

disadvantaged children will continue to pay a price in terms of educational underachievement, vulnerability to substance abuse, and the many negative consequences of antisocial and criminal behavior.

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Low-Tech Autopsies in the Era of High-Tech Medicine

Continued Value for Quality Assurance and Patient Safety

It's back. The autopsy question, that is. It will not go away quietly. In 1983, in a theme issue on autopsy, *JAMA* announced that it was "declaring war on the nonautopsy."¹ We have, in truth, based on outcomes, lost most of the battles since then. But we have not lost the war. Today marks a new offensive.

Autopsies have traditionally been performed to:

1. establish the cause of death,
2. assist in determining the manner of death (ie, homicide, suicide, etc),
3. compare the premortem and postmortem findings,
4. produce accurate vital statistics,
5. monitor the public health,
6. assess the quality of medical practice,
7. instruct medical students and physicians,
8. identify new and changing diseases,
9. evaluate the effectiveness of therapies such as drugs, surgical techniques, and prostheses,
10. reassure family members, and
11. protect against false liability claims and settle valid claims quickly and fairly.²⁻⁶

Preservation of the autopsy has been said to be a "fundamental principle of all clinical research."⁷

But the autopsy has come on hard times since the 1960s.⁸ The Institute of Medicine of Chicago, Ill, has kept autopsy data for Chicago area hospitals (a reasonable sample for urban areas) since 1923 (Figure). The autopsy rates for hospital deaths at nonteaching hospitals nationally now average below 9%; many hospitals have autopsy rates at or near 0% despite many deaths. No one seems to know what proportion of nursing home deaths are autopsied, but it appears to be between 1/100 and 1/1000.⁹

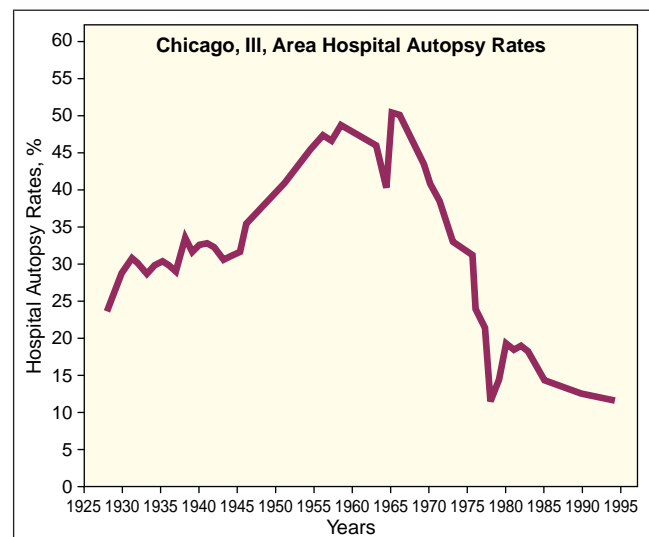
See also p 1245.

Everywhere I go to speak on quality of care and point out these chilling autopsy figures, physicians, policymakers, and the public ask me what happened. I tell them I do not know and

that reasons for the dramatic decline in autopsy rates are many and complex.⁴ Many thousands of words have been written about the impending "death" of the autopsy in the past 30 years. Various calls to arms have been issued. The autopsy is not dead, but it slumbers deeply, apparently the victim of a vast cultural delusion of denial. It is not exactly a conspiracy of silence or necessarily a massive intentional cover-up, but it is a movement with millions of players, all in complicity for widely varying reasons with the final result of "do not bother me with the truth" on the sickest patients—the ones who die.¹

In fact, there is still a giant gap between what high-tech diagnostic medicine can do in theory in ideal circumstances (very much, very well) and what high-tech diagnostic medicine does do in practice in real-life circumstances (not nearly so well), when human beings have to decide what, where, when, how, and why to use it. This gap becomes especially obvious when one looks at patients sick unto death.

