



# Speech Recognition and Healthcare Documentation:

A Revolution in Progress



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# Medical Documentation –

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## Costly and Growing

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It is estimated that the annual cost of medical transcription is over \$6 billion for labor alone. Even with this level of expenditure, more and more Health Information Management departments are hard pressed to keep up with the growth in the number of reports generated, fueled by regulatory requirements and increasing medical procedures. A recent survey of healthcare organizations by a respected trade group found that 30% of respondents believe their transcription volume and workload will increase in the next two years.<sup>1</sup>

While today's sophisticated digital dictation and transcription systems have revolutionized the efficient management and distribution of voice-originated documentation, leveraging the connectivity and flexibility of the network/Internet, backlogs persist in many organizations. The scarcity of well-trained medical transcriptionists makes the problem difficult to overcome with labor alone, whether in-house or outsourced.<sup>2</sup>

Clearly, transcription is a cost and timeliness pressure point for healthcare institutions, from hospitals to clinics to radiology practices, where estimates suggest transcription services can absorb 3-6% of revenue.<sup>3</sup>

<sup>1</sup> Medical Transcription Industry Association/Market Trends, Inc. survey, 2000.

<sup>2</sup> The U.S. Department of Labor, Bureau of Labor Statistics predicts the demand for employment of transcriptionists will grow faster than the average of other positions through 2010.

<sup>3</sup> Advance for Imaging and Oncology Administrators, February 2002.

# Speech Recognition to the Rescue

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Administrators and physicians are rapidly turning to speech recognition technology for help. Twenty-nine percent of the respondents to the previously mentioned transcription survey cited speech recognition as their leading investment to attack the growing workload. The recently concluded HIMSS survey of IT executives revealed that 19% are using speech recognition already, and 46% plan to implement the technology over the coming 24 months.<sup>4</sup>

This strong interest is driven by evidence and forecasts that speech recognition is a high impact technology. Gartner predicts that “continuous speech recognition will result in a 70% reduction in healthcare transcription staffing by 2004 (.7 probability).”<sup>5</sup>

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<sup>4</sup>13th Annual HIMSS (Health Information and Management Systems Society) Leadership Survey sponsored by Superior Consultant Company, 2002.

<sup>5</sup>Gartner, Inc., September 2001.

# Ready and Productive Today

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Speech recognition in healthcare should no longer be classified as a futuristic technology, one that will be “ready for prime time” years from now. Speech has already delivered demonstrable benefits in early adopter markets such as radiology. Dictaphone’s PowerScribe™ system is in daily use by over 2,000 radiologists, who dictate findings into a quality microphone and either self-edit their highly accurate speech-recognized drafts, or have them completed by transcriptionists. Through this tool, radiologists gain control of their reports.

And their organizations gain control of costs. At Boca Raton Community Hospital in Florida, for example, 16 radiologists are using PowerScribe to create some 220,000 reports annually. About 65 percent of all reports are being self-edited, while the balance are sent electronically to an outside service for editing and return to the physician for electronic signature.

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Improvement in average report turnaround times has been dramatic at BRCH, from 12-24 hours to less than five. Reliance on transcription services has been cut dramatically. “We’re creating the same number of reports, distributing them more quickly, and saving over \$600,000 a year on transcription service costs alone,” notes Rose Ann Webb, the BRCH health information director.

The experience at Boca is mirrored by many other PowerScribe users, such as Children’s National Medical Center in D.C., which has eliminated \$250,000 in yearly transcription costs since implementing the system.

Other case studies can be referenced at [www.nuance.com/dictaphone](http://www.nuance.com/dictaphone)

# Speech Recognition for the Enterprise

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If the industry is going to make a significant dent in the \$6 billion annual transcription expenditure, speech recognition must expand beyond a few departments to the entire enterprise. In 2001, Dictaphone introduced EXSpeech™ to do just that. This software joins the Enterprise Express® family, Dictaphone's flagship system used by some 3,000 hospitals and medical facilities for efficient creation, management, and distribution of dictated reports.

