

Quality Improvements in General Practice

General practitioners as advisers and coordinators in hospitals

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Introduction

In all European healthcare systems there is a need for better cooperation and coordination between primary and secondary care. An increasing emphasis on the provision of care in the primary sector has been a feature of developments within most European healthcare systems. Changes both to patterns of care delivery and to the presentation of ill health have had a profound impact on primary health care. These include considerable reductions in the duration of stay in hospital for many interventions; the transfer of care for many conditions either wholly or in part from the secondary to the primary sector; and an increasing number of patients who receive care that is "shared" between hospital services and primary care. Medico-technological innovation has enabled an expansion and greater use of hospitals' ambulatory care facilities in which many complex interventions are now done with increasing ease and speed. Alongside the changes in the technology of healthcare patients' problems are now increasingly characterised by a mixture of somatic and psychosocial complaints and requirements.^{1 2}

Amidst all the change in the technology of care there is a risk that the crucial task of assessing how we can work best together to enable our patients to receive the information and support they require and not to feel "lost" within the complexities of the healthcare system may get forgotten. It is a task that is dependent on people rather than technology. There is a need, too, for the development of models of effective shared care that emphasise good inter-professional communication and include precise descriptions of the distribution of tasks between different healthcare providers.¹ Box 1 shows the role of the general practitioner (GP) in the Danish health care system.

Until now most work on the coordination of care between the primary and secondary care sectors has focused on planned discharge schemes. These projects may have improved the quality of the discharge process but were not designed to have any notable effect on other, crucial, elements of communication—for example, the referral process or on the overall process of coordination between hospitals and general practice.^{2 3} During the past five years in Denmark we have developed a method of improving communication and

Denmark has 5.5 million inhabitants, 3354 GPs, and 82 hospitals (defined as hospitals with beds and acute referrals in at least one of the major specialties). Denmark is divided into 16 regions (counties), each with 200 000 to 600 000 inhabitants, except for one island county that has 50 000 inhabitants (Bornholm). Danish GPs, as in many other countries, act as gatekeepers for specialist opinion and hospital care. They work as individual, independent contractors to the regional health insurance, the authority that is also responsible for running hospitals. Thus, the whole responsibility for the individual primary care setting rests with the GPs. He or she owns the clinic, employs the staff, and pays the costs. The income is based partly on fee for service and partly on capitation based on list size. More than 97% of all Danes are registered on GPs' lists. They do not pay anything themselves to the GP. Danish GPs usually work singly or in small partnerships, typically two to four doctors and work with an average of 0.75 auxiliary staff for each doctor. Danish GPs refer only about 10% of all attendees.

Box 1 General practitioners in the Danish healthcare system.

cooperation between general practice and hospitals that is simple, seems to be effective, and has spread quickly within the Danish healthcare system.

OUTLINE OF THE SYSTEM

Briefly, the approach is based on GPs employed by hospitals working as part time advisers who inform hospital departments about primary care and provide a link between the two sectors. Their role is to encourage and to improve the exchange of information, cooperation, efficiency, and quality of communication between hospitals and general practice. The GPs typically work with one of the larger hospital departments such as gynaecology or general surgery and connect that department with all the local GPs. A few GPs are also employed to coordinate the work of the advisers and are responsible for one or more hospitals. In some counties, one responsibility of the adviser in chief is coordination between GP hospital

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STEP 1

Technical quality control of the GPs' own laboratory equipment and routines was investigated. The hospital laboratory sent standardised tests to the GPs, which they performed in their own laboratories. Later, the hospital posted the correct results. There were problems with test validity in several fields, especially in the measurement of haemoglobin and blood glucose. An information campaign was launched, aimed at GPs and their staff.

STEP 2

The hospital laboratory evaluated the technical quality of the GPs' equipment and gave advice on renewing their laboratory equipment.

STEP 3

A system was set up to give better service to GPs about ordering tests from the hospital laboratory instead of, or as a supplement to, tests in the GP's own laboratory. This included good methods for sending blood samples to the laboratory from general practice, and for quick receipt by the GP of test results.

STEP 4

Cooperation was established, not focusing on technical quality, but on appropriate ordering and interpretation of tests (content quality). This implied different continued medical education initiatives, including visits to the hospital laboratory and development of miniguide-lines on good use of different types of test.

STEP 5

The system was copied and adapted for other functions in hospitals—for example, for radiographic and microbiology departments. It was later introduced in departments with close cooperation with GPs for their inpatients.