Two 1998 reports validate the continued truth that there is an approximately 40% discordance between what clinical physicians diagnose as causes of death antemortem and what the postmortem diagnoses are. In one recent study with such results (44.9% discordance) at the University of Pittsburgh, Pa,



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two thirds of the undiagnosed conditions were considered treatable.¹⁰ This diagnostic discordance rate compares with 35% in 1938,¹¹ 39% in 1959,¹² 43% in 1974,¹³ and 47% in 1983.¹⁴ No improvement! In this issue of *JAMA*, Burton and colleagues¹⁵ at the Medical Center of Louisiana, New Orleans, document a 44% discordance between clinical and autopsy diagnoses, specifically of malignant neoplasms between 1986 and 1995.¹⁵ Their findings compare with rates of 36% disagreement on cancer diagnosis in 1923¹⁶ and 41% in 1965.¹⁷ Again, no improvement! Low-tech autopsy trumps high-tech medicine in getting the right answer again and again, even during the 1990s and even at academic medical centers.

In response to these obvious problems, the American Medical Association (AMA) House of Delegates (HOD) has adopted numerous excellent policies on autopsy between 1986 and 1997. These many policies include such phrases as “autopsy rates . . . be monitored periodically,” “request of an autopsy in all deaths,” “increase the rate of autopsy attendance,” “affirms the importance of autopsies,” “the necessity of autopsy for pathological correlation,” “fully integrate autopsy into the curriculum,” “necessary medical procedure,” “fundamental importance of the autopsy in any effective quality assurance program,” “initiate a program for the appropriate reimbursement of autopsies,” “call on all third-party payers including the Health Care Financing Administration (HCFA) to pay directly for autopsies” (AMA policies H-85.964, H-85.969, H-85.973, H-85.977, H-85.978, H-85.980, H-85.985, H-85.989, and H-85.993).

In adopting these important policies through the years, the HOD has called on numerous other organizations to act or assist in the autopsy rejuvenation effort. These include HCFA, National Committee for Quality Assurance, Liaison Committee on Medical Education, Joint Commission on Accreditation of Healthcare Organizations, Institute of Medicine, National Institute of Aging of the National Institutes of Health, other accrediting bodies, pathology associations, and risk management and quality assurance programs in hospitals. But, unfortunately, no substantial progress has yet been made.

However, there may be reason for fresh hope. Democrats and Republicans alike and many health care organizations state a new commitment to quality of care. HCFA has yet another intelligent new leader. The National Patient Safety Foundation at the AMA has been formed to prevent medical error and to create a culture dedicated to finding and disclosing truth. And, not least, the AMA, largely populated by new high-level staff and emboldened by a newly approved Vision, is freshly energized toward high-quality medical care and is showing signs of seriously trying again to implement the existing AMA HOD policies. Repeated past failures in this whole field mute exuberance, but the winds of change do blow and seem to be doing more than rustling the autumn leaves.

Among the best articles in print on correcting the autopsy problems were 2 from the Mayo Clinic in 1989.^{8,18} The 10 authors wrote that since “a wide range of medical, legal, social, and economic causes underlie the decline in autopsy rates . . . any

effort at amelioration must have an equally broad focus.” The authors analyzed 46 different potential interventions targeted at the general public, the medical community, nonmedical support personnel and organizations, and other organizations in respect to cost, benefits, difficulty, magnitude, and time until effect. These articles are worth serious consideration.

But, as a practical matter, the 2 clearest actions most likely to be effective quickly would be these. Approximately 75% of all US deaths affect Medicare beneficiary patients. Of the remaining 25% of deaths about 50% are coroner or medical examiner cases (another subject). HCFA proclaims quality of care to be important. Since the payment for autopsies performed on hospital inpatients is built into the diagnosis-related groups system² and since average hospital profits on Medicare inpatients in 1998 stand at 15.9%,¹⁹ HCFA could simply mandate that a minimum percentage (say 30%) of hospital deaths must be autopsied as a condition of participation in Medicare. There would be no increased costs to HCFA, since the autopsy for the Medicare patient is prepaid.² The family of the Medicare decedent has a right to an autopsy and to have its results. Also, the Joint Commission always states that quality of care matters. Thus, it could declare its recent autopsy policies the failures that they are and return to a system that works—a mandatory (say 25%) autopsy rate on hospital deaths as a condition to achieve Joint Commission on Accreditation of Healthcare Organizations accreditation.