A crucial requirement for expanding adoption of speech recognition throughout the enterprise is support for telephone input. While the telephone has long been the preferred and convenient dictation device for physicians, existing speech recognition systems require users to dictate at a PC with microphone, limiting access for many doctors and forcing major changes in practice for others. EXSpeech software has advanced the technology so that it offers highly accurate recognition of patient reports dictated from any telephone.

This enhanced access is supported by another necessary tool for realizing the technology's benefits across the enterprise, namely, broad language models covering the full range of medical disciplines. Progress has been slowed in the past due to the need to create vocabularies for each discipline one by one. Existing systems frequently offer a limited menu of specialties or rely on a general English model adapted for the medical field. Dictaphone's EXSpeech attempts to solve this problem by offering comprehensive language models built from millions of words from the most significant medical reports, such as histories and physicals, discharge summaries, and operative reports.

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# Optimizing for Medical Transcriptionist Editing

Another key to achieving enterprise-level speech recognition is the ability to fit the predominant workflow of most organizations, which involves physicians dictating and transcriptionists completing documents. Dictaphone recognizes that many physicians are not initially ready for self-editing. With that in mind, Dictaphone has optimized the system's correction software for use by medical transcriptionists, though self-editing dictators can easily use it as well. Many features and "hot keys" geared to fast correction are available, and synchronized voice playback matched with recognized text enhances the editing process for transcriptionists.

EXSpeech software incorporates Dictaphone's Nothing But Speech™ technology, an innovative product feature that recognizes and suppresses non-verbal sounds and pauses in recorded dictation. The result is a significantly shorter recording that a transcriptionist can work through more quickly.

Customer experiences have ratified the productivity gains brought about by EXSpeech's approach. One hospital has achieved a 26% improvement in transcription productivity across all of its transcriptionists over a four month measurement period, allowing it to pull back inside the 20% of work that was being outsourced while also cutting its backlog from 10-15 hours down to under 7. Individual transcriptionists are achieving productivity gains of well over 40%, showing the great potential of this technology. Similarly, a Mississippi hospital has measured transcriptionist gains of 33% over a four month period and has dramatically reduced the turnaround time for progress notes.

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# Physician Self-editing: The High Octane Fuel for Cost Savings

