of health services, primary health care, general practice.

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At the end of the 1970s the National Board of Health in Finland started to emphasise the importance of the study of the contents of services as the means to develop them. This was followed by a directive in 1980 on the research and development activities in health centres and hospitals (1). The basic principle in this context was that it is the obligation of the organization to evaluate and develop the outcomes, quality, effectiveness, and efficiency of its own activities. In order to achieve this the organization such as the health centre (which is a functional organization, not a building) or the hospital should conduct adequate and necessary research and development work which is directly related to its own activities. As examples of the important research areas, the directive listed the following: Studies on the need and use of services, evaluation of the diagnostic treatment and rehabilitation services, as well as the assessment of the quality of services in health centres and hospitals. The need to study own activities in health centres is

also stressed in the national health plans in Finland (2). It is important to notice that traditionally research and development work has been carried out in the hospital sector. In primary care these activities have largely lacked.

The new instructions also point out the need and necessity for collaboration with universities and research institutions and also make this cooperation financially possible.

Barriers to research and development in primary health care

The main barriers at least in Finland have been:

1. Attitudes towards research in primary care shared by the health personnel and the lay people. The general thinking has been that research is not necessary in health centres and that the time spent on research activities should be used for something more useful such as the patient work. The same people, however, consider it only natural that research is being conducted in hospitals. These atti-

tudes reflect a wrong frame of reference. Fortunately, they are at the moment in the process of change.

2. Lack of knowledge of research methods with doctors and other health personnel, which increases the fear and negative attitudes towards any research activities. This specifies a need for continuing education in this field.

3. Lack of collaboration between the general practitioners and the universities or research institutions. The development of ideas into research projects in primary care often would require advice or supervision from outside. If you do not know how to get it or from where to get it, the whole exercise can easily end up with nothing but frustration. Here we identify the need for a closer link between the university people and the general practitioners working in health centres.

Evaluation—a way to a change

When we speak of research and development of the contents of the services and activities we must often speak of evaluation. This means an activity which usually compares the results or benefits achieved in an activity with a specified problem, situation or resources used. The principal objective of evaluation is the achievement of change through creativity. This is the reason why the resistance towards the change is basically the greatest obstacle to evaluation (3).

The uses of evaluation could include the following: 1) improvement of the quality of services; 2) improvement in the allocation of resources; 3) improvement of the morale of the personnel. This latter means the disappearance of the so-called institutional neurosis and the increase of job satisfaction, which are facilitated by the increasing interest and understanding of one's own work by the health personnel and by the increasing feeling of achievement tied to this. Assessment as such already increases a person's understanding of what he is doing.

One of the important benefits of evaluative activities is learning. This is because the activity itself to a great extent is a form of continuing education. Another important benefit which will appear rapidly is the development of the information systems. Usually at the beginning of the assessment activities we soon find out that our routine data collecting methods do not enable us to collect information needed for the analysis and development of the

contents. The final benefits, of course, of evaluative activities in primary care will appear in the improvement of the health outcomes of the services (4).

Quality assurance in primary care

A specific form of evaluation is the assurance of the quality of care. The general principles are the same, only the methods and the terminology differ.

In this presentation I will not deal in detail with the various methods of quality assurance which have evolved during its development from the medical audit of the early 1950s to the tracer methods and health accounting projects of the present time. It suffices to say that this is an area of growing importance to the general practitioner in most countries. As the role of the general practitioner is expanding from the treatment of the common illness in the community more and more towards health promotion and prevention the demands on the general practitioner continuously grow. In order to be able to meet the demands and also to prove himself to be key person in primary health care the general practitioner should be able to show that he is also concerned with the quality of what he is doing. He needs to have a critical attitude and at the same time curiosity towards the work he is doing.

As mentioned earlier, the development of the contents of the activities is one of the central issues at the moment in primary health care in Finland. In this activity the main topic for various health professions is the study of their own work. It is only through the analysis and research of one's own activities that the development and the improvement will be possible (5).

The real importance of this becomes clear when we state that almost always when we start objectively to look into the contents of an activity in health care, most interesting findings will result. It also should be pointed out that the study of one's own work does not require the knowledge of the advanced statistical or other research methods. In most cases it is very simple. What is rather needed is the curiosity and the ability to think critically (6).

MATERIAL AND METHODS

We are at the moment writing a report on a study we conducted a few years ago in a rather typical Finnish health centre. With regard to its size and

population base it represents closely the average health centre in the country. The population base is about 14 500, the number of permanent positions for doctors at the time of the study five (7).

The objectives of the study included among other things the study of the quality aspects of the health centre doctor services. In this we included also the continuity and coordination of care. However, since the study was retrospective, the information basis for the assessment were the medical records, which can be considered a limitation.

