

# Out-of-hours service in Denmark: the effect of a structural change

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## SUMMARY

**Background.** In Denmark, the provision of out-of-hours care by general practitioners (GPs) was reformed at the start of 1992. Rota systems were replaced locally by county-based services. The new out-of-hours service resulted in a considerable reduction in the total number of GPs on call.

**Aim.** To describe how the patients experienced the change from a satisfaction point of view, and how the pattern of patient contact and the fee for GPs changed with the new system.

**Method.** The county of Funen was chosen as the geographical area where data were collected. A questionnaire measuring patient satisfaction was posted before the change, immediately after the change, and three years later to a random selection of patients who had been in contact with the out-of-hours service within two weeks before the mailing date. All primary care services for the Danish population are stored in a database (National Health Service Registry). From this continuously updated database, the contact pattern and the fee for GPs were extracted for 1991, 1992, and 1995.

**Results.** The total number of patient contacts was reduced by 16% in the first year, but by only 6% three years later. Three years after the change, there were more than twice as many telephone consultations as before the change, and there were only a third as many home visits. After three years, the GPs' fees were reduced by 20%. There was a significant decrease in patient satisfaction, although the overall level remained high. This decrease was lower three years after the change than immediately after the new system was introduced.

**Conclusion.** The new service had a major cost-effectiveness benefit, but there was a price to pay in patient satisfaction.

*Keywords:* out-of-hours; patient satisfaction; cost-effectiveness; contact surveys.

## Introduction

THE provision of out-of-hours care by GPs has been the subject of recent debate in Britain as patients' demands on the service increase.<sup>1-3</sup> Structural change in the out-of-hours service has recently been introduced in Britain.

In Denmark, the provision of out-of-hours care by general practitioners (GPs) came under increasing pressure in the 1980s because of growing demand for services by the public and increasing complaints from rural doctors about their heavy workload.<sup>4</sup> As a result, the out-of-hours service was reformed at the start of 1992.

The Danish National Health Insurance is based on principles of equity, with no payment by patients, similar to the British NHS.<sup>5</sup> More than 96% of the Danish population are listed with a particular GP, who acts as a gatekeeper to secondary care. On average, GPs have 1600 registered patients, for whom they are fully responsible for primary care for 24 hours a day. Out-of-hours care in Denmark is from 16.00 to 0.800, Monday to Friday, and for the whole weekend.

## Out-of-hours services before reform

Before the reform of January 1992, there were three main patterns of delivery of out-of-hours service in Denmark. Telephone consultations, surgery consultations, and home visits were available countrywide, each with an increasing service fee.

In large towns, a locally organized rota system provided out-of-hours care for the registered patients of 20 to 100 GPs. Doctors' duty sessions lasted eight to 12 hours. General practitioners contracted with a central service with receptionists to handle the patients' calls. The receptionist sometimes suggested that a patient should talk to the doctor on call for advice. There were emergency consultation centres, but these were rarely used; 90-95% of patients received home visits.

In villages and rural areas, between three and 10 doctors cooperated to provide out-of-hours cover according to a rota. Telephone calls from patients were answered by the doctors or their spouses. As many as half of patients' calls ended with telephone advice. Surgery consultations were common, and home visits were kept to a minimum.

## Reformed out-of-hours services

The new service applied to all 16 county administrations that run the Danish primary care service. Counties could tailor the system, taking into account the following main principles: (1) GPs were to retain 24-hour responsibility for patients; (2) health services were to remain free at the point of access for patients; (3) patients would always have direct telephone access to a GP, who would determine the need for telephone advice, surgery consultation, or home visit; (4) duty sessions were to be kept short — typically eight hours; and (5) the fees to be paid varied according to the type of care provided. Doctors answering patients' telephone calls had an incentive to offer telephone advice because the fee for this is higher than for referring patients to a surgery consultation or a home visit.

## Detailed arrangements of the service in the county of Funen

The population of the county of Funen ( $n = 460\ 000$ ) makes up approximately 9% of the Danish population and is representative of the Danish population with regard to sex and age distribution. The geographical area of Funen includes both rural and urban areas.