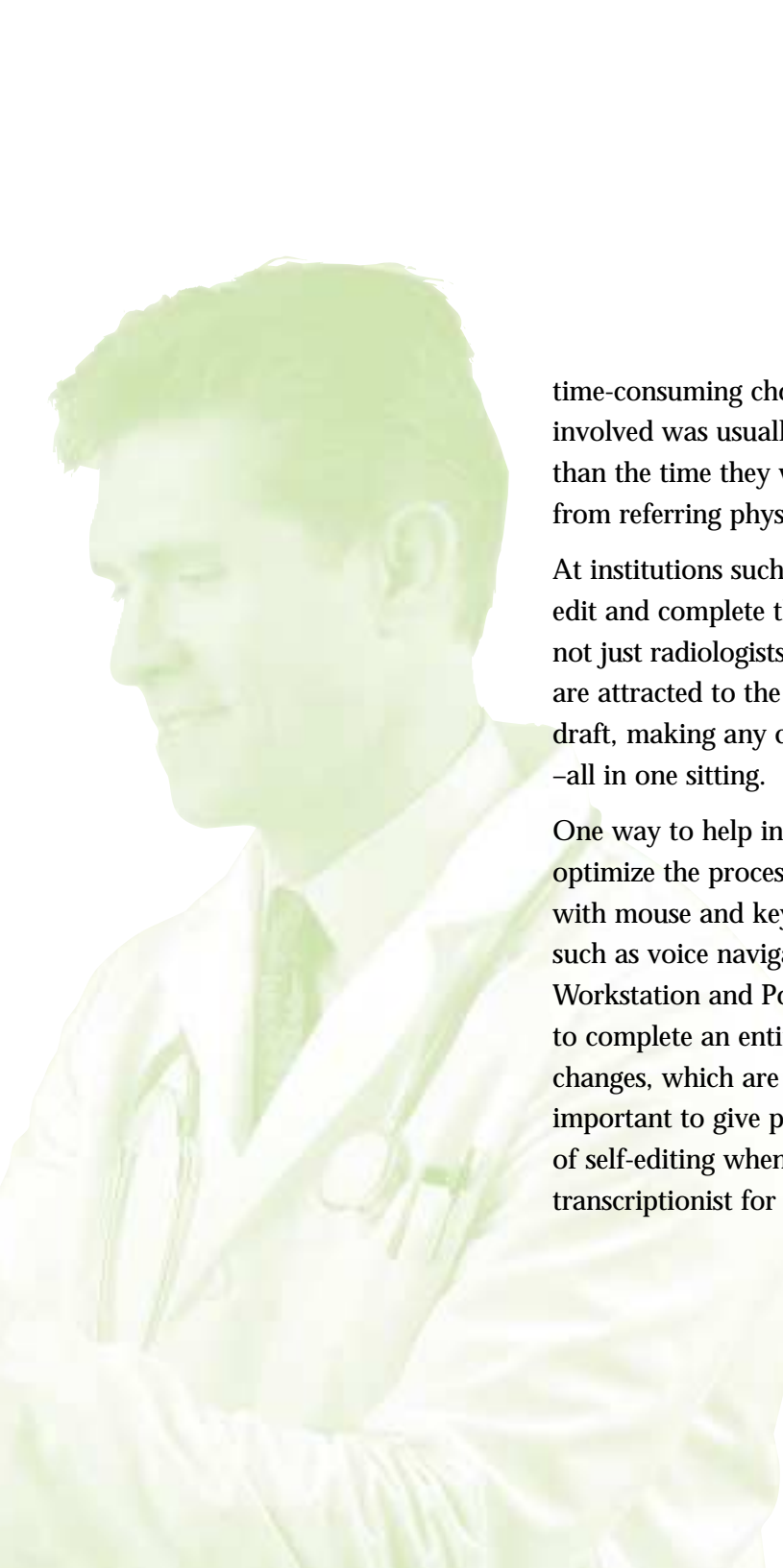
A good speech recognition solution must also provide strong tools to allow those doctors who need or want to edit their own reports to do so. Radiologists and other “power” dictators are natural candidates for self-editing due to their high volume of documentation and urgent turnaround time demands. As a leading industry consultant argues, “The greatest benefits of speech recognition are achieved when radiologists agree to do their own editing.”<sup>6</sup>

Radiologists at many healthcare organizations have embraced this idea. Boca Raton Community Hospital’s previously cited productivity gains have been driven by 65% self-editing. “There was some initial resistance to the idea of self-editing,” explains HIM director Rose Ann Webb. “Some doctors felt the editing would just add another

Many physicians are attracted to the “once and done” efficiency of dictating, reading the draft, making any changes needed, and electronically signing the document – all in one sitting.



<sup>6</sup>Joseph Marion, "Speech Recognition Users Need Patience, Training to Achieve Optimal Results," AuntMinnie.com, June 15, 2001. Marion is executive director at Superior Consultant Company.



time-consuming chore to the day. They quickly discovered that the time involved was usually just a few seconds, and that editing time was no more than the time they were spending fielding a constant flow of telephone calls from referring physicians looking for reports.”

At institutions such as the University of Virginia, 100% of the radiologists edit and complete their PowerScribe speech recognition documents. But it's not just radiologists who can benefit from such self-editing. Many physicians are attracted to the “once and done” efficiency of dictating, reading the draft, making any changes needed, and electronically signing the document –all in one sitting.

One way to help insure self-edit is productive for all is to provide tools that optimize the process. As always, choice is the key. Some are comfortable with mouse and keyboard; others are not. For the latter group, features such as voice navigation and editing are built into the Dictaphone Physician Workstation and PowerScribe software. Voice-driven editing allows doctors to complete an entire report through the microphone by speaking their changes, which are immediately recognized by the software. It is also important to give physicians the ultimate flexibility: the ability to opt out of self-editing when desired and send the speech-recognized document to a transcriptionist for completion.

