

# Quality of minor surgery by general practitioners in 1990 and 1991

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## SUMMARY

**Background.** The 1990 contract for general practitioners encouraged them to undertake minor surgical procedures in their practices.

**Aim.** A study was undertaken to determine whether the subsequent expansion of general practitioner minor surgery activity was accompanied by changes in quality of care.

**Method.** Data were analysed relating to minor operations conducted in 22 practices during April–June 1990 and April–June 1991.

**Results.** The volume of general practitioner minor surgery increased by 41% between the two study periods. Waiting time, accuracy of diagnosis, use of histology, adequacy of excision, complications and the need for corrective treatment in hospital did not change significantly between the two periods.

**Conclusion.** The findings do not support suggestions that the expansion of general practitioner minor surgery activity following the 1990 contract has been associated with an erosion of quality of care.

**Keywords:** minor surgery; quality of health care; patterns of work.

## Introduction

PREVIOUS research into the quality of general practitioner minor surgery was conducted before the expansion of this service following the 1990 contract for general practitioners, and studied 'enthusiast' general practitioners.<sup>1</sup> It has been suggested that the encouraging results of this work may not be replicable in a greatly expanded service which includes general practitioners with less experience who have responded to the financial incentive offered by the 1990 contract.<sup>2</sup> Fears have been expressed that the quality of the service would be eroded, resulting in poorer, potentially dangerous levels of care for patients, and necessitating referrals to hospital to correct errors made by general practitioners.<sup>3</sup>

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Submitted: 17 August 1993; accepted: 15 December 1993.

© British Journal of General Practice, 1994, 44, 364-365.

A study was undertaken to determine whether the expansion in general practitioner minor surgery activity was accompanied by any changes in quality of care.

## Method

Forty four practices offering minor surgery were selected at random from all such practices in four family health services authorities in England as part of a study examining aspects of general practitioner and hospital minor surgery. Thirteen practices recorded hospital referrals in such a way that patients could not be identified; these were excluded. Of the remaining 31 practices, 22 agreed to take part. General practitioner surgical activity was examined during the periods April–June 1990 and April–June 1991.

Patients who had undergone a general practitioner minor surgical procedure were identified by researchers from practice-held records of minor surgery claims. General practitioner notes (and if necessary hospital notes and histopathology records) were scrutinized.

The outcome measures employed were waiting times and a range of indicators of quality of care used in an earlier study: use of histology, adequacy of excision (as assessed by the pathologist), diagnostic accuracy (assessed by comparison of clinical and pathological diagnoses, complications (infection, pain or delayed healing) and subsequent referral for corrective treatment.<sup>1</sup>

## Results

The 70 general practitioners in the 22 practices increased their minor surgical workload by 41.2% between the two study periods, from 600 procedures in April–June 1990 to 847 procedures in April–June 1991. By that time the general practitioners were claiming a mean of 80% of the allowable number of procedures. Despite this large increase, there was almost no change in waiting time, 328 of 600 patients in 1990 (54.7%) and 452 of 847 in 1991 (53.4%) being treated on the day they first presented. The mean waiting time for treatment was 6.5 days in 1990 compared with 6.9 days in 1991.

There was no significant change between the two study periods in the proportion of excised lesions for which a histological diagnosis was sought (Table 1). General practitioners referred tissue selectively, depending on their clinical diagnosis (Table 2). Greater use of histology was made where their diagnosis was non-trivial or uncertain. Adequacy or inadequacy of excision was reported on 132 of the 265 specimens sent (49.8%). Observations about changes in frequency of inadequate excision must be interpreted cautiously; however there was no indication that the prevalence of inadequate excision had increased significantly between 1990 and 1991 (Table 1). All five histologically confirmed basal cell carcinomas and the one squamous cell carcinoma were excised completely; two cases of Bowen's disease of skin were treated (completeness of excision not stated in either case).

There was no evidence of a significant change in accuracy of diagnosis between the two study periods (Table 1). In all but four cases the misdiagnosis was not important; the commonest diagnostic errors were naevi and skin tags being diagnosed as warts (36 cases). However, three of the histologically proven basal cell

**Table 1.** Indices of quality of general practitioner minor surgical care in April–June 1990 and April–June 1991.

| Quality index   | No. (%) of specimens/all procedures |            |
|---|-------------------------------------|------------|
|   | 1990                                | 1991       |
| <i>Specimens</i>  |                                     |            |
| Excisions resulting in histological specimen <sup>a</sup> | 92 (52.9)                           | 152 (57.6) |
| Inadequate removal  | 4 (4.1)                             | 13 (7.7)   |
| Correct clinical diagnosis                                | 40 (41.2)                           | 84 (50.0)  |
| <i>All procedures</i>                                     |                                     |            |
| <i>Complications</i>                                      |                                     |            |
| Infection   | 2 (0.3)                             | 2 (0.2)    |
| Delayed healing/pain                                      | 10 (1.7)                            | 25 (3.0)   |
| <i>Referral to hospital for corrective treatment</i>      |                                     |            |
|   | 6 (1.0)                             | 4 (0.5)    |

<sup>a</sup>Cauterizations excluded because proportion of such procedures yielding a piece of tissue is unknown.

carcinomas had been diagnosed by the general practitioners as benign lesions, and the one squamous cell carcinoma had been misdiagnosed as a basal cell carcinoma.