Until 1 January 1992, the out-of-hours service in the county of Funen was divided into 25 districts with approximately 30 GPs on call every 24 hours. This is equivalent to approximately one tenth of all the GPs in Funen.

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When the new service was implemented, eight emergency clinics were established at regional hospitals to provide convenient access for all parts of the county. Patients wanting out-of-hours service call one central triage centre with GPs ready to answer the telephone. According to expected patient demand, day of the week, and time, between one and six doctors are on duty at the triage centre. The planned call rate to each doctor on telephone duty is 10–15 per hour. At the emergency clinics, nine GPs alternate between surgery consultation and home visits.

After midnight, the out-of-hours service provides only telephone consultation and home visits, which are made by three doctors covering the whole of Funen. The introduction of the new out-of-hours service has thus resulted in a considerable reduction in the total number of GPs on call.

The introduction of the new service raised the following questions, which were very much on the minds of the population, the politicians, and the GPs:

1. How would people experience the change from a satisfaction point of view?
2. How would the pattern of patient contact change?
3. What would be the effect on the cost of the services?

The present article presents data concerning these questions.

## Method

Patient satisfaction was measured using a questionnaire posted to a random sample, and the contact pattern was extracted from the National Health Service Registry in the county of Funen.

## Pattern of patient contacts and fee for general practitioners

All primary care services for the Danish population are stored in a computer at the National Health Service Registry, which is being continuously updated. The patient/doctor contact pattern and out-of-hours fee for the GPs were extracted for the years 1991, 1992, and 1995.

## Patient satisfaction

Questionnaires were mailed to a random sample of patients in 1991 (six months before the change), in 1992 (six months after the change), and in 1995 (three years after the change). The questionnaires were sent to patients who had been in contact with the out-of-hours service during the two weeks before the mailing, as follows: to 631, 460, and 1631 patients in 1991, 1992, and 1995 respectively. The response rate was 76% ( $n = 480$ ), 74% ( $n = 322$ ), and 77% ( $n = 1256$ ) respectively. Non-responder analysis has not been carried out.

The following variables were registered in the questionnaire: age, sex, overall patient satisfaction, patient satisfaction with structure-oriented conditions (waiting time, transport problems), and the importance of being acquainted with the doctor on call. Patient satisfaction was related to a specific contact (all within two weeks).

Categorical measurements of satisfaction were tabulated for each year and compared using a chi-squared analysis.

## Results

### Number and type of patient contacts

Table 1 shows the total number of contacts and the distribution of the contact pattern in the year before the change, one year after, and three years after the change. During the first year after the change, the total number of contacts with the out-of-hours service was reduced by 16%. The number of contacts increased

during the following years and, three years after the change, the number was reduced by only 6% compared with the year before the change.

Moreover, there was a change in the pattern of contact. There were more than twice the number of telephone consultations in 1995 as in 1991, and there were only a third as many home visits in 1995 as in 1991.

### Fee for general practitioners

The county of Funen's costs for fees for the GPs were DKK50.1 million before the structural change (1991) and DKK38.5 million (1992) and DKK40.8 million (1995) after the structural change. After three years, the annual expenditure on doctors' fees was reduced by DKK9.3 million, equivalent to a reduction of 20%. The reduction was caused less by a fall in the total number of contacts than by a change in the contact pattern.

### Patient satisfaction

There was no difference in age (mean 37.4, 38.6, and 35.6 years) and sex (42%, 46%, and 45% men) distribution between 1991, 1992, and 1995.

Table 2 shows that patient satisfaction was significantly lower in 1992 than in 1991 ( $P = 0.00001$ ). Three years after the structural change (1995), the patients had become more satisfied, but were still significantly less satisfied than in 1991 ( $P = 0.0002$ ). However, the increase in dissatisfaction was small: 15% (28–13%) from 1991 to 1992 and 6% (19–13%) from 1991 to 1995.