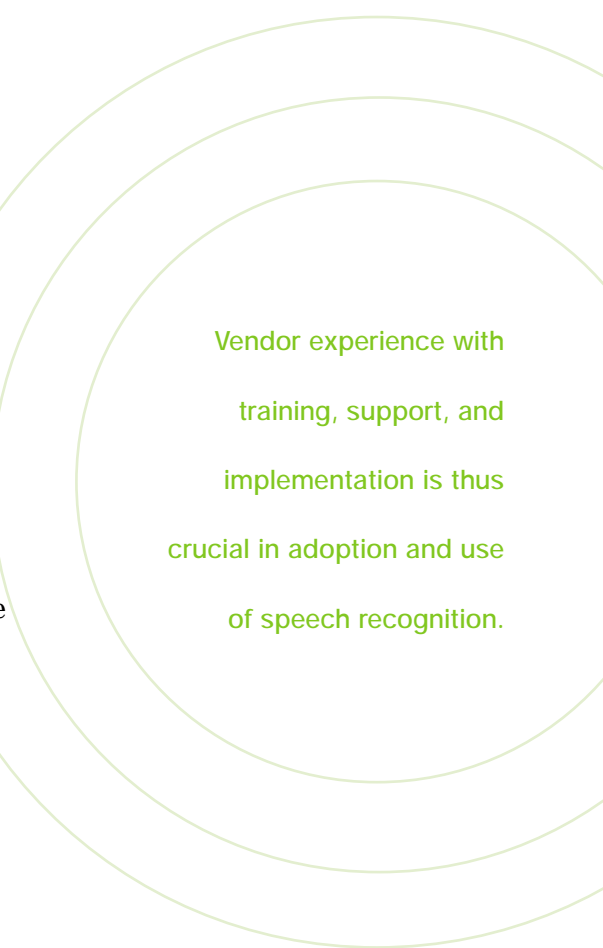
## It's About People, Too

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Making any advanced technology succeed in healthcare requires sensitivity to the human factors as well as the technical. While products such as EXSpeech minimize changes of practice, some are beneficial. For example, doctors who dictate punctuation and employ other simple good dictation habits can boost speech recognition productivity. For transcriptionists, the changes can be more dramatic. Editing a speech-recognized report is clearly different from typing from scratch.

Vendor experience with training, support, and implementation is thus crucial in adoption and use of speech recognition. Dictaphone understands these issues and has placed considerable investment into support to help organizations promote usage and derive maximum productivity benefits.

Additional considerations for helping transcriptionists include selecting initial champions when implementing the technology as well as adopting or enhancing incentive pay plans that reward productivity gains from using speech recognition. Ultimately, as speech recognition use expands, the industry will also begin to define new roles and career paths. Transcriptionists are poised to grow from being typists and coders to being clinical data specialists, data quality managers and decision support specialists – as envisioned by the American Health Information Management Association's Vision 2006 initiative.<sup>7</sup> These are high value jobs that will be needed by tomorrow's healthcare organizations – jobs being spawned by exciting technologies like speech recognition.



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<sup>7</sup>American Health Information Management Association, "Evolving HIM Careers: Seven Roles for the Future", 1999, p.4-5.

# About Dictaphone

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## Healthcare Solutions

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### Group

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Dictaphone Corporation's Healthcare Solutions Group (HSG) has a strong base of dictation, transcription, and report management system solutions currently being deployed in some of the world's premier healthcare organizations. Its full range of solutions automates and integrates several critical reporting and processing elements in the creation and management of health information, helping healthcare organizations and clinicians improve productivity and the quality of patient care. HSG's Enterprise Express system is an integral part of the creation and flow of patient information in over half of all U.S. hospitals, currently supporting several hundred-thousand physicians who use Dictaphone systems to generate an estimated one million reports and 100,000 hours of dictation a day. The company is also actively deploying speech recognition, expected to have a dramatic effect on reducing transcription costs and speeding report turnaround. Dictaphone's HSG has also introduced the ichart™ family of Internet subscription-based solutions that integrate existing products and technologies with new coding, natural language and data mining technologies, significantly reducing the costs of managing patient information.



For sales and product  
information visit Dictaphone at  
[www.nuance.com/dictaphone](http://www.nuance.com/dictaphone)  
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