



Dictation software: we're not there yet

Robert Patterson, MD

In brief

After reviewing new voice-dictation software, Dr. Rob Patterson concluded that although it might save doctors money, since they won't have to hire a transcriptionist, it will also be much more time consuming.

When Dr. Thomas Kovesi reviewed voice-dictation systems for *CMAJ* last year, he concluded that the programs resulted in increased workload and reduced overhead (158[8]:1059-60). Since then Dragon Systems has introduced an upgraded version of its NaturallySpeaking software, and I wanted to see if things had improved in the intervening year.

The NaturallySpeaking *Medical Suite* uses more advanced speech-recognition techniques, as well as a medically orientated vocabulary of nearly a quarter million words. It also has the ability to import macros — chunks of prefab text — and work with popular word-processor programs, such as Microsoft Word and WordPerfect.

It allows multiple users to create personal speech profiles, with the program adapting to each voice. As well, users can dictate on the run into a hand-held recorder and connect it to the computer later for transcription. The new software was favourably reviewed by many of the major computer journals, such as *PC World* and *PC Magazine*, but how well does it work in the real world? I decided to find out.

Setting

I practise general surgery in Leamington, a small city in southern Ontario. I have 2 office days a week and dictate letters on all new patients plus the majority of patients making follow-up visits. My letters are typed by a secretary who also works as a medical transcriptionist at the local hospital. Her fees average \$2 per page, which adds up to several hundred dollars per month. Her turnaround time is usually 2 to 4 days, and longer when she goes on vacation.

Could voice-dictation software provide faster, more convenient and less expensive transcription than my existing service?

"There was a lump in her Volvo"

When he tested dictation software, Dr. Robert Patterson kept track of transcription errors. Here are some of them:

The patient is now completely recovered.

The patient is not completely recovered.

The patient rarely drinks alcohol.

The patient really drinks alcohol.

I performed a core needle biopsy.

I performed a corneal biopsy.

The patient was placed on some antibiotics.

The patient was placed on scented miotics.

The patient's last operation was a panniculectomy.

The patient's last operation was a panic colectomy.

Past history includes laparoscopic cholecystectomy.

Past history includes otoscopic cholecystectomy.

I will send the patient to an orthopedic surgeon tomorrow.

I will send the patient to an orthopedic surgeon immoral.

There was a lump in her vulva.

There was a lump in her Volvo.

Dragon Systems provided a free copy of its NaturallySpeaking *Medical Suite* for this review. The package retails for US\$995 and includes software, a microphone and a copy of WordPerfect 8.0. I ran the program on a Dell Pentium Pro 200-MHz computer with 64 MB of RAM. Initial loading of the software and the "training" required for it to recognize my voice took about an hour. I then used voice-dictation software exclusively for 3 months for all office reports.

Results

The first thing I noted was that I had to alter the speed of dictation. Normal human speech approaches approxi-



mately 150 words per minute, and most physicians dictate at a speed that is much faster than that — perhaps 200 to 250 words per minute. NaturallySpeaking works best at a speed of 100 to 120 words per minute. That is faster than I can type but slower than I normally dictate. One colleague who watched me use the program said he would not be able to tolerate speaking that slowly while dictating.

Indeed, the additional time requirements changed my pattern of practice: instead of dictating after seeing each patient, I did all of this work at day's end and went home a bit later.

The program handles new words, such as proper nouns, well, but the process takes time. Even though I use colleagues' names frequently, most patients are mentioned but once. Therefore, I found it quicker to type patients' names directly into the report rather than add them to the vocabulary. Similarly, I found it much faster to use the mouse, not voice commands, to move the cursor.

Another major change from the Dictaphone is that the speaker must proofread, a service that is normally provided by the transcriptionist. This NaturallySpeaking software boasts an accuracy rate of up to 95%, which translates into an error rate of around one mistake per line of text. I found that correcting the mistakes took at least as long as the dictation.

Most of the errors involved smaller words — an/and, to/the, of/a — but other recognition errors resulted in a significant change in the meaning of the sentence, as seen in the accompanying sidebar. I had to proofread all letters carefully to ensure that the correct meaning had been captured.

Other frustrations? There was a tendency for long pauses in the midst of a task, which would leave me fidgeting. I also had to print the pages, a task normally done by the transcriptionist, and on some occasions printing caused the system to crash. This meant I had to reboot the computer, and the result was a loss of data and a very annoyed user.

One of the program's major advantages was its ability to complete dictations immediately, eliminating the need to wait for the transcriptionist to finish her work. I could deliver copies of my consultations to family practitioners the same day I saw the patient. I later learned that the clinical benefits accruing from my speedy turnaround appear somewhat doubtful — one family physician revealed that he was routinely 4 weeks behind in reading his mail.

Financially speaking . . .

This program did not save any money. The cost of the software would probably be recouped after a few months of going without transcription fees, but I estimate that us-

ing the computer instead of a tape recorder added 30 to 60 minutes to my workday. During that same time I could see 1 or 2 more patients and easily cover the cost of transcription.

The chief advantage of voice-dictation software is the rapid turnaround time. The primary disadvantage is that the process of dictating, proofreading and correcting errors, printing and distribution takes much longer than simply talking into a tape recorder and letting someone else do the rest of the work. Because of the time demands, no financial savings are realized.

If you are a control freak who likes to see immediate results and doesn't mind putting in longer hours, then this program may be for you. However, if your transcription service works well and is reasonably cheap, and if turnaround times are not crucial, then there is little incentive for you to switch.

The bottom line? Voice-dictation software has improved since *CMAJ* published its review last April, but improved speed and accuracy are needed before computerized voice dictation will be widely embraced by the medical profession.

Dr. Robert Patterson practises general surgery in Leamington, Ont.

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CMA Member Service Centre

tel 888 855-2555

fax 613 236-8864

cmamsc@cma.ca

