

Development of Out-of-Hours Primary Care by General Practitioners (GPs) in The Netherlands: From Small-call Rotations to Large-scale GP Cooperatives

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Background: Over the last 10 years, care outside office hours by primary care physicians in The Netherlands has experienced a radical change. While Dutch general practitioners (GPs) formerly performed these services in small-call rotations, care is nowadays delivered by large-scale GP cooperatives. **Methods:** We searched the literature for relevant studies on the effect of the out-of-hours care reorganization in The Netherlands. We identified research that included before- and after-intervention studies, descriptive studies, and surveys. These studies focused on the consequences of reorganizing several aspects of out-of-hours care, such as patient and GP satisfaction, patient characteristics, utilization of care, and costs. **Results:** Various studies showed that the reorganization has successfully addressed many of the critical issues that Dutch GPs were confronted with delivering these services. GPs' job satisfaction has increased, and patients seem to be satisfied with current out-of-hours care. **Discussion:** Several aspects of out-of-hours care are discussed, such as telephone triage, self referrals, and future expectations, which should receive extra attention by researchers and health policy makers in the near future.

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Over the last 10 years, the organization of out-of-hours primary care in The Netherlands has experienced a radical shift from general practitioners (GPs) providing care to patients in small-call rotations to a situation in which out-of-hours care is organized in large-scale GP cooperatives. Out-of-hours care is defined as care delivered outside office hours—from 5 pm to 8 am on weekdays and from 5 pm on Friday to 8 am on Monday. Dutch primary care physicians, who are all GPs, recently formulated a renewed mission statement in which the 24-hour responsibility of GPs for their patients was acknowledged as one of the cornerstones of general practice.¹

This paper focuses on care delivered by GPs outside normal working hours. It gives an overview of the development of out-of-hours care in The Netherlands and describes the implications this has had for Dutch general practice.

Background

Historical Perspective

Until the 1960s, many GPs took care of their own patients during out-of-hours periods. As a consequence, GPs were on call most of the time. Subsequently, more and more GPs formed small-call rotations (generally five to 10 GPs) in which they performed out-of-hours care to each other's patients. At first, this only involved weekends,² but subsequently the evenings and nights on weekdays followed. This change in out-of-hours care provision was the first step to a less personal out-of-hours care provision.

When almost all GPs were joined in call rotations for out-of-hours care in the 1990s, another reform announced itself. Around the millennium, out-of-hours primary care was reorganized from small-scale call

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rotations into large-scale GP cooperatives, with generally 40 to 120 GPs taking care of populations ranging from 50,000 to 500,000 inhabitants. This reform had the intention of dealing with several substantial problems that had developed. The main problems were the growing dissatisfaction among GPs with former out-of-hours care, GPs' decreased personal commitment with these services, and an impending shortage of GPs in the future.^{3,4} Important factors leading to GP dissatisfaction were the workload accompanying these services, especially because after being on call (generally 19 hours per week), a regular day of work followed (about 50 hours per week), and the lack of separation between work and private life. In addition, some patient-related factors were also involved, such as increased inappropriate demand for out-of-hours care and demanding and aggressive behavior of patients.

International Perspective

The reorganization of out-of-hours care in The Netherlands was preceded by reorganizations in out-of-hours primary care in the early 1990s in the United Kingdom (UK)⁴⁻¹⁰ and Denmark.¹¹⁻¹⁴ The changes in out-of-hours care in these countries are very similar to those that occurred several years later in The Netherlands. In a way, one can say that the changes in out-of-hours care in the UK and Denmark have set an example for Dutch general practice. In countries like the UK and Australia, the trend away from GPs looking after their own patients at home during out-of-hours times started in the late 1960s with the use of deputizing services^{3,4} (commercial companies employing doctors to provide out-of-hours care).

During out-of-hours periods in the United States, many family physicians use a telephone answering service to answer patient calls.¹⁵ With regard to primary care pediatricians, many use nurse triage services to manage after-hours calls. In recent years, centralized after-hours call centers have been established and staffed by trained nurses who use algorithms to provide clinical advice, typically without physician consultation.¹⁶

Internationally, there is diversity in health care systems offering primary care to patients outside normal office hours.^{3,4,9,11,13,17} Upon reviewing the literature, we found seven common models that provide primary care to patients during out-of-hours periods. These are (1) GPs taking care of their own patients, (2) call rotations system (GPs within a practice or call rotation (generally five to 10 GPs) looking after their own patients during out-of-hours times), (3) deputizing services, (4) GP cooperatives (40 to 120 GPs taking care of populations ranging from 50,000 to 500,000 inhabitants in a non-profit making organization), (5) hospital emergency departments, (6) primary care centers (a center patients can attend on an ad hoc basis), and (7) telephone triage

and advice centers (where primary patients receive telephone advice during out-of-hours periods).

