

and unnecessary surgery" is no greater than that in any other branch of surgery.

P G MCANDREW
Consultant maxillofacial surgeon

Rotherham District General Hospital,
Rotherham S60 2UD

1 Shepherd JP, Brickley M. Surgical removal of third molars. *BMJ* 1994;309:620-1. (10 September.)

Authors' reply

EDITOR,—Although no consensus was reached concerning prophylactic removal of third molars at the National Institutes of Health Conference in 1979, the decision and cost-benefit analyses published since have concluded that this is not an appropriate strategy.¹ Longitudinal studies show that the prevalence of disease associated with third molars peaks at ages 18-25¹ and that impacted third molars that are free of disease in middle aged people can be safely left in situ because disease rarely develops and is usually minor when it does.² A substantial number of impacted third molars erupt, given the chance.³ Malpositioned third molars are often valued by restorative dentists in the construction of bridges, dentures, and overdentures for older people.

Assessments by oral surgeons¹ and potential patients⁴ of health states (utilities) resulting from surgical intervention and non-intervention, when subjected to formal decision analysis, have shown that the best treatment strategy in relation to teeth that are free of disease is non-intervention. Dentists in teaching hospitals feel the same way about their own third molars.⁵ Theoretically, given accurate prediction about the development of virtually any disease, prophylactic surgical excision is best carried out when someone is young and fit. Unfortunately, in practice and given current knowledge, this prediction cannot be made for third molars, even when teeth are impacted.¹

"Free of disease" is a much better term than "asymptomatic" since follicular cysts and periodontal disease are often asymptomatic.

Clinical guidelines should be explicit about the circumstances in which removal of third molars in the absence of local disease may be justified—for example, in surgery for jaw deformity or when there is a risk of endocarditis. Evidence currently available, however, supports the view that prophylactic removal (of teeth that are free of disease) should be carried out only in exceptional, well defined circumstances. The same applies to exceptions to the general guidance that third molars should be removed on a day case or outpatient basis.

The findings of the audit in Trent reported by P G McAndrew are similar to those of the audit in Bristol cited in our editorial. In Trent consultants found that disease justifying surgical removal was absent in 76 of 275 patients, but only 17 patients were not scheduled for surgery. Russell Hopkins draws attention to important, unresolved questions. We welcomed the national third molar survey when it was initiated and look forward to seeing the results.

JONATHAN SHEPHERD
Professor of oral and maxillofacial surgery
MARK R BRICKLEY
Research fellow

University of Wales College of Medicine,
Cardiff CF4 4XY

1 Toth B. *The appropriateness of prophylactic extraction of impacted third molars*. Bristol: Healthcare Evaluation Unit, University of Bristol, 1993.

2 Ahlqvist M, Grondahl II G. Prevalence of impacted teeth and associated pathology in middle-aged and older Swedish women. *Community Dent Oral Epidemiol* 1991;19:116-9.

3 Von Wowerm N, Nielsen HO. The fate of impacted lower third molars after the age of 20. A five year clinical follow up. *Int J Oral Maxillofac Surg* 1989;18:277-80.

4 Brickley MR, Kay EJ, Shepherd JP. A decision making analysis of lower third molar surgery. *Med Decis Making* 1993;13:381.

5 Brickley MR, Heald H, Shepherd JP. Third molar wisdom. *Br Dent J* 1990;169:314.

Each case needs careful thought

EDITOR,—Jonathan P Shepherd and Mark Brickley's editorial looks at the arguments for abandoning the prophylactic removal of impacted or unerupted third molars but does not explain the historical reasons why this has been traditional practice.¹ For these we must go back to the days before penicillin. Sulphonamides were not particularly effective in treating serious odontogenic infections. Consequently, cellulitis spreading into the tissues from pericoronitis around impacted lower third molars and massive, dangerous abscesses involving the adjacent tissue spaces were common and their treatment far from satisfactory. If an impacted tooth had been affected by several episodes of pericoronitis the timing of its removal was crucial. Even then, osteomyelitis spreading from an infected socket was a distinct risk. These were the cogent reasons why, at that time, patients were advised to have their impacted but not infected third molars removed. All such problems have declined dramatically in the intervening years but have not entirely disappeared.