The data were collected by first recording all the persons visiting the health centre doctors during one year, by recording each day their names and social security numbers. These data were then fed into the computer to form a person based file, which finally included 8 701 persons who had made 22 500 visits. Of these persons, a systematic sample by sex, alphabetical order of the family names and five year age groups was drawn giving a sample of 2 480 persons, whose medical records and other medical documents were then abstracted to specially planned and pretested forms, from which the data were fed into the computer and processed. Only the face to face contacts with the health centre doctors in their surgeries were included. Visits to school health services, occupational health or to maternity and well-baby clinics were not included.

The unit of analysis could be the visit, the episode of care, the persons visiting, or the doctor, or any combination of these. Eleven specific reasons for visit were also studied. For children 0-4 years old these included otitis media and respiratory infections, for working age population 25-49 years old the problems included sore throat, respiratory infections, upper abdominal pain, low back pain, hypertension, vaginitis, urinary tract infections and diabetes mellitus. For the age group 65 and over the problems studied were hypertension and diabetes mellitus. Since it was not known how many of these conditions would be present in the sample it was drawn so that from these age groups every third person was included compared with every fourth from the other age groups. Besides the main form filled from every person in the samples, a special form was used for data collection from these so-called analysis groups. The information in this form could be linked with the information in the main form. The "response rate" was high since we were able to find 83.5% of the medical records for the study.

RESULTS

The basic characteristics of primary care include the accessibility, availability, continuity, coordination, and comprehensiveness. When we studied the use of the health centre doctor services the results indicated that about 92% of the persons who saw the doctor in his office during the year were exclusively treated in primary care; 87% were treated on ambulatory basis and about five per cent were taken at least once to the health centre hospital by general practitioner. This situation stresses the importance of what the general practitioner is doing and how he is doing it.

Next, we studied the continuity of care which is one of the structural elements of importance to primary care. The provider specific continuity was used as the indicator. The measure we used included two widely used continuity indices, the K and COC. According to both of these, the continuity of care was rather low: K 41.8%, COC 0.53. (The range for the possible K values 0-100 and for the COC 0-1.) The referral letter return rate from the secondary sources of care proved also to be surprisingly low (about 57% from the district general hospital) indicating a deficiency in the coordination of care. When the coverage of the health centre doctor office services was studied, the results indicated that about 13% of the health centre district population had used 50% of the doctor visits. These and similar other findings suggest that there is plenty of room for improvement in the structural part of the general practitioner services in this health centre district.

Next, I will go to the context of the medical records and the contents of work of the general practitioners. I stress again that basically this is not a difficult task. In this we looked at the provider part of the care process and were interested in what the provider of care actually did. The consumer part of the process is outside of this, since no conclusions of that part can be drawn from the medical records. We recall that the records were abstracted two years after the visitors were identified.

In this part of the study we looked at the contents of care in the specific problems listed earlier (i.e. otitis, respiratory infections, sore throat, low back pain, upper abdominal pain, hypertension, diabetes and urinary tract infection). In the following I will present some of the results of these analyses.

Do the doctors describe findings of the clinical

Table I. The process of care. The content of medical records in general practice

	Age			
	0-4	25-49	65+	Total
<i>Treatment recorded</i>				
No	34 (10%)	100 (16%)	74 (16%)	208 (15%)
Yes	307 (90%)	525 (84%)	378 (84%)	1 210 (85%)
Total	341	625	452	1 418
<i>Findings recorded</i>				
No	28 (8%)	134 (21%)	37 (8%)	199 (14%)
Yes	313 (92%)	491 (79%)	415 (92%)	1 219 (86%)
Total	341	491	452	1 418

examinations they perform and if they do, how often? The results indicated that in about 86% of cases there was an adequate description of the findings.

Do the doctors indicate which treatment they prescribed or recommended? In 85% of cases the suggested treatment could be found from the records (Table I).

We next move to the area of treatment control in hypertension and diabetes, which from the patients' point of view are important. In order to get a good picture of what was going on, we included in

Table II. Treatment control of patients in general practice with hypertension between 25 and 49 years old.

Patients who visited at least three times during the year or were on treatment at the beginning of the year

Sample size	Blood pressure readings on last visit.	
	≥100 mmHg	≥105 mmHg
20	13 (63%)	6 (26%)

Difference between first and last readings: *t*-test: *t*=1.34, *p*≤0.24 NS.

Table III. Treatment control of patients in general practice with hypertension and 65+ year old.

Patients who visited at least three times during the year or were on treatment at the beginning of the year

Sample size	Blood pressure readings on last visit.	
	≥100mmHg	≥105 mmHg
58	29 (50%)	14 (23%)

Difference between first and last readings: *t*-test: *t*=1.22, *p*≤0.22 NS.

the analysis patients who had visited at least three times during the year for these conditions or had been on treatment already at the beginning of the year. The results showed that in both of these important chronic conditions the level of treatment control seemed to be far from satisfactory (Tables II, III, IV). Especially interesting are the findings of no significant difference between the first and the last readings of the year with those patients who had visited at least three times. When we consider the prognosis of the patients it is important to notice that 63% of patients in age group 25-49 years had blood pressure levels of 100 mmHg diastolic or more, although they had seen the health centre general practitioner regularly during the year. Similar findings show for the older age group in both hypertension and diabetes. Somehow these and other results seem to indicate that not enough attention was paid to these findings or that their prognostic importance to the patient was not seriously considered.

