Physicians' attitudes to the autopsy

ABSTRACT—The overall autopsy rate (excluding coroner's autopsies) at a large teaching district general hospital over a four year period was 16.5%, but individual rates for ten general physicians varied from 5% to 35%. During this period, the mean autopsy rate for general medicine (14%) was significantly lower than rates for cardiology (21%), geriatrics (23%) and paediatrics (36%), but similar to general surgery (13%).

Autopsies were widely perceived as being of benefit to education and research, but physicians were often unaware of their value for confirming the diagnosis and for clinical audit, and over-estimated their actual autopsy rates on average by 50%. High rates (18–30%) were associated with consultants who had a definite policy regarding autopsies and had made this clear to their junior staff. Low rates (6–10%) obtained where there was no consultant policy on autopsies, and were frequently attributed by the consultant physicians to failure by their junior staff.

Physicians should be more aware of the value of autopsies, and should take responsibility for increasing and monitoring autopsy requests to improve clinical audit, quality assurance and medical education.

The number of autopsies performed in hospitals in Britain has been declining for several decades. Thirty years ago most district hospitals had an autopsy rate of about 60%; now it is rarely more than 25% [1,2]. The downward trend may largely be a reflection of the limited value now placed by clinicians on the autopsy despite a wealth of evidence to the contrary, but is also related to public perceptions and changing priorities of pathologists [3–5]. The introduction of market forces may accelerate this decline.

Clinicians are more likely to ask for an autopsy where there has been diagnostic uncertainty, in young patients, or in cases of special clinical interest [5]. Increased confidence in the accuracy of clinical diagnoses as a result of improvements in imaging and other techniques has reduced the perceived value of the autopsy, but discrepancies of up to 40% [6,7] between clinical and autopsy diagnoses have remained. Further, the recent joint working party report of the Royal Colleges *The autopsy and audit* comments that about one in ten cases coming to autopsy have pathological lesions that would have materially altered clinical management had they been identified before death [8].

The autopsy had an important function in the past in undergraduate and postgraduate medical education [9]. The smaller number of autopsies now performed may be reducing opportunities for teaching and research.

Since most hospital autopsies are performed on patients who die while under the care of physicians, we have reviewed the numbers requested by the general medical firms at St George's Hospital, London, and enquired into the attitude of individual physicians towards the autopsy, in an attempt to relate these findings to their respective autopsy rates.

Methods

The data refer to autopsies performed during 1988–1991 with the relatives' consent but do not include cases referred to the coroner. This is because the coroner's autopsy rate should not be influenced by the clinician's attitudes. Overall mortality data were obtained from hospital statistics on deaths and discharges by specialty and numbers of autopsies for each general medical firm were obtained from computerised records held by the department of histopathology.

A survey of the ten consultant general physicians and their first assistants (senior or junior registrars) was carried out by means of a structured questionnaire before autopsy data for individual firms were made available to them. At the time of this survey one of the consultant general physicians had neither a senior nor a junior registrar as first assistant, hence there were only 19 respondents. All questionnaires were returned.

The questions asked of each consultant and first assistant included:

- an estimate of their firm's autopsy rate for 1988–1991;
- their estimate of how often unexpected findings from autopsies occurred;
- whether a firm policy on requesting autopsies existed;
- their views on the role of the autopsy in medical education and research.

ADAM HARRIS, MRCP, *Registrar in Medicine, Department of Medicine, St. George's Hospital, London*
INA ISMAIL, MB BS, *Medical Audit Research Fellow, Department of Medicine, St George's Hospital, London*
SUSAN DILLY, MB, MRCPath, *Consultant Histopathologist, Department of Histopathology, St George's Hospital, London*
J DOUGLAS MAXWELL, MD, FRCP, *Consultant Physician, Department of Medicine, St. George's Hospital, London*

These questions were to be answered using either linear analogue scales or by deleting unfavourable responses.

Free text responses were sought to the following questions:

- what factors limited their autopsy requests;
- were their autopsy rates changing?