A further consideration was that surgery becomes increasingly difficult with advancing age. Before the mid-20s a tooth, once disimpacted, is easily dislodged from the socket. After this age a greater effort is required to disrupt the attachment. From middle age onwards the bone of the jaw becomes progressively harder and more brittle so that in elderly people the greater part of the socket may have to be removed before the tooth will move without a fracture. Until relatively recently most people were edentulous by their old age, and unerupted teeth emerged and became infected under their dentures. With the increasing hazards of anaesthetics and surgery with age the earlier removal, even of buried teeth, was a sensible policy, and for some patients it still is.

As Shepherd and Brickley point out, times have changed and the morbidity associated with removal of third molars now usually outweighs any advantage of prophylactic surgery. Nevertheless, mesio-angular and horizontal teeth can still lead to caries low down on the neck of the second molar, where it can affect the pulp before becoming clinically detectable.

Treatment habits are ripe for further change but not as a matter of policy, nor should prophylactic surgery be totally abandoned. Each case necessitates careful thought and discussion with the patient, who should be well informed—not least because our patients will grow older and the full consequences of some of our decisions are still to come.

G R SEWARD
Professor of oral and maxillofacial surgery

Hadley Wood,
Barnet,
Hertfordshire EN4 0LU

1 Shepherd JP, Brickley M. Surgical removal of third molars. *BMJ* 1994;309:620-1. (10 September.)

Early mortality after dental operations

What constitutes a dental operation?

EDITOR,—Valerie Seagroatt and Michael Goldacre propose that an almost doubled standardised mortality ratio during the year after dental operations may be explained by the fact that they studied patients receiving inpatient rather than outpatient treatment, who by definition would have a greater risk of postoperative complications.¹ The explanation may, however, be far simpler and may lie in the authors' ambiguous use of the term "dental operations." If the term means, as most people would understand it without further explanation, dentoalveolar surgery then their results are surprising. If, however, the term refers

to the full range of dental, oral, and maxillofacial surgery then such a high mortality ratio could be more easily explained: an appreciable proportion of patients admitted for oral and maxillofacial surgery will be suffering from oral, perioral, and salivary gland malignancy, which in itself carries a considerable risk of death.

It is unfortunate that Seagroatt and Goldacre do not give examples of specific dental operations, as they do with other operations, given that without further clarification their statistics are alarming—perhaps unnecessarily.

PETER S G F HARDEE
Surgical senior house officer

Whittington Hospital,
London N19 5NF

1 Seagroatt V, Goldacre M. Measures of early postoperative mortality: beyond hospital fatality rates. *BMJ* 1994;309:361-6. (6 August.)

Authors' reply

EDITOR,—The dental operations were those recorded as codes 251 and 252—"simple dental extraction" and "surgical extraction of tooth"—in the third revision of the Office of Population Censuses and Surveys' classification of surgical operations (as we specified in table I in our paper).¹ As we also specified, we excluded patients for whom a diagnosis of cancer had been recorded at admission. We therefore think that our results are unlikely to have been influenced by an appreciable proportion of patients having been admitted for oral and maxillofacial conditions that themselves carry a considerable risk of death.

Our aim was to quantify and attempt to interpret any short term mortality after operation by identifying, in particular, whether operations were followed by clustering of deaths shortly afterwards. We did not find a significant short term clustering of deaths after the dental operations. We found that the standardised mortality ratio for this group of patients was generally higher than the population average throughout the year.

We doubt that this is attributable in any way to the operations. We think that it is much more likely to be an effect of selection—that is, that the population that underwent dental operations was (in aggregate) slightly less healthy than the general population. One possibility, as we speculated, is that this may reflect the kind of patients who undergo these operations on an inpatient rather than an ambulatory basis. Another is that, more generally, some patients who require dental operations may be less healthy than average. If our explanation is correct—that the increased standardised mortality ratio throughout the post operative year in this group of patients is attributable to the characteristics of the patients rather than to the operations they undergo—the findings are not alarming in respect of the risk of dental surgery.

VALERIE SEAGROATT
Statistician
MICHAEL GOLDACRE
Director

Unit of Health Care Epidemiology,
Department of Public Health and Primary Care,
University of Oxford,
Oxford OX3 7LF

1 Office of Population Censuses and Surveys. *Classification of surgical operations, 3rd revision*. London: OPCS, 1975.

Future of preventive dentistry

EDITOR,—Aubrey Sheiham presents an interesting picture of dentistry in Britain today, but his view that we could do with fewer dentists and less treatment is one sided.¹ At present, the demand for dental services is still higher than the supply in