If patient satisfaction is broken down into satisfaction with telephone consultations, surgery consultations, and house visits (Tables 3–5), it appears that surgery consultations alone gave rise to greater dissatisfaction. There was a drop in satisfaction in 1992 immediately after the reform for all types of patient contacts, but patients were beginning to be more satisfied again by 1995. In 1995, the patients expressed the same satisfaction with telephone consultations and home visits as in 1991. Patients who had received a surgery consultation in 1995 ( $n = 540$ ) stated that waiting time (24.1%) and uncertainty regarding length of waiting time (16.5%) gave rise to dissatisfaction. Patients who were unable to drive to the emergency clinic themselves and who had

**Table 1.** Number and type of patient contact in the years 1991, 1992, and 1995.

	1991	1992	1995
Telephone consultations	52 140 (22%)	100 000 (50%)	121 500 (54%)
Surgery consultations	49 770 (21%)	58 000 (29%)	60 750 (27%)
House visits	135 090 (57%)	42 000 (21%)	42 750 (19%)
Total number of contacts per 1000 inhabitants	0.5138	0.4317	0.4811

**Table 2.** Overall patient satisfaction in 1991, 1992, and 1995 (all contacts).

	1991	1992	1995
Satisfied (%)	68.2	50.5	55.7
Partly satisfied (%)	19.1	21.8	25.2
Dissatisfied (%)	12.7	27.7	19.1
Number	465	325	1203

**Table 3.** Patient satisfaction with telephone consultations in 1991, 1992, and 1995.

	1991	1992	1995
Satisfied (%)	61.9	47.6	55.1
Partly satisfied (%)	16.7	21.1	23.7
Dissatisfied (%)	20.2	25.9	20.3
Number	83	139	497

**Table 4.** Patient satisfaction with surgery consultations in 1991, 1992, and 1995.

	1991	1992	1995
Satisfied (%)	76.7	43.2	53.3
Partly satisfied (%)	16.3	24.3	27.0
Dissatisfied (%)	5.8	29.5	18.7
Number	170	92	540

**Table 5.** Patient satisfaction with home visits in 1991, 1992, and 1995.

	1991	1992	1995
Satisfied (%)	61.9	56.8	62.9
Partly satisfied (%)	21.9	16.2	22.8
Dissatisfied (%)	14.5	24.3	13.8
Number	212	72	167

to find other means of transport (7%) stated their dissatisfaction with that. Being acquainted with the doctor on call had no influence on satisfaction for most patients (75%).

## Discussion

It was expected that a radical change in the organization of the out-of-hours service would lead to increased dissatisfaction. Throughout the study period, patient satisfaction could be regarded as high; only 12.7% in 1991, 27.7% in 1993, and 19.1% in 1995 stated that they were dissatisfied. Overall, within this high level, there was an increase in patient dissatisfaction, although the increase was less in 1995 than in 1992 immediately after the introduction of the new system.

It is instructive to examine change in satisfaction in the three areas of telephone contacts, surgery consultation, and home visits. The number of home visits dropped so much from 1991 to 1995 that some contacts that would have been home visits have now become telephone consultations and some have become surgery consultations at primary care centres. It appears that telephone consultations, when they are substituted for home visits or surgery consultations, give rise to the least satisfaction. Dissatisfaction with certain aspects of surgery consultations may be remediable, e.g. uncertainty about waiting times, problems with transport; but some are not.<sup>6</sup> This finding, which supports earlier research,<sup>7,8</sup> suggests that it may be overly optimistic to assume that most home visits can be replaced by surgery consultations unless the problem of responsibility for transport is addressed.

The large increase in the number of telephone consultations suggests that many new customers may use the out-of-hours service just to get professional advice, now that they can be sure to get talk to a doctor and not just to a receptionist or to the doctor's spouse, which was the case before the reform. Thus, the increased number of telephone consultations probably shows that many just want to get telephone advice and, therefore, the new

system represents a better service in some ways.

The new service has major cost-effectiveness benefits, but there is a price to pay in patient satisfaction that has to be measured. A decision must be made as to whether a marginal reduction in a high level of patient satisfaction is a reasonable price to pay for increased cost-effectiveness.

It was interesting that acquaintance with the doctor on call was of no importance. This may suggest that the kind of health problems leading to contact with the out-of-hours service do not require personal knowledge of the doctor.

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