Certainly these are bold moves and many will object. But if important steps like these were taken, we would see a rapid return to a hospital culture that values medical truth rather than values hiding it.

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The human suffering related to the 17 deaths, nearly 6000 hospitalizations, and more than 330 000 ED visits a year and the associated economic impacts justify further efforts to prevent dog bites.

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This letter was shown to Mr Weiss, who declined to reply.—ED.

Treatment of Smokeless Tobacco Addiction With Bupropion and Behavior Modification

To the Editor: An estimated 6.9 million people in the United States use smokeless tobacco, such as chewing tobacco or snuff. The health risks associated with smokeless tobacco use include increased rates of oropharyngeal cancer and increased subsequent cigarette smoking.¹ Despite the widespread use of smokeless tobacco, relatively few data have appeared in the literature regarding treatment of addiction to it.^{2,3} We describe a case of successful treatment of smokeless tobacco use with an approach that combined pharmacotherapy and behavior modification.

Report of a Case. A 31-year-old man had an 11-year history of using 1 can per day of smokeless tobacco and denied any history of smoking. The patient previously had made several attempts to stop use of smokeless tobacco with nicotine patches and abrupt cessation but had only limited success for a short time. He agreed to a trial of bupropion hydrochloride and a 4-week course of behavior modification. These sessions covered effective withdrawal strategies, coping skills for cravings, initial tobacco cessation, and extended maintenance skills. During the first session the patient was asked to set a quit date that would occur while he was in the group. The patient started treatment with bupropion hydrochloride (150 mg twice daily) 1 week prior to group treatment. After approximately 1 week of taking medication, the patient noted a reduction in cravings for smokeless tobacco, and at 5 weeks he was tobacco free. He noted few adverse effects associated with the medication but reported a change in the taste of the smokeless tobacco as the most prominent effect. After taking bupropion for approximately 3 days, the patient described the smokeless tobacco as "tasting terrible," and he felt the poor taste was 1 factor in becoming tobacco free. He also felt the

copied skills learned in the group allowed him to withstand tobacco cravings and avoid relapse. The medication was continued for a total of 10 weeks, and the patient had no difficulties and did not experience any withdrawal symptoms (eg, irritability, anxiety, headaches, dizziness) after its discontinuation. The patient was followed up at 1, 3, and 6 months and remains tobacco free at 8 months.

Comment. Recent research suggests a 2-pronged approach to tobacco cessation with use of both pharmacologic treatment and behavior modification provides maximum efficacy for tobacco cessation.⁴ Bupropion is considered a first-line therapy for smoking cessation.⁵ However, to our knowledge, use of bupropion for treatment in smokeless tobacco addiction has not been reported previously. The behavior modification used a psychoeducational format to develop effective coping strategies for tobacco cessation. These classes have been shown to significantly increase rates of tobacco cessation.⁴ Further studies are needed with a larger population to quantify the efficacy of bupropion hydrochloride and behavior modification in the treatment of nicotine addiction caused by smokeless tobacco.

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Disclaimer: Conclusions and opinions expressed are those of the authors and do not necessarily reflect the position or policy of the US government, Department of Defense, Department of the Army, US Army Medical Command, or the 82D Airborne Division.

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CORRECTIONS

Incorrect Web Site Address: In the Consensus Statement entitled "The Urgent Need to Reform Health Care Quality: Institute of Medicine National Roundtable on Health Care Quality," published in the September 16, 1998, issue of THE JOURNAL (1998;280:1000-1005), there was an incorrect Web site address. On page 1000, in the last sentence of the first paragraph of text, the Web site address should have read "http://www2.nas.edu/hcs/."

Incorrect Reference: In the Editorial entitled "Low-Tech Autopsies in the Era of High-Tech Medicine: Continued Value for Quality Assurance and Patient Safety," published in the October 14, 1998, issue of THE JOURNAL (1998;280:1273-1274), there was an incorrect reference. On page 1274, reference 10 should have read "Nichols L, Aronica P, Babe C. Are autopsies obsolete? *Am J Clin Pathol*. 1998; 110:210-218."