Actual and estimated autopsy rates for each general physician

Table 1 shows the actual autopsy rate for each consultant general physician for the years 1988–1991 (and his/her estimate of the firm's average autopsy rate). The rate for each consultant firm was calculated as a percentage from the number of autopsies requested divided by the number of deaths on that firm. The average autopsy rate for each consultant was compared with each individual physician's estimate of his/her rate over this four year period.

Perceived value of the autopsy

The results of the enquiry into physicians' perceptions of the role of autopsy in medical education and research are shown in Table 2.

Awareness of unexpected autopsy findings

All 19 physicians were asked to estimate how often they would expect an autopsy to reveal unexpected findings. Five estimated in excess of 75%, eight between 40% and 74% and the remaining six less than 40% (5%, 10%, 20%, 20% 30% and 35%). There was no correlation between the expected value of autopsies and actual autopsy rates. However, our results were biased by the two consultants with the lowest autopsy rates who, paradoxically, had the highest expectations of the value of the autopsy.

Table 1. A comparison of individual consultants' actual and estimated autopsy rates.

Consultant ID No.	Autopsy rate (%) 1988	1989	1990	1991	Average (%) 1988–1991	Estimate (%)
1	21	11	27	12	18	30
2	14	7	12	7	10	10
3	11	6	8	7	8	30
4	16	16	21	15	17	20
5	35	29	33	28	31	30
6	25	8	19	8	15	*
7	8	5	7	12	8	30
8	23	28	5	26	20	25
9	11	5	9	4	7	40
10	13	24	23	27	22	30
Group mean	18	14	16	14	16	27

*Unable to provide estimate

Table 2. Physicians' perception of the role of the autopsy in medical education and research.

	Perceived value: Little value	Useful	Very useful
Undergraduate education	0	3	16
Postgraduate education	1	4	14
Medical research	2	12	5

Policy on obtaining autopsy permission

Each consultant and first assistant was asked independently and confidentially to say whether a recognised autopsy policy existed for the firm. The responses for consultant and assistant were compared with each other, and with the average autopsy rate for the firm (Table 3). The difference in the autopsy rates between the four firms with a recognised active autopsy policy and the three without such a policy was statistically significant (23% *v* 9.3% $p = 0.03$, Mann Whitney U test).

Discussion

The American College of Pathologists suggested that an overall autopsy rate of about 35% of hospital deaths is necessary for adequate audit [10]. The Joint Working Party on Audit and Autopsy of the Royal Colleges of Physicians, Pathologists and Surgeons has recently reaffirmed this [8,12].

Our study has shown that autopsy rates at St George's Hospital are in line with the low national trends and well below the rates recommended by the Royal Colleges' report. The overall rate for the period

Table 3.

Consultant definite policy on autopsy?	Cons. ID No.	**First Assistant** aware of firm policy on autopsy?	Firm autopsy rate (%)
Yes	5	Yes	31
Yes	10	Yes	22
Yes	8	Yes	20
Yes	1	Yes	18
Yes	4	No	17
Yes	2	No	10
Yes	3	No	8
No	6	No	15
No	7	No	8
No	9	No	7

1988–1991 was 17%, but for patients who die while under the care of general physicans it was only 14%, little different from the 13% rate for general surgeons. In the same hospital, the autopsy rates between general physicians ranged from 5% to 35%, consistent with previous reports on the varying level of clinicians' interest in autopsies [13]. The majority of consultants made a reasonable estimate of their autopsy rates, but two of nine responders were wildly optimistic, overestimating rates by more than three fold. Interestingly, the physician with the highest estimate had the lowest actual rate.

Despite diagnostic advances, autopsies may reveal unexpected findings in up to 64% of cases, and clinically significant findings or errors in 15% of cases [4,7]. Consultants who expected autopsies to be informative tended to have higher request rates, but one-third of the physicians appeared to be unaware of the potential high diagnostic yield of post mortem examination.