General Practice in The Netherlands

In The Netherlands, the GP is the first contact for people with medical conditions. In other words, the GP is the gatekeeper to most other primary health care professionals (physical therapists, speech therapists, etc) and to secondary (hospital) care.¹⁸

About 60% of the Dutch population is compulsorily insured with public health insurance funds. The government determines the coverage provided and the income-linked contribution that patients must make. People with higher incomes need to purchase private insurance. GPs are paid by capitation for treatment of patients who participate in public health insurance funds and by fee-for-service for treatment of those with private insurance.

To perform out-of-hours care in the former situation, full-time GPs received approximately \$5,491 (€4,538) per year, excluding the fee-for-service payments of privately insured patients. Since the reorganization, GPs are paid per hour on call. In general, this has slightly improved their financial situation.

The GP Cooperative

In 2005, more than 120 GP cooperatives in The Netherlands have been set up that cover more than 90% of the population. Most GP cooperatives are situated near or within a hospital but have not formally regulated patient flow in conjunction with the hospital or its emergency department. This means that patients with a medical problem during out-of-hours times can choose either to attend the GP cooperative or the hospital emergency department. There are no financial incentives for any particular behavior.

During out-of-hours periods, the Dutch GP performs telephone consultations and supervises triage assistants, sees patients at the GP cooperative, and performs home visits. Patients can access the cooperative through a single regional telephone number.

Most GP cooperatives require patients to contact the cooperative by telephone before attending (approximately 95% of all cooperatives). However, some cooperatives allow patients to attend the facility without prior contact. In addition, chauffeured cars are available for the GP who performs home visits. These cars are equipped with oxygen, infusion drip, and automatic defibrillation. The chauffeurs are trained to assist the GP.

Telephone Triage

The GP cooperatives in The Netherlands use telephone triage to prioritize patient treatment. During telephone triage the urgency of the patient's problem is assessed and a decision is made about the appropriate

action to be taken. This decision includes the options of giving self-care advice without seeing the patient, advising patients to visit their own GP the next day, referring patients to a GP at the cooperative, or ordering home visits. At most Dutch GP cooperatives the telephone is staffed by triage nurses (80% GP nurses and 20% hospital nurses). The triage nurse is supervised by a GP, who can be consulted in case of doubt and who checks and authorizes all calls handled by the triage nurses. At all GP cooperatives in The Netherlands, triage protocols and guidelines are available to support the triage nurses.¹⁹ Some GP cooperatives use computer-based decision software.²⁰

Methods

Several studies have been performed to gain insight in different aspects of out-of-hours care. We searched the literature on Medline and PubMed for relevant research in this field. With respect to the consequences of the Dutch reform, we mainly focused on studies from The Netherlands. Therefore, we also searched the Dutch family medicine journals for relevant literature. We identified research that included before and after intervention studies, descriptive studies, and surveys. These studies focused on the consequences of reorganizing out-of-hours care on several aspects, such as patient and GP satisfaction, patient characteristics, utilization of care, and costs.

Results

Effects of Out-of-hours Primary Care Reorganization

Research has shown that GPs experienced a reduced workload with the introduction of the new GP out-of-hours organization compared to the former call-rotation system.²¹ Moreover, job satisfaction also increased, and the total number of hours on call has been reduced from approximately 19 hours per week to 4 hours per week. Other factors that had been formerly identified as problematic, such as the lack of separation between work and private life and the frequency of shifts, have also shown positive improvements.²¹

It is interesting to note that GPs experience fewer problems with demanding or aggressive patients. These problems may have shifted to the triage nurse, who is the first person of contact of the GP cooperative for most patients.²² But, patients seem to be satisfied with current out-of-hours care by the new system's GPs.^{23,24} However, patients receiving only telephone advice reported being less satisfied than those attending the GP cooperative or receiving a home visit.²³ The latter finding is consistent with results from similar studies performed in the UK and Denmark.^{7,11,12,25,26} In addition, patients have also reported not being very satisfied about the current organization of out-of-hours care.²⁴ Unfortunately, there are no studies describing the effect

of the Dutch out-of-hours care reorganization on patient satisfaction. However, Danish studies have shown that patient satisfaction significantly dropped after changing the system from call rotations to GP cooperatives but seemed to improve several years later.^{11,12}

Previously, GPs performed relatively more home visits and consultations at their practice than they do currently. Formerly, approximately 16% of all patient contacts consisted of home visits, and 48% were consultations at the GP's practice.²⁷ Only 36% of all patient contacts were telephone consultations. Currently, only 10% of all contacts are home visits, and 36% are consultations at the GP cooperative. In contrast, the share of telephone consultations has significantly increased from 36% to 52% at most cooperatives.²⁸ Also, although the after-hour GP cooperative system is meant for urgent cases, only 20% of the cases presenting to the GP cooperative are considered (by GPs) as urgent.²⁹

Discussion

This paper gives no answer to the question of which system is the most effective or the most appropriate. But, we have tried to give a thorough overview of what has happened during the last decade in The Netherlands in the field of out-of-hours care and to evaluate published research. Several issues remain unclear and need additional study.