Table V gives some indications of the treatment practice in children's otitis media. The sample in-

Table IV. Treatment control of patients in general practice with diabetes mellitus and 65+ years old

Patients who visited at least three times during the year or who were on treatment at the beginning of the year

Sample size	Fasting blood sugar measurement on last visit		
	≤9.9	10.0-11.9	≥12.0
26	16 (62%)	4 (15%)	6 (23%)

Difference between first and last readings: *t*-test: *t*=1.33, *p*≤0.75 NS.

Table V. *Treatment in general practice of children between zero and four years old with otitis media per 1 000 patients 0-4 ys with this problem*

N=62 boys and 27 girls. First visits: 55

	Boys	Girls	Total children per 1 000 patients
Fever indicated	48	-	34
Paracentesis ^a	129	74	112
Urgent referral	48	-	34
Non-urgent referral	32	37	34

^a Paracentesis during the first visit: 15%.

Table VI. *Treatment in general practice of patients between 25 and 49 year old with antibiotics because of pharyngitis*

Relationship between diagnostic testing and antibiotic treatment

Tests	Antibiotics		Total
	No	Yes	
No	12	62	74
Yes	3	10	13
Total	15	72	87

$X^2 = 0.04$, $p < 0.84$.

Table VII. *Sick leave and objective body temperature in patients in general practice between 25 and 49 years old with respiratory infections*

Sick leave	Fever recorded		Total
	Yes	No	
Yes	6	61	67
No	6	143	149
Total	12	204	216

cluded 62 boys and 27 girls between the ages of zero to four years. Two interesting findings came out from this: the low paracentesis rate (15%) and the low rate of the indication of fever objectively measured (3.4%). Table VI shows the association between the laboratory testing and antibiotic treatment in the case of sore throat for the young working age population. The results suggest no signifi-

Table VIII. *Preventive activities in general practice assessed by the proportion of patients without hypertension whose blood pressure was measured at least once during one year in per cent*

Age	M	F	Total
16-24 ys	47	33	40
25-49 ys	27	29	28
50-64 ys	43	50	47
65+ ys	68	65	66
Total	40	40	40

Table IX. *Doctor continuity in primary care of subsequent visits by patients 25 to 49 years old with respiratory infections*

Repeat visits	Doctor	
	Same	Different
41	17 (41%)	24 (59%)

Total visits in the sample 216, of which 175 first and 41 repeat visits.

cant association. An interesting finding is shown in Table VII, where we have studied the association between the sick leave certificate and fever in respiratory infections for the young working age patients. One would think that there could be a direct relationship. These results, however, suggest that there is an important direct association between the absence of fever and the sick leave. There are, of course, at least three possibilities for this finding: 1) The temperature was measured but not recorded; 2) the temperature was normal but the patient was clinically so sick that sick leave was written; 3) the temperature was not taken at all, which indicates a deficiency in the clinical examination process.

In order to be able to conclude from these results, one should observe the actual situation, what really is being done. This latter is one of the important messages from the results shown. Something differs from what you expected and that should make you interested in finding out what really happens and if there really is a deficiency to identify and to correct it.

One way of looking at the quality is to study the preventive actions. For example, in Table VIII we have recorded the rate of blood pressure measurements from patients who are not known to be hy-

pertensive. It should especially be noted that the blood pressure measurement rate is the lowest in the young working age group, which should be the real risk group.

We already showed indications of low continuity of care expressed as indices. Those results are supported by the findings in Table IX where we look at the continuity of subsequent visits. Only in 41 % of cases the same doctor was seen during the first and the subsequent visits.

That quality of the general practitioner's work is an important area to study comes nicely out from the case study below in which we have placed results from a study of the record of a 65-year-old male patient. This history included two health centres and a total of 15 doctors.

A CASE HISTORY

Sixty-five-year-old man. Period: (A and B) 6 March 1977–26 Aug. 1980. Two health centres, 5 permanent GPs in each. Thirty-four visits to 15 different doctors (10 in A, 5 in B). Reason: clear abuse of sedatives and tranquillisers. Result: continuous prescription and prescription of these drugs in large amounts regardless of what was written in the patient medical record or the reason for the visit. Due to: absence of the doctor–patient relationship, lack of communication skills and communication between doctors.

The details of care given were abstracted from

medical records which were nicely typed and easily readable. In both of these health centres there were five permanent doctors, the rest were locums. The message of this case history should be self-explanatory.

ACKNOWLEDGEMENT

The study was supported by The Research Institute for Social Security of the Social Insurance Institution of Finland.

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