Only 2.4% of procedures resulted in any complication (95% confidence interval (CI) 1.6% to 3.2%), and only 0.7% required secondary referral to hospital (95% CI 0.3% to 1.1%). Because complications were rare the study's power to detect small changes in incidence is limited; however there was no evidence to suggest that important changes in incidence of complications had taken place.

## Discussion

It is unlikely that the exclusion of 13 practices for reasons unrelated to minor surgery led to bias; the response rate among suitable practices was 71%, which suggests that the 22 practices formed a broadly representative sample.

The short waiting time for general practitioner surgery (one of the principal motivations for expanding the service<sup>4</sup>) did not change between the two study periods in 1990 and 1991 despite

**Table 2.** General practitioners' diagnoses of all minor surgical problems treated in general practice in 1990 and 1991, and proportions sent for histology.

| Clinical diagnosis                          | No. of specimens<br>(% sent for histology) |
|---|--|
| Wart  | 289 (24.9)                                 |
| Naevus                                      | 78 (75.6)                                  |
| Ganglion/cyst                               | 169 (19.5)                                 |
| Skin tag                                    | 93 (32.3)                                  |
| Abscess                                     | 38 (7.9)                                   |
| Benign skin tumour                          | 87 (27.6)                                  |
| Basal cell carcinoma                        | 4 (100)                                    |
| Squamous cell carcinoma                     | –  |
| Foreign body                                | 24 (0)                                     |
| Ingrowing toenail                           | 70 (0)                                     |
| Musculoskeletal problem (injection)         | 362 (0)                                    |
| Descriptive diagnosis only                  | 54 (68.5)                                  |
| Laceration                                  | 6 (0)                                      |
| Other                                       | 15 (6.7)                                   |
| Missing/no procedure/<br>no diagnosis given | 158 (1.3)                                  |
| Total                                       | 1447 (18.3)                                |

the substantial increase in workload. Waiting times compare favourably with hospital waiting times reported elsewhere.<sup>1</sup> The proportion of specimens sent for histological confirmation remained largely constant, although at a level which has attracted criticism.<sup>5-7</sup> Whether or not selective use of histology reflects poor quality of care depends on the extent to which it allows important diagnoses to escape detection. An intervention study is in progress to explore this further.

There was a small drop in the proportion of lesions diagnosed incorrectly. Although this was not statistically significant, this finding suggests that an important underlying increase in misdiagnosis is unlikely. The power of the study to detect subtle changes in rare outcomes such as inadequate removal of non-trivial lesions, complications and secondary referrals to hospital is limited, so inferences about these outcomes are less certain. However, it is evident that treatment remained successful in the majority of cases. There has been no tendency for the case mix in general practice to shift systematically towards more straightforward conditions,<sup>8</sup> so comparison of complication rates between the two periods is not prone to bias caused by a more straightforward case mix.

It is possible that the absence of a true pre-1990 contract for general practitioners period may have caused changes in quality of care to be underestimated slightly. However, the study encompassed a period during which much of the impact of the contract was felt, and if important changes in quality of care had accompanied this expansion it is likely that they would have been identified. This is supported by the observation that estimates of quality of care compare favourably with the results of research completed before the 1990 contract.<sup>1</sup>

It appears that quality of minor surgical care in general practice has been maintained through a period of rapid expansion of the service. During the first year of the 1990 contract, fears of an epidemic of complications arising from general practitioner minor surgery and of the need for extensive corrective work in hospital seem to have been unfounded.

## References

- O' Cathain A, Brazier JE, Milner PC, Fall M. Cost effectiveness of minor surgery in general practice: a prospective comparison with hospital practice. *Br J Gen Pract* 1992; **42**: 13-17.
- Godfrey E, Watkiss M, Schnieden H. Initiation and evaluation of a pilot scheme for minor surgery in general practice. *Health Trends* 1990; **22**: 57-59.
- Shrank A. Counting the costs of eager GPs' minor ops. *Hospital Doctor* 1992; **C12**: 26.
- Department of Health and the Welsh Office. *General practice in the National Health Service: a new contract*. London: HMSO, 1989.
- Hillan KJ, Johnson CP, Morton R. Effect of general practitioner contract on referral of specimens for histological examination. *BMJ* 1991; **303**: 1180.
- McWilliam LJ, Knox F, Wilkinson N, Ogarah P. Performance of skin biopsies by general practitioners. *BMJ* 1991; **303**: 1177-1179.
- Williams RB, Burdge AH, Jones SL. Skin biopsy in general practice. *BMJ* 1991; **303**: 1179-1180.
- Lowy A, Brazier J, Fall M, *et al*. GP minor surgery under the terms of the 1990 GP contract: effects on hospital workload. *BMJ* 1993; **307**: 413-417.

## Acknowledgements

This study was commissioned by the Department of Health which, along with Trent Regional Health Authority funds the core staff of the Medical Care Research Unit. The authors are grateful to Ms Juliet Brown, Dr Tim Usherwood and to the general practitioners and pathologists who participated in the study.

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