Box 2 Quality improvement in GPs' use of laboratory tests.

advisors at all hospitals in a region, the regional association, the college of GPs, the regional health authorities, and the local hospitals. They are involved in planning care for a region—for example, diabetes care, cervical smear campaigns, or the recognition of depressive illness. Most of the GP coordinators also act as advisers to hospital departments.

This approach started in one county, was taken up regionally, and then spread to the rest of Denmark and to other parts of Scandinavia. Now in Denmark about 8% of GPs are employed by hospitals as part time advisers or coordinators. Few innovations have spread so fast within the healthcare system. The aim of this paper is to describe this development of this system, focusing especially on the needs, tasks, working methods, and the probable effect on the quality of care. We also discuss lessons that we have learned.

History: from a simple idea to nationwide diffusion

The origins of this project were discussions between a hospital consultant working in a department of clinical chemistry in a university hospital (Professor Mogens Hoerder) and a GP (one of the authors, PG) about how to improve both the technical quality of tests performed in GPs' own laboratories and the appropriateness and the interpretation of those tests. The link between PG and the hospital was the first example of a GP effectively acting as an advisor to a hospital department. From the combined efforts that resulted from a GP working with a hospital department a comprehensive process of quality improvement in the use of laboratory tests by GPs in the county of Funen was produced (box 2). This process developed through several stages each of which was dependent on clear channels of communication between primary and secondary care sectors and at each stage required coordination, cooperation, and communication, and crucially the involvement of hospital administrators and managers. It resulted, undoubtedly, in a global improvement in the quality of all aspects of the use of laboratory tests in general practice (box 2).⁴

After the clear success of use of a GP to coordinate the expertise of laboratory services with the needs of GPs, the University Hospital in Odense, Funen County looked at possibilities of extending this simple but apparently effective approach to other hospital departments. They invested in this approach by using a GP (PG)—at first part time and later full time—to set up and coordinate a general practice advice system in other hospital departments starting with those that had most direct contact with GPs such as radiology and general medical ambulatory care and later on to include all departments that deal with direct referrals from or discharge to primary care. Since 1993 all hospitals in the county of Funen have used GP advisors and 38 GPs—almost 14% of all the county's GPs—are department advisers and three GPs are hospital coordinators (table).

FACTORS THAT HELPED PROMOTION OF THIS IDEA

Diffusion of this way of coordinating the work of primary and secondary care was not the result of a large scale national initiative but through recognition by clinicians and others that it met a need. However, the support and commitment of the Danish College of General Practitioners was necessary to extend the initiative nationally. And importantly the GPs' union negotiated a payment system that compensated GPs financially for the time spent working as advisors. The development was also helped by a parallel process of rationalisation within the Danish healthcare system that aimed to promote a greater involvement of the primary sector in decision making. Also there was pressure from our patients to improve coordination between primary care and hospitals and for shared care.

Number of hospital coordinators and department advisers per county and relative number of hospitals with at least one adviser (the last column shows the number of GPs who were coordinators or advisers per 100 GPs in the county)

County	Coordinators (n)*	Advisers (n)	Index of hospitals with advisers	Index of coordinators and advisers per 100 GPs
Copenhagen Municipality†	5	40	1	13.4
Frederiksberg Municipality†	1	10	1	21.6
Copenhagen County	3	8	1	3.3
Frederiksborg County	2	3	1	2.3
Roskilde County	1	12	1	9.9
West Sealand County	0	8	0.7	4.4
Storstroem County	2	14	1	9.6
Bornholm County	1	3	1	11.8
Funen County	3	38	1	13.6
Southern Jutland County	1	5	1	3.8
Ribe County	1	15	1	11.4
Vejle County	3	27	1	14.3
Ringkoebing County	1	15	1	9.6
Aarhus County	1	19	0.9	5.1
Viborg County	2	26	1	19.1
North Jutland County	1	11	1	3.8
Denmark (all)	28	254	0.98	8.4

*A coordinator may also work as department adviser.

†Each of the two municipalities in the capital city also constitutes a county.

LOCAL SYSTEMS TO SUIT LOCAL CIRCUMSTANCES

In Denmark most decisions about healthcare planning are taken within each county and each county has developed a somewhat different approach to the organisation of GP advisers. For example in some the coordinators work with just one hospital but in others they are responsible for coordination throughout a region. In some counties GP advisers are employed and paid by the individual hospitals but in others they are paid directly by the county health authorities. In Storstroem County, regional coordination is led by a department of development, quality assurance, and coordination in health care with a former GP (one of the authors, PBJ) as full time chief. It is expected that more counties will follow that line in future.

