



from the overall perspective of the urgent necessity to reduce antibiotic prescription rates in Canada. This study was not perfect science and I do not, in general, advocate one type of physician remuneration over another. I am, however, extremely concerned with antibiotic prescription rates overall in Canada. Recently the first strains of vancomycin-resistant *Staphylococcus aureus* and *Streptococcus pneumoniae* were described. Will they appear in Canada? Of course they will. Yet we Canadian physicians continue to prescribe antibiotics at rates of close to 1 prescription per person per year.¹ It is time that we band together and markedly change this circumstance before it is too late. If that means discussing the influence of physician organization and remuneration then let's discuss it, quickly.

James M. Hutchinson, MD
St. John's, Nfld.

Reference

1. Controlling antimicrobial resistance: an integrated action plan for Canadians. *Can Commun Dis Rep* 1997; 23S7(Suppl).

"I need more power, Scotty"

Robert Patterson did a good job reviewing the workings of voice-recognition software.¹ Unfortunately, his conclusion that the "program did not save any money" is, in the current parlance of evidence-based medicine, not generalizable.

Patterson committed a cardinal error by using an underpowered computer system. The Pentium Pro 200-MHz machine with 64 MB of RAM that he used during his 3-month trial is woefully inadequate for the current generation of voice-recognition programs. Using the same dictation software as Patterson on a machine with the same power as his, I had virtually identical results. However, when I used the same software on a recently purchased computer with a Pentium II 400-MHz processor and 256 MB of RAM, both speed and accuracy were dramatically better.

A small but growing number of

physicians are now using voice-recognition software to create their medical-encounter notes. With the newest systems, most physicians can speak at their usual speed and achieve fairly accurate results.

Although the physician may choose to correct the raw transcription personally, most doctors find it more cost-effective to have a transcriptionist review the combined text and sound file and correct it. My own experiment over a 2-week period was cost-effective, although I was forced to discontinue using the program because of staffing problems.

At present, successful use of voice-recognition systems still requires that the physician and office staff be willing to withstand significant implementation hassles. As these programs continue to improve, however, increasing numbers of physicians will discover the benefits — both financial and time — provided by voice-recognition systems.

Mark Dermer, MD
Practice Management Consultant
MD Management Ltd.
Ottawa, Ont.

Reference

1. Patterson R. Dictation software: we're not there yet. *CMAJ* 1999;160(6):885-6.

[The author responds:]

Mark Dermer's experience with dictation software seems to echo my own — he too mentions significant implementation hassles and predicts that further improvements are needed before there is wide acceptance in the medical community.

I was simply trying to cut through the advertising hype to see how the system worked in a real office setting. I appreciate Dermer's concern that speed matters, but I doubt that most physicians have a 400-MHz machine with 256 MB of RAM in their offices, nor would they want to run out and buy one to run a single program.

Dragon Systems recommends a minimal system configuration of a 133-MHz Pentium processor with 32 MB of RAM to run its NaturallySpeaking

Medical Suite. These requirements were exceeded by my Pentium Pro 200.

With time, the price of personal computers will continue to drop and performance will improve, and soon speech-recognition programs will be cost-effective and virtually hassle free for all users. Until then, one intermediate step suggested by Dermer is to have a local transcriptionist edit the dictation. Another option is to save the dictation as a sound file and ship it via the Internet to a transcription company, several of which use typists in countries where labour costs are low. As for me, I've gone back to my tape recorder and office assistant.

Finally, for those who wish to learn more, an excellent review of dictation software technology, with a comparison of different commercial products, was published recently.¹

Robert Patterson MD, MSc
Leamington, Ont.

Reference

1. Zafar A, Overhage JM, McDonald J. Continuous speech recognition for clinicians. *J Am Med Inform Assoc* 1999;6:195-204.

Stop building up our hopes

I am a 41-year-old man and enjoy reading my partner's copy of *CMAJ*. The headline for one of your recent letters¹ nearly jumped off the page: "New method for prostate exam." Like a blackjack player whose first card is an ace, I was captivated and hopeful about a much-needed breakthrough in medical science.