Telephone Triage

Telephone triage by triage nurses is expected to be efficient, but it is not clear yet whether it is also safe. Specifically, because triage nurses can view the GP's patient files, they may not be able to adequately identify complex, rare, or urgent cases. Therefore, more and more GP cooperatives have installed a so-called supervising telephone doctor.³⁰ These GPs are more intensively involved with the telephone triage process. They check and authorize all calls handled by the triage nurses and can be consulted in cases of doubt.

Self Referral

In the Dutch health care system, all patients are required to have a referral from their family physician to use hospital services.¹⁸ A referral is also recommended, though not required, to be seen at a hospital emergency department. It has been found that large numbers of patients skip the GP and attend the hospital emergency department without referral.¹⁸ Reasons for skipping the GP cited most frequently by patients are convenience, lack of timely access to primary care providers, the belief that the medical complaint was very urgent, and the belief that radiography is necessary.³¹⁻³³ As a result, a substantial number (17%–57%) of patients attending the emergency department present with non-urgent or minor problems that could have been resolved by a GP.³⁴⁻³⁷ Reinforcing the GP gatekeeper function may

Table 1
Features of Call Rotations and GP Cooperatives in The Netherlands
(Old Versus New System of Out-of-hours Care)

<i>Call Rotations</i>	<i>GP Cooperatives</i>
5 to 10 GPs	40 to 120 GPs
Small-scale handling of 10,000 to 20,000 patients within distances up to 5 km.	Large-scale handling of 50,000 to 500,000 patients within distances up to 20–30 km.
Service delivered from small private practices throughout the city or region.	Mostly situated near or within a hospital.
Access daily from 5 pm to 8 am. On the weekend from 5 pm on Friday to 8 am on Monday.	Access daily from 5 pm to 8 am. On the weekend from 5 pm on Friday to 8 am on Monday.
Access via the patients' own GP's telephone number.	Access via a single regional telephone number.
GP uses own car with standard equipment.	Chauffeurs in recognizable GP cars, which are fully equipped (eg, oxygen, infusion drip, automatic defibrillation).
Use of written patient records for communication between GPs.	ICT support, including electronic patient files, electronic feedback to GPs, and online connection to the GP car.
GP or his/her spouse answering the telephone.	Triage nurses on the telephone (ie, GP nurses or hospital nurses).
A mean of 19 hours on call per week.	A mean of 4 hours on call per week.

GP—general practitioner

ICT—information and communication technology

have significant effects on hospital emergency care utilization. Studies have shown that patients with minor injuries or primary care problems attending the hospital emergency department without referral can be treated safely and at lower costs in primary care.^{36,38,39}

The GP as Gatekeeper

Only a few Dutch GP cooperatives are located at the site of hospital emergency departments, and they see all patients attending the emergency department without a doctor's referral.⁴⁰ The GP selects those patients requiring specialty care and refers them to the hospital emergency department when necessary. Patients with only minor problems are taken care of by the GP. Patients brought in by ambulance bypass this system.

An important motive to join primary and emergency care is to improve GPs' grip on patients skipping primary care and attending emergency departments without a GP's referral. A large percentage of these so-called self-referred patients can be attended by GPs.⁴⁰ An additional advantage of joining primary and hospital emergency care in one out-of-hours care facility is that patients do not have to choose which out-of-hours care facility they have to attend and are, therefore, always at the right facility.

Future Expectations

With the reorganization of general practice out-of-hours care, the discussion about the future organization of these services has emerged for several reasons. First, there are indications that ambulance, hospital emergency departments, and GP cooperatives increasingly suffer from inappropriate attenders (non-urgent medical complaints). Secondly, patients seem to have trouble choosing the right service for their complaints. It appears that more and more patients skip the GP and directly attend a hospital emergency department or call an ambulance. It has been argued that this type of self-referral leads to inefficient and costly care. Moreover, the workload and waiting times at the hospital emergency department have increased.

Third, efficiency issues also play a role. How can we efficiently organize out-of-hours care in such a way that effects and costs are optimized? The last issue concerns the effectiveness and safety of telephone triage services: are triage nurses competent for this task?

This discussion about the future of out-of-hours care points to an organizational model in which ambulance, hospital emergency department, and GP cooperatives collaborate and even integrate some of their services. In fact, it has been argued that optimally there would be only one telephone number for all out-of-hours care

that patients can call. Triage at this telephone number could direct patients to the most-appropriate service with respect to their medical problems. Probably many requests for out-of-hours care can be helped sufficiently with telephone advice only. However, this may only occur when that telephone triage is sufficiently safe.

Further, there is a tendency to integrate the GP cooperative with the local hospital emergency department as discussed earlier. Although up until now only a few GP cooperatives have made this step, many more are exploring this possibility. Whether this type of organization is the most appropriate and adequate way to serve patients during out-of-hours times remains an object of research. Possibly, other solutions to reduce the inappropriate demand on different out-of-hours services may also prove worth exploring, such as extending the hospital emergency department, educating patients through the media, or introducing financial incentives to reduce use of these services.

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