All counties now have coordinators or advisers although there are differences in the development of the system between counties—many counties are still at an early stage of implementation. Almost all (98%) of the hospitals in Denmark have at least one adviser and some hospitals have a GP adviser working with most departments. The GP advisers are employed for four to eight hours monthly, and coordinators for eight to 24 hours monthly. In one county over one fifth of GPs are employed as advisers.

Tasks and working methods

The overall function is to enhance exchange and coordination of information, to ensure good communication channels between the hospital departments and the GPs, and where appropriate to link with the GPs' regional continued medical education system (CME). Tasks include reducing duplication of work—such as laboratory tests being done both by GPs and by hospital outpatient departments—ensuring that necessary investigations are done before referral to secondary care, and targeting distribution of knowledge about new and outdated practice and procedures. Advisors thus play a central part in the process of implementing innovation among local GPs.

There is no single common job description for GP advisers for the whole country, but box

3 outlines the job description of GP advisers in one county, which is broadly similar to others. Box 4 gives some examples of advice and activities that are dealt with by GP advisers.

EXCHANGE OF INFORMATION

An important part of the advisory system is promoting exchange of information. Of course, this includes general dissemination of information about new tests or procedures, but also includes discussing specific care related problems with individual GPs. For example, GP advisers have a role in ensuring that GPs' referral letters contain sufficient information to plan initial hospital investigations. This may lead to direct contact between an adviser and a GP. But advisers must also ensure that information from hospital to the GP is appropriate and timely—they must see that discharge letters are

OVERALL

- To ensure that a patient evaluates his contact with the healthcare system as better and more coherent than before. This concerns the whole period from the first visit to the GP to the completed treatment and care in hospital and in general practice.

SPECIFIC

- To enhance overall cooperation between hospital and general practice
- To enhance a medically coherent treatment between hospital and family practice
- To facilitate the giving of information to patients and GPs about what the hospital can offer
- To give information about possibilities in hospital and in general practice
- To inform GPs about the hospitals' strategy and healthcare plans and involve GPs in this process
- To reduce the workload in hospitals by improving referrals, coordinating pre-hospital investigations, delegating as many tasks as possible to the GP, and improving coordination between hospital outpatient departments and GPs
- To enhance the optimal use of resources
- To improve decisions on referrals to hospitals
- To ensure better communication within acceptable timescales between hospitals and GPs and contribute to the development of electronic exchange of information
- To participate in the development of local guidelines and protocols for good clinical practice
- To participate in giving information on new procedures and technologies

Box 3 An example of a description of aims of the GP hospital adviser system in Storstroem County.

- Improving information in referral and discharge letters by setting and communicating minimum standards
- Evaluation of achievement of agreed minimum standards including agreed time limits—for example, for sending discharge letters
- Information to GPs about new and obsolete procedures at a department
- Information about necessary prereferral investigations
- Avoidance of double testing through defined task distribution
- Information and discussions with hospital physicians about what can and cannot be done in primary care
- Development of guidelines, protocols, and flow charts for specific problems based in departments and counties
- Initiatives to coordinate between different hospital departments and different specialties on specific procedures and problems related to cooperation with general practice to reduce the number of different procedures to be used in primary care
- Communication of such plans to individual GPs and to the GPs' continuing medical education system, and sometimes to the public media
- Concrete planning of a GP user friendly development of informatics at department, hospital, and regional level
- Discussing standards with GPs and their organisations about development of standard protocols for interfaces between different electronic information systems
- Making contact with individual GPs when necessary for specific reasons to improve quality of case related work (cleaning up the bad apples—for example, when individual GPs regularly send bad referral letters to a department)
- Discussions with healthcare authorities and doctors' organisations on strategic regional developments of specific areas in health care.

This includes discussions on how to avoid unacceptable waiting lists and how to adapt the need for hospital care or the capacity at hospital level. This may involve information to and pressure on GPs with respect to their threshold for referral and their acceptance of participation in different follow up procedures after discharge from hospital that can contribute to reducing the capacity problems of the hospital departments.

Box 4 Examples of problems dealt with by advisers and coordinators.

sent promptly, typically five days, after discharge and have relevant and practice oriented content. This aspect of the work of GP advisors has been successful in most regions, and previ-

ous never ending complaints by GPs about late arrival of discharge letters has almost stopped. However, although we and others are convinced that there has been a considerable improvement in discharge communication there has been no systematic evaluation to show this widely perceived success.