The prospect of an alternative to the conventional method of digital rectal examination for palpation of the prostate would no doubt change the psyche of all male patients as they approach their routine medical. The detailed description of the conventional procedure, while sounding much like Ben Hogan articulating the benefits of supination and pronation in the golf swing, evoked images of great pain and discomfort. After whimpering about the status quo and being wistful about a discovery of great proportions, how can



I ever pick up *CMAJ* again after reading that the "new method" is nothing more than being asked to shift to a right lateral position instead of the left?

How depressing. Next time, have your editors tone down the titles so as not to create expectations that cruelly vanquish your faithful readers.

Robert Plamondon
Ottawa, Ont.

Reference

1. Hotte N. New method for prostate exam [letter]. *CMAJ* 1999;160(12):1697.

Detecting adverse drug reactions

In a *CMAJ* editorial, Namrata Bains and Duncan Hunter used hospital separation and mortality data to estimate that 0.05% of in-hospital mortality is associated with coded adverse drug reactions.¹ They extrapolated their data to rank mortality associated with adverse drug reactions as the 19th leading cause of death in Canada. This contrasts with the findings of Lazarou and colleagues,² who ranked adverse drug reactions as between the 4th and 6th leading cause of death in the US (106 000 deaths per year).

The fundamental issue is whether

coding adverse drug reactions in the medical record provides reliable and valid data on the true numbers of adverse drug reactions. Several studies have shown that self-reporting only identifies 5% of events.³⁻⁵ Daily chart review and solicited reporting have detected 5 times as many adverse drug reactions as coding.⁶

Methodologically, the first stage involved in linking a drug to an incident is the screening and correlation of an adverse clinical event to a specific drug. Thus, an adverse drug event only indicates suspected incidents, not causation.⁶ Detection is better using a combination of complementary methods.^{4,7} Next, the probability of a drug causing the event is determined, and then the incident is classified as an adverse drug reaction,⁸ using systematic criteria such as the algorithm of Naranjo and colleagues.⁹

The annual number of deaths due to adverse drug reactions in Canada can be estimated using the 1:10 ratio of the population of Canada to that of the US. Bates and colleagues reported that 76 000 deaths are due to adverse drug reactions annually in the US.⁶ This estimate would rank adverse drug reaction fatalities as the 7th leading cause of death in Canada, after cancer, heart disease, stroke, pulmonary disease and accidents, using 1995 Statistics Canada data.

Adverse drug reactions prolong hospital stay by an average of 4.6 days in Canada, costing Can\$300 million annually.¹⁰ If one-third of adverse drug reaction deaths are preventable,^{2,6} then we should ensure that research dollars are used to minimize this problem.

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1. Bains N, Hunter D. Adverse reporting on adverse reactions. *CMAJ* 1999;160(3):350-1.
2. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. *JAMA* 1998;279:1200-5.
3. Keith MR, Bellanger-McCleery RA, Fuchs JE. Multidisciplinary program for detecting and evaluating adverse drug reactions. *Am J Hosp Pharm* 1989;46:1809-18.
4. Classen DC, Pestotnik SL, Evans RS, Burke JP. Computerized surveillance of adverse drug events in hospital patients. *JAMA* 1991;266:2847-51.
5. Cullen DJ, Bates DJ, Small SD, Cooper JB, Nemaskal AR, Leape LL. The incident reporting system does not detect adverse drug events: a problem for quality improvement. *J Qual Improvement* 1995;21:541-8.
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7. Dalton-Bunnow MF, Halfachs FJ. Computer-assisted use of tracer antidote drugs to increase detection of adverse drug reactions: a retrospective and concurrent trial. *Hosp Pharm* 1993;28:746-55.
8. Naranjo CA, Shear NH, Lanctot KL. Advances in the diagnosis of adverse drug reactions. *J Clin Pharmacol* 1992;32:897-904.
9. Naranjo CA, Busto V, Seller EM, Sandor P,

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