



## Voice Recognition Dictation for Nurses

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According to a Robert Wood Johnson study, nurses spend only 31% of their time in direct patient care.<sup>1</sup> The American Academy of Nursing promotes making better use of nurses' time by using technology, which could reduce activities that are not related to direct patient care.<sup>1</sup> Because nurses spend greater than 30% of their time documenting,<sup>2</sup> voice recognition technology (VRT), an underused strategy in nursing, is one way to do this.

### **Voice Recognition Technology**

Voice recognition technology dates back to IBM and the late 1970s. Dragon Systems, an entrepreneurial company of the VRT pioneers, produced Dragon Dictate in the early 1990s. Dragon NaturallySpeaking, a product of Dragon Dictate, was tailored to the legal and medical professions.<sup>3</sup> "Dragon NaturallySpeaking 9 is the fast, easy, and accurate way to turn speech into text. Users can dictate into virtually any Windows-based

application at speeds up to 160 words per minute and achieve higher levels of accuracy than ever before."<sup>4</sup> While this voice recognition dictation (VRD) technology has not advanced to the state of reliability seen in popular science fiction such as Star Trek, slow hunt-and-peck typists may be able to use VRD effectively to do most of their documentation creation faster than by typing. Improved software and computers with faster hard drives and better microphones also contribute to the efficiency and accuracy of VRD.<sup>3</sup>

The potential of VRD for nurses is supported by many documented outcomes of cost and time efficiency as well as accuracy for physicians, dentists, and radiologists.<sup>5-8</sup> A recent news item ([http://findarticles.com/p/articles/mi\\_m0EIN/is\\_2008\\_May\\_15/ai\\_n25428839/](http://findarticles.com/p/articles/mi_m0EIN/is_2008_May_15/ai_n25428839/)) states "...the Florida Department of Children and Families, the largest social service agency in Florida, has selected Nuance's Dragon NaturallySpeaking software, the world's most accurate and best-selling speech recognition application, to speed the process of creating field case reports throughout the agency... More than 1,600 employees will be able to quickly and accurately complete comprehensive field reports—entirely by voice."

### **Dragon NaturallySpeaking Version 9**

As a nurse administrator, I know that nurses often stay long after the end of their shift to document patient care, the stress the nurses experience, and the cost of overtime to the organization. I was also a student earning a graduate degree with the desire to investigate the effectiveness of VRD by initiating a study at my place of employment.

The healthcare system's information technology (IT) staff provided contact information for the chief executive officer (CEO) of Accelerated Workflow Solutions, Kristi Bubrig. After a lengthy persuasive explanation of potential benefits of a VRD study with nurses, the CEO offered to provide a trainer for a specified day, all necessary software and accessories, and 2 hours of one-on-one training.

### **Use of the VRD software**

The 142-bed hospital IT department provided a PC with a 2G RAM, 1G processor, and 32-bit operating system. The participants were all registered nurses: a female, full-time associate degree prepared medical/surgical nurse with 28 years of nursing experience (participant 1), a male

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part-time resource nurse who was also a full-time associate professor with a master's degree in informatics and 30 years of nursing experience (participant 2), and a female full-time bachelor's degree-prepared administrative supervisor with more than 32 years of nursing experience (participant 3). All participants were employees of the hospital, familiar with the hospital's computerized keyboard nursing documentation system; had never used VRD in a health-care setting; and were willing to commit personal uncompensated hours to train. The participants were the first 3 registered nurses who met study criteria and responded first to a hospital-wide e-mail seeking participants. The 3 participants answered a brief 6-question pretraining questionnaire related to their nursing history and any prior experience with VRD. Participants 2 and 3 had used a form of VRD for personal use, but not Dragon NaturallySpeaking version 9.

The focus for VRD was on collecting patient data during an initial assessment. The study was in a simulation format; actual patients were not involved. The 3 participants had no prior knowledge of the simulated patient.

### Training

The assigned trainer had no prior experience training nurses but believed that a format/template for nurse documentation could prove advantageous for nurses. Unfortunately, the hospital's computerized nursing documentation software was not compatible and did not interface with the Dragon NaturallySpeaking version 9 software. The trainer was able to re-

format a scanned hardcopy of the facility's downtime assessment form to interface with the Dragon software. It was the trainer's ability to convert a scanned hardcopy assessment tool into a VRD format/template that allowed the study to occur.

The training period for each nurse involved a 20-minute period to allow the computer software to learn the nurses' voices. There was also an in-depth period of question and answers related to the Dragon NaturallySpeaking version 9 system. A user's guide, as well as a headset and microphone, was also provided for each participant. The participants were taught how to initiate corrections on the front, end, or during documentation allowing for 100% accuracy of the initial patient admission database. After the 2-hour training session, participants were assigned times to return for the simulation. A week after the initial training session, the 3 participants had completed the simulation. Immediately after the simulation, participants answered a 4-question survey and completed a comment section.

### Outcomes

All 3 participants declared that the use of VRD for documenting data from an initial patient assessment was preferred. They felt it was more user-friendly and less time consuming than computerized keyboard documentation.

After the simulation, all 3 nurses felt the use of VRD for documenting data from an initial patient assessment and the simulation with the converted admission assessment tool were time efficient and user-friendly. They

stated preference for use of VRD over computer and keyboard data entry.

### Summary

Recently, Butler Memorial Hospital was chosen as the winner of the Health Data Management Nursing Information Technology Innovation Award.<sup>9</sup> The recognition was given to the hospital's ability to codevelop a real-time documentation system that uses speech recognition technology. The facility took a transformational step in working with a vendor to codevelop the documentation system. In giving the award, the executive editor of *Health Data Management* stated, "Now nurses can document their tasks by simply dictating into a headset, with their notes automatically populating a clinical information system. The system streamlined the tasks involved, replacing the use of pagers, phones, computers, and paper charts with simply dictating into the headset. And by saving time on administrative tasks, including retyping handwritten notes on a computer, the nurses now can devote more time to treating patients instead."<sup>9</sup>

Physicians have had the luxury of dictating their assessments for years and are now using VRD. As nursing pioneer Vernice Ferguson said in 2004, "If it is good enough for physicians, then it is good enough for nurses."<sup>10</sup>

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