IMPROVING THE RELEVANCE OF HOSPITAL SERVICES

Advisers work with hospital specialists to ensure that the provision of hospital services and the range of investigations are applicable and adaptable to the needs of GPs and their patients. Experience has shown that some hospital specialists have scant knowledge of both the possibilities and limitations of GP care. Most letters and other documents from hospitals to GPs now go via the adviser. Not surprisingly, there has been a considerable improvement in the relevance to general practice of the information from the hospitals.

INFORMATICS

Information systems that link general practice with hospitals are developing rapidly in many counties, and the contribution from GP advisers is crucial for ensuring a feasible and GP friendly development. In two counties (Funen and Storstroem) a regional GP oriented, computer based information system has already been set up. The GPs with computers in their practice (now some 70%–80%) receive monthly updated electronic information letters, and have instant access to necessary information about procedures, waiting times for appointments, etc.

LIAISON WITH REGIONAL ADMINISTRATION

Finally, GP advisers, and especially coordinators, are liaison officers between hospitals and regional health authorities, and contribute to discussions about organisational aspects of the regional health care—for example, capacity planning, planning for the introduction of new technology, and suggestions for information related to the public.

More and more counties have developed committees of hospital doctors, GPs, and administrative staff who together develop explicit plans and protocols for the care for important healthcare problems. Part of this shared work includes agreeing the distribution of care between primary and secondary care and a framework for referrals and agreeing plans for public information about health problems—such as sexually transmitted diseases, the value of cervical smears, and antismoking information. The GP coordinator contributes to this and helps ensure that GPs with a special interest in areas being discussed take part.

Process of coordination

Meetings and cooperation with senior physicians and consultants at department and hospital level are an essential part of the work of the advisers. This allows development of shared strategies and identification of mutual problems. All local GPs are regularly updated

with names of all advisers and coordinators in their region, and thus know whom to contact for either specific issues or general problems. The GP advisers use many different approaches to enhance communication between their GP colleagues and the hospital departments. These include involvement in the development of departmental guidelines or protocols and development of information leaflets for patients. In the past GPs have indicated the difficulties that arise when the different hospitals with which they work use different guidelines for management of common conditions. Now many of the GP coordinators have begun to work with all hospitals in their region to encourage a move from department or hospital based guidelines towards regionally based guidelines and flow charts.

There is also the opportunity for GP advisers to influence skills, knowledge, and attitudes through the local continuing medical education curriculum. The GP advisers may use the regional continuing medical education curriculum to discuss good clinical practice and to indicate how to use specific investigations and get the most out of the services offered by hospital.

Improvement in delivery of service

There is widespread agreement that this system has resulted in improvements in the delivery and in the quality of health care. That the system was taken up so quickly suggests that it was meeting a widely felt need. But there was no formal pilot study, and no region has been able to slow progress to put into place any formal evaluation of either cost effectiveness or of the impact on the quality of care. This is unsatisfactory from the point of view of health services research and for quality development.⁵ So, we are only able to describe a system in which the main indication of success is its fast acceptance and implementation backed up by many case stories.

Many reports from local groups indicate improvement—for example, with the use of laboratory tests by GPs, reduction in interpractice variation, and reduction in referral to hospital. There are reports that indicate that this system has enabled earlier discharge from hospitals, because the hospitals know more exactly what follow up help they can expect from GPs. There are also reports of improvement in the care of people with cancer with better relief of pain and greater use of home visits and community support services. Other areas of improved care, attributed to the system of GP advisers, include better management of people with newly diagnosed chronic problems such as rheumatoid arthritis and cancer. However, it is perhaps too early to evaluate these aspects systematically.

AN EVOLVING SYSTEM

There is evidence that the roles of GP advisers and coordinators are evolving and they are becoming more proactive. Initially most focused on the development of guidelines on management of specific problems, symptoms, or diseases, and provided GPs with descriptions of the services currently offered by hospi-

tal departments—for example, the recommended medical treatment, training protocols, and follow up of hospitals' postmyocardial infarction programmes. Recently many have started to implement specific procedures—often related to specific problems and diseases, in a systematic way, often involving the local continuing medical education and quality improvement groups. For example, developing programmes for postmyocardial care that were put together by GPs working with cardiologists.

There now are over 300 GP advisers in Denmark. And they, too, have their training and development needs. They met together for the first time in January 1997 to promote the exchange of ideas and to discuss the need for evaluation of new initiatives. Annual meetings and regular national courses, especially for new advisers and coordinators, are now planned.

Lessons learned

Motivation, particularly within hospital departments, has been the key to setting up this approach to improving the communication and coordination between primary and secondary care. In many hospitals the decision to employ GP advisers was made by the medical hospital manager (in Denmark each hospital has three managers, an administrator, a nurse, and a doctor) and in some it was the more distant regional manager. But we now recommend that the drive should come from within hospital departments. Ownership by clinicians should be established at the beginning.⁶

We have noted a wide variation in the enthusiasm shown by hospital doctors for this work—often related to their primary sphere of specialist interest. University departments working in narrow research fields unrelated to health services research, are often the least motivated. But, by involving GPs well known to and respected by individual departments some of this initial reluctance lessened.

Involvement of hospital departments in appointment of GP advisers is important. But others involved in these appointments—that are advertised the medical press—have been regional representatives of the GPs' trade union (local medical association) and the Danish College of General Practitioners. This ensures commitment and ownership within the wider network of GP opinion leaders and is important for continued support and involvement of the target group of local GPs after the initial optimistic phase.⁶ Ideally, GP advisers should have proved ability to communicate well with colleagues; have experience of delivering continuing medical education; and have some experience of the medical specialty with which he or she will be liaising. It is important that GP advisers remain true representatives of the GPs and do not become department oriented "minispecialists".

Reflection

Even without a formal evaluation we think that in view of the rapid uptake and acceptance of this system it is worth reporting, as it may have relevance to quality improvement in other

European health systems. And not only are over 8% of all Danish GPs employed as GP advisors to hospitals but in one year a similar system of GP advisors has developed through most of the Swedish health system (Leif Persson, Sweden, personal communication). Shared care programmes that rely on coordination and operation between primary and secondary care have been shown to improve the effectiveness and the quality of health care.^{1 3 7-9} Extrapolation from these studies would suggest that similar effects on the outcome of health care for patients may have been found from an evaluation of our system. We must stress that this is supposition and we have no data from a systematic evaluation to use as a basis of a cost-benefit analysis.

Setting up a system to improve coordination and communication at the primary-secondary care interface was a response to a need perceived by people working in both sectors. But its development and uptake was probably helped by the coexistence of some hard economic constraints placed on hospitals. In Denmark, there has been little or no increase in expenditure on secondary care in real terms for several years. And, as some healthcare costs are increasing at a rate greater than inflation, cuts in some services have been necessary to allow introduction of technological innovations in others. According to the Organisation for Economic Cooperation and Development statistics Denmark is among the five cheapest healthcare systems in Europe (together with the United Kingdom) and has had nearly no relative growth in healthcare costs for 10 years.¹⁰ Most medical hospital managers decided to promote this new system at a time of financial shortage, and this suggests that they perceived that improving coordination between primary and secondary care would be a cost effective move. A recently published paper concluded that about 10% of admissions to general hospitals might be suitable for alternative forms of care,¹¹ and if primary care is to absorb these, clear and efficient communication between the two sectors will be essential.

Two new initiatives within Danish general practice are likely to emphasise further the impact of effective coordination between primary and secondary care and quality improvement. Continuing medical education for general practitioners is being reorganised so that all GPs are involved in small continuing medical education groups or quality circles. Furthermore after agreement about a national framework for quality development in general practice each county is putting forward local quality initiatives that fit in with the National framework.¹² The three initiatives—the GP coordinator or adviser system, the new approach to continuing medical education, and the quality development programme—cover many similar areas and formal cooperation is likely to promote development in each.

For the future we aim to plan any changes and developments more rigorously and include

description of targets and tasks so as to enhance the continued success. We plan to organise administrative and management courses for new GP advisers that will include a foundation course in principles of health services research and health economy research. These skills will be important for future evaluation. For although this project took off too quickly to allow us to undertake a systematic evaluation, we are keen that any further developments should be evaluated so that any impact on the quality of care can be documented and that we can understand the impact of the different elements.

Few innovations have spread so fast within Danish health care as this one has. A combination of particular coexisting circumstances—a need perceived by clinicians for better coordination between primary and secondary care, heavy economic constraints, concern about quality improvement, and an overwhelming flow of new information—in an increasingly technologically complex healthcare system—probably provided necessary preconditions for the almost immediate uptake of an initiative that just seemed to make good sense. This simple effective way of coordinating primary and secondary care may turn out to be one of the most important changes in our healthcare system for decades. Together with changes in continuing medical education and development of quality improvement initiatives this is likely to be one of the key factors in the development of a comprehensive well coordinated regional healthcare system in which policy decisions are not only made explicit but result from exchange of information between primary and secondary care and reflect progress toward the implementation of shared care.

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