On firms where consultants had a policy which had been discussed with their junior staff, autopsy rates varied between 18% and 31% ($p = 0.03$), but on firms without such a policy, rates were only 7% to 15%. Thus, increasing clinicians' awareness of the value of the autopsy, and communicating this to their junior staff might help to reverse declining autopsy rates.

The majority of physicians questioned in this survey felt that the autopsy had some value in medical research, and was useful or very useful for teaching both medical undergraduates and postgraduates. The General Medical Council has included this as an important aspect of general clinical training for pre-registration house officers (especially where they concerned their own patients) [11], and attendance at a weekly post mortem demonstration is timetabled by the medical school for all students on medical firms at St George's Hospital. However, these sessions are regularly cancelled through shortage of post mortems, and our experience suggests that falling autopsy numbers are now having an adverse effect on educational opportunities.

The task of requesting permission for post mortem examinations is usually delegated to the pre-registration house officer, and our questionnaire showed that a majority of the consultant physicians held the house officers responsible for the low autopsy request rate. However, the joint College report *Autopsy and audit* [8] points out that the responsibility for obtaining permission for autopsy should lie with the consultant in charge of the case. Consultants might best discharge this responsibility by educating their junior staff on the importance of autopsy and teaching them the communication skills necessary when seeking permission from relatives for post mortem examinations.

In an era when diagnosis is possible at molecular level, some clinicians regard the autopsy as obsolete [3]. But this view is not supported by the facts, the General Medical Council, or the Joint Colleges Working Party on Audit and Autopsy. The autopsy can make an important contribution to clinical audit, quality assurance and medical education [12,13] and our study has indicated some ways in which autopsy rates can be improved. However, commercial pressures on health care purchasers to reduce costs are likely to be detrimental to adequate autopsy performance [7], unless this is incorporated in training requirements for accreditation [5], or in quality standards prepared by health care providers and purchasers, specified in undergraduate teaching contracts and in SIFT funding arrangements.

References

1 Waldron HA, Vickerstaff L. Necropsy rates in the United Birmingham Hospitals. *Br Med J* 1975;**2:**326–8.
2 Cameron HM, McGoogan E, Clarke J, Wilson B. Trends in hospital necropsy rates: Scotland 1961–74. *Br Med J* 1977;**1:**1577–80.
3 Cameron HM, McGoogan E. Clinical attitudes to the autopsy. *Scott Med J* 1978;**23:**19–23.
4 Cameron HM. Future of the hospital autopsy. *Br J Hosp Med* 1988;**40:**335.
5 Start RD, Hector-Taylor MJ, Cotton DWK, *et al.* Factors which influence necropsy requests: a psychological approach. *J Clin Pathol* 1992;**45:**254–7.
6 Goldman L, Sayson R, Robbins S, *et al.* The value of the autopsy in three medical eras. *N Engl J Med* 1983;**308:**1000–5.
7 Nemetz PN, Ludwig J, Kurland LT. Assessing the autopsy. *Am J Pathol* 1987;**128:**362–79.
8 Joint Working Party of the Royal College of Pathologists, the Royal College of Physicians of London and the Royal College of Surgeons of England. *The autopsy and audit.* London: Royal College of Pathologists, 1991.
9 Cameron HM. The autopsy, past and present. *J R Coll Physicians Lond* 1984;**18:**236–9.
10 Yesner R, Robinson MJ, Goldman L, *et al.* A symposium on the autopsy. *Pathol Annu* 1985;**20:**441–7.
11 Educational Subcommittee of the General Medical Council. *Recommendations on general clinical training.* London: General Medical Council, 1992.
12 Lauder I. Auditing necropsies. *Br Med J* 1992;**303:**1214–5.
13 Anon. NCEPOD strikes again. *Lancet* 1992;**339:**1025.

Address for correspondence: Dr Adam Harris, Epsom General Hospital, Dorking Road, Epsom, Surrey